



# Full wwPDB X-ray Structure Validation Report ⓘ

Apr 11, 2022 – 01:51 pm BST

PDB ID : 4V5B  
Title : Structure of PDF binding helix in complex with the ribosome  
Authors : Bingel-Erlenmeyer, R.; Kohler, R.; Kramer, G.; Sandikci, A.; Antolic, S.;  
Maier, T.; Schaffitzel, C.; Wiedmann, B.; Bukau, B.; Ban, N.  
Deposited on : 2007-11-22  
Resolution : 3.74 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

|                                |   |  |
|--------------------------------|---|--|
| MolProbity                     | : | 4.02b-467  |
| Xtriage (Phenix)               | : | 1.13   |
| EDS                            | : | 2.27   |
| Percentile statistics          | : | 20191225.v01 (using entries in the PDB archive December 25th 2019) |
| Refmac                         | : | 5.8.0267   |
| CCP4                           | : | 7.1.010 (Gargrove)   |
| Ideal geometry (proteins)      | : | Engh & Huber (2001)  |
| Ideal geometry (DNA, RNA)      | : | Parkinson et al. (1996)  |
| Validation Pipeline (wwPDB-VP) | : | 2.27   |

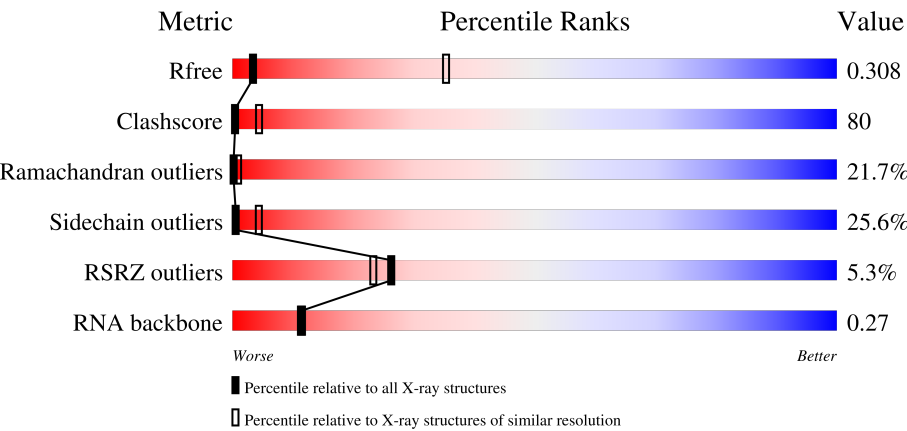
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.74 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



| Metric                | Whole archive<br>(#Entries) | Similar resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| R <sub>free</sub>     | 130704                      | 1001 (3.90-3.58)                                      |
| Clashscore            | 141614                      | 1063 (3.90-3.58)                                      |
| Ramachandran outliers | 138981                      | 1027 (3.90-3.58)                                      |
| Sidechain outliers    | 138945                      | 1023 (3.90-3.58)                                      |
| RSRZ outliers         | 127900                      | 1006 (3.92-3.56)                                      |
| RNA backbone          | 3102                        | 1028 (4.46-3.00)                                      |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 1   | A0    | 56     | <div><div>11%</div><div>16%</div><div>43%</div><div>38%</div><div>.</div></div>  |
| 1   | C0    | 56     | <div><div>11%</div><div>12%</div><div>41%</div><div>46%</div></div>              |
| 2   | A1    | 54     | <div><div>19%</div><div>15%</div><div>48%</div><div>33%</div><div>.</div></div>  |
| 2   | C1    | 54     | <div><div>19%</div><div>11%</div><div>44%</div><div>39%</div><div>6%</div></div> |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 3   | A2    | 46     |                  |
| 3   | C2    | 46     |                  |
| 4   | A3    | 64     |                  |
| 4   | C3    | 64     |                  |
| 5   | A4    | 38     |                  |
| 5   | C4    | 38     |                  |
| 6   | A5    | 16     |                  |
| 7   | AA    | 120    |                  |
| 7   | CA    | 120    |                  |
| 8   | AB    | 2904   |                  |
| 8   | CB    | 2904   |                  |
| 9   | AC    | 273    |                  |
| 9   | CC    | 273    |                  |
| 10  | AD    | 209    |                  |
| 10  | CD    | 209    |                  |
| 11  | AE    | 201    |                  |
| 11  | CE    | 201    |                  |
| 12  | AF    | 178    |                  |
| 12  | CF    | 178    |                  |
| 13  | AG    | 176    |                  |
| 13  | CG    | 176    |                  |
| 14  | AH    | 149    |                  |
| 14  | CH    | 149    |                  |
| 15  | AI    | 141    |                  |
| 15  | CI    | 141    |                  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 16  | AJ    | 142    |                  |
| 16  | CJ    | 142    |                  |
| 17  | AK    | 123    |                  |
| 17  | CK    | 123    |                  |
| 18  | AL    | 144    |                  |
| 18  | CL    | 144    |                  |
| 19  | AM    | 136    |                  |
| 19  | CM    | 136    |                  |
| 20  | AN    | 127    |                  |
| 20  | CN    | 127    |                  |
| 21  | AO    | 117    |                  |
| 21  | CO    | 117    |                  |
| 22  | AP    | 114    |                  |
| 22  | CP    | 114    |                  |
| 23  | AQ    | 117    |                  |
| 23  | CQ    | 117    |                  |
| 24  | AR    | 103    |                  |
| 24  | CR    | 103    |                  |
| 25  | AS    | 110    |                  |
| 25  | CS    | 110    |                  |
| 26  | AT    | 100    |                  |
| 26  | CT    | 100    |                  |
| 27  | AU    | 103    |                  |
| 27  | CU    | 103    |                  |
| 28  | AV    | 94     |                  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 28  | CV    | 94     |                  |
| 29  | AW    | 84     |                  |
| 29  | CW    | 84     |                  |
| 30  | AX    | 63     |                  |
| 30  | CX    | 63     |                  |
| 31  | AY    | 58     |                  |
| 31  | CY    | 58     |                  |
| 32  | AZ    | 70     |                  |
| 32  | CZ    | 70     |                  |
| 33  | BA    | 1542   |                  |
| 33  | DA    | 1542   |                  |
| 34  | BB    | 240    |                  |
| 34  | DB    | 240    |                  |
| 35  | BC    | 232    |                  |
| 35  | DC    | 232    |                  |
| 36  | BD    | 205    |                  |
| 36  | DD    | 205    |                  |
| 37  | BE    | 166    |                  |
| 37  | DE    | 166    |                  |
| 38  | BF    | 135    |                  |
| 38  | DF    | 135    |                  |
| 39  | BG    | 178    |                  |
| 39  | DG    | 178    |                  |
| 40  | BH    | 129    |                  |
| 40  | DH    | 129    |                  |


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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 41  | BI    | 129    |                  |
| 41  | DI    | 129    |                  |
| 42  | BJ    | 103    |                  |
| 42  | DJ    | 103    |                  |
| 43  | BK    | 128    |                  |
| 43  | DK    | 128    |                  |
| 44  | BL    | 123    |                  |
| 44  | DL    | 123    |                  |
| 45  | BM    | 117    |                  |
| 45  | DM    | 117    |                  |
| 46  | BN    | 100    |                  |
| 46  | DN    | 100    |                  |
| 47  | BO    | 89     |                  |
| 47  | DO    | 89     |                  |
| 48  | BP    | 82     |                  |
| 48  | DP    | 82     |                  |
| 49  | BQ    | 83     |                  |
| 49  | DQ    | 83     |                  |
| 50  | BR    | 74     |                  |
| 50  | DR    | 74     |                  |
| 51  | BS    | 91     |                  |
| 51  | DS    | 91     |                  |
| 52  | BT    | 86     |                  |
| 52  | DT    | 86     |                  |
| 53  | BU    | 71     |                  |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 53  | DU    | 71     |  |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res  | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 54  | MG   | BA    | 4053 | -         | -        | -       | X                |
| 54  | MG   | BA    | 4054 | -         | -        | -       | X                |
| 54  | MG   | DA    | 1612 | -         | -        | -       | X                |

## 2 Entry composition

There are 55 unique types of molecules in this entry. The entry contains 284264 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called 50S RIBOSOMAL PROTEIN L32.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 1   | A0    | 56       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 444   | 269 | 94 | 80 | 1 |         |         |       |
| 1   | C0    | 56       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 444   | 269 | 94 | 80 | 1 |         |         |       |

- Molecule 2 is a protein called 50S RIBOSOMAL PROTEIN L33.

| Mol | Chain | Residues | Atoms |     |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 2   | A1    | 54       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 441   | 284 | 81 | 76 |         |         |       |
| 2   | C1    | 54       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 441   | 284 | 81 | 76 |         |         |       |

- Molecule 3 is a protein called 50S RIBOSOMAL PROTEIN L34.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 3   | A2    | 46       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 377   | 228 | 90 | 57 | 2 |         |         |       |
| 3   | C2    | 46       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 377   | 228 | 90 | 57 | 2 |         |         |       |

- Molecule 4 is a protein called 50S RIBOSOMAL PROTEIN L35.

| Mol | Chain | Residues | Atoms |     |     |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 4   | A3    | 64       | Total | C   | N   | O  | S | 0       | 0       | 0     |
|     |       |          | 504   | 323 | 105 | 74 | 2 |         |         |       |
| 4   | C3    | 64       | Total | C   | N   | O  | S | 0       | 0       | 0     |
|     |       |          | 504   | 323 | 105 | 74 | 2 |         |         |       |

- Molecule 5 is a protein called 50S RIBOSOMAL PROTEIN L36.



| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 5   | A4    | 38       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 302   | 185 | 65 | 48 | 4 |         |         |       |
| 5   | C4    | 38       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 302   | 185 | 65 | 48 | 4 |         |         |       |

- Molecule 6 is a protein called C-TERM HELIX PDF.

| Mol | Chain | Residues | Atoms |    |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|---------|-------|
| 6   | A5    | 16       | Total | C  | N  | O  | 0       | 0       | 0     |
|     |       |          | 134   | 84 | 28 | 22 |         |         |       |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| A5    | 146     | ALA      | LEU    | engineered mutation | UNP P0A6K3 |

- Molecule 7 is a RNA chain called 5S RIBOSOMAL RNA.

| Mol | Chain | Residues | Atoms |      |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| 7   | AA    | 117      | Total | C    | N   | O   | P   | 0       | 0       | 0     |
|     |       |          | 2507  | 1116 | 459 | 815 | 117 |         |         |       |
| 7   | CA    | 117      | Total | C    | N   | O   | P   | 0       | 0       | 0     |
|     |       |          | 2507  | 1116 | 459 | 815 | 117 |         |         |       |

- Molecule 8 is a RNA chain called 23S RIBOSOMAL RNA.

| Mol | Chain | Residues | Atoms |       |       |       |      | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 8   | AB    | 2841     | Total | C     | N     | O     | P    | 0       | 0       | 0     |
|     |       |          | 60995 | 27210 | 11229 | 19715 | 2841 |         |         |       |
| 8   | CB    | 2841     | Total | C     | N     | O     | P    | 0       | 0       | 0     |
|     |       |          | 60995 | 27210 | 11229 | 19715 | 2841 |         |         |       |

- Molecule 9 is a protein called 50S RIBOSOMAL PROTEIN L2.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 9   | AC    | 268      | Total | C    | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 2054  | 1271 | 417 | 359 | 7 |         |         |       |
| 9   | CC    | 268      | Total | C    | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 2054  | 1271 | 417 | 359 | 7 |         |         |       |

- Molecule 10 is a protein called 50S RIBOSOMAL PROTEIN L3.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 10  | AD    | 209      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1565  | 979 | 288 | 294 | 4 |         |         |       |
| 10  | CD    | 209      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1565  | 979 | 288 | 294 | 4 |         |         |       |

- Molecule 11 is a protein called 50S RIBOSOMAL PROTEIN L4.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 11  | AE    | 201      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1552  | 974 | 283 | 290 | 5 |         |         |       |
| 11  | CE    | 201      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1552  | 974 | 283 | 290 | 5 |         |         |       |

- Molecule 12 is a protein called 50S RIBOSOMAL PROTEIN L5.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 12  | AF    | 178      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1420  | 905 | 251 | 258 | 6 |         |         |       |
| 12  | CF    | 178      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1420  | 905 | 251 | 258 | 6 |         |         |       |

- Molecule 13 is a protein called 50S RIBOSOMAL PROTEIN L6.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 13  | AG    | 176      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1323  | 832 | 243 | 246 | 2 |         |         |       |
| 13  | CG    | 176      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1323  | 832 | 243 | 246 | 2 |         |         |       |

- Molecule 14 is a protein called 50S RIBOSOMAL PROTEIN L9.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 14  | AH    | 149      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1111  | 699 | 197 | 214 | 1 |         |         |       |
| 14  | CH    | 149      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1111  | 699 | 197 | 214 | 1 |         |         |       |

- Molecule 15 is a protein called 50S RIBOSOMAL PROTEIN L11.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 15  | AI    | 141      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1032  | 651 | 179 | 196 | 6 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 15  | CI    | 141      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1032  | 651 | 179 | 196 | 6 |         |         |       |

- Molecule 16 is a protein called 50S RIBOSOMAL PROTEIN L13.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 16  | AJ    | 141      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1113  | 704 | 211 | 194 | 4 |         |         |       |
| 16  | CJ    | 141      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1113  | 704 | 211 | 194 | 4 |         |         |       |

- Molecule 17 is a protein called 50S RIBOSOMAL PROTEIN L14.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 17  | AK    | 122      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 931   | 582 | 180 | 164 | 5 |         |         |       |
| 17  | CK    | 122      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 931   | 582 | 180 | 164 | 5 |         |         |       |

- Molecule 18 is a protein called 50S RIBOSOMAL PROTEIN L15.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 18  | AL    | 144      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1053  | 654 | 207 | 190 | 2 |         |         |       |
| 18  | CL    | 144      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1053  | 654 | 207 | 190 | 2 |         |         |       |

- Molecule 19 is a protein called 50S RIBOSOMAL PROTEIN L16.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 19  | AM    | 136      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1074  | 686 | 205 | 177 | 6 |         |         |       |
| 19  | CM    | 136      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1074  | 686 | 205 | 177 | 6 |         |         |       |

- Molecule 20 is a protein called 50S RIBOSOMAL PROTEIN L17.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 20  | AN    | 127      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1008  | 621 | 204 | 178 | 5 |         |         |       |
| 20  | CN    | 127      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1008  | 621 | 204 | 178 | 5 |         |         |       |

- Molecule 21 is a protein called 50S RIBOSOMAL PROTEIN L18.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 21  | AO    | 117      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 900   | 557 | 179 | 163 | 1 |         |         |       |
| 21  | CO    | 117      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 900   | 557 | 179 | 163 | 1 |         |         |       |

- Molecule 22 is a protein called 50S RIBOSOMAL PROTEIN L19.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 22  | AP    | 114      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 917   | 574 | 179 | 163 | 1 |         |         |       |
| 22  | CP    | 114      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 917   | 574 | 179 | 163 | 1 |         |         |       |

- Molecule 23 is a protein called 50S RIBOSOMAL PROTEIN L20.

| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 23  | AQ    | 117      | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 947   | 604 | 192 | 151 |         |         |       |
| 23  | CQ    | 117      | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 947   | 604 | 192 | 151 |         |         |       |

- Molecule 24 is a protein called 50S RIBOSOMAL PROTEIN L21.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 24  | AR    | 103      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 816   | 516 | 153 | 145 | 2 |         |         |       |
| 24  | CR    | 103      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 816   | 516 | 153 | 145 | 2 |         |         |       |

- Molecule 25 is a protein called 50S RIBOSOMAL PROTEIN L22.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 25  | AS    | 110      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 857   | 532 | 166 | 156 | 3 |         |         |       |
| 25  | CS    | 110      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 857   | 532 | 166 | 156 | 3 |         |         |       |

- Molecule 26 is a protein called 50S RIBOSOMAL PROTEIN L23.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 26  | AT    | 100      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 778   | 491 | 146 | 139 | 2 |         |         |       |
| 26  | CT    | 100      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 778   | 491 | 146 | 139 | 2 |         |         |       |

- Molecule 27 is a protein called 50S RIBOSOMAL PROTEIN L24.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 27  | AU    | 103      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 780   | 492 | 147 | 141 |   |         |         |       |
| 27  | CU    | 103      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 780   | 492 | 147 | 141 |   |         |         |       |

- Molecule 28 is a protein called 50S RIBOSOMAL PROTEIN L25.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 28  | AV    | 94       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 753   | 479 | 137 | 134 | 3 |         |         |       |
| 28  | CV    | 94       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 753   | 479 | 137 | 134 | 3 |         |         |       |

- Molecule 29 is a protein called 50S RIBOSOMAL PROTEIN L27.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 29  | AW    | 84       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 634   | 391 | 129 | 113 | 1 |         |         |       |
| 29  | CW    | 84       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 634   | 391 | 129 | 113 | 1 |         |         |       |

- Molecule 30 is a protein called 50S RIBOSOMAL PROTEIN L29.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 30  | AX    | 63       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 509   | 313 | 99 | 95 | 2 |         |         |       |
| 30  | CX    | 63       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 509   | 313 | 99 | 95 | 2 |         |         |       |

- Molecule 31 is a protein called 50S RIBOSOMAL PROTEIN L30.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 31  | AY    | 58       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 449   | 281 | 87 | 79 | 2 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 31  | CY    | 58       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 449   | 281 | 87 | 79 | 2 |         |         |       |

- Molecule 32 is a protein called 50S RIBOSOMAL PROTEIN L31.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 32  | AZ    | 70       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 549   | 339 | 104 | 100 | 6 |         |         |       |
| 32  | CZ    | 70       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 549   | 339 | 104 | 100 | 6 |         |         |       |

- Molecule 33 is a RNA chain called 16S RIBOSOMAL RNA.

| Mol | Chain | Residues | Atoms |       |      |       |      | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|---------|-------|
| 33  | BA    | 1530     | Total | C     | N    | O     | P    | 0       | 0       | 0     |
|     |       |          | 32831 | 14642 | 6024 | 10635 | 1530 |         |         |       |
| 33  | DA    | 1530     | Total | C     | N    | O     | P    | 0       | 0       | 0     |
|     |       |          | 32831 | 14642 | 6024 | 10635 | 1530 |         |         |       |

- Molecule 34 is a protein called 30S RIBOSOMAL PROTEIN S2.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 34  | BB    | 219      | Total | C    | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1705  | 1081 | 306 | 311 | 7 |         |         |       |
| 34  | DB    | 219      | Total | C    | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1705  | 1081 | 306 | 311 | 7 |         |         |       |

- Molecule 35 is a protein called 30S RIBOSOMAL PROTEIN S3.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 35  | BC    | 207      | Total | C    | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1625  | 1028 | 306 | 288 | 3 |         |         |       |
| 35  | DC    | 207      | Total | C    | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1625  | 1028 | 306 | 288 | 3 |         |         |       |

- Molecule 36 is a protein called 30S RIBOSOMAL PROTEIN S4.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 36  | BD    | 205      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1643  | 1026 | 315 | 298 | 4 |         |         |       |
| 36  | DD    | 205      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1643  | 1026 | 315 | 298 | 4 |         |         |       |

- Molecule 37 is a protein called 30S RIBOSOMAL PROTEIN S5.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 37  | BE    | 151      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1106  | 687 | 212 | 201 | 6 |         |         |       |
| 37  | DE    | 151      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1106  | 687 | 212 | 201 | 6 |         |         |       |

- Molecule 38 is a protein called 30S RIBOSOMAL PROTEIN S6.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 38  | BF    | 101      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 818   | 515 | 149 | 148 | 6 |         |         |       |
| 38  | DF    | 101      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 818   | 515 | 149 | 148 | 6 |         |         |       |

- Molecule 39 is a protein called 30S RIBOSOMAL PROTEIN S7.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 39  | BG    | 151      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1175  | 730 | 227 | 214 | 4 |         |         |       |
| 39  | DG    | 153      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 1197  | 745 | 231 | 217 | 4 |         |         |       |

- Molecule 40 is a protein called 30S RIBOSOMAL PROTEIN S8.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 40  | BH    | 129      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 979   | 616 | 173 | 184 | 6 |         |         |       |
| 40  | DH    | 129      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 979   | 616 | 173 | 184 | 6 |         |         |       |

- Molecule 41 is a protein called 30S RIBOSOMAL PROTEIN S9.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 41  | BI    | 127      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1022  | 634 | 206 | 179 | 3 |         |         |       |
| 41  | DI    | 127      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1022  | 634 | 206 | 179 | 3 |         |         |       |

- Molecule 42 is a protein called 30S RIBOSOMAL PROTEIN S10.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 42  | BJ    | 99       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 787   | 493 | 151 | 142 | 1 |         |         |       |
| 42  | DJ    | 99       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 787   | 493 | 151 | 142 | 1 |         |         |       |

- Molecule 43 is a protein called 30S RIBOSOMAL PROTEIN S11.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 43  | BK    | 117      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 877   | 540 | 174 | 160 | 3 |         |         |       |
| 43  | DK    | 117      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 877   | 540 | 174 | 160 | 3 |         |         |       |

- Molecule 44 is a protein called 30S RIBOSOMAL PROTEIN S12.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 44  | BL    | 123      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 955   | 590 | 196 | 165 | 4 |         |         |       |
| 44  | DL    | 123      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 955   | 590 | 196 | 165 | 4 |         |         |       |

- Molecule 45 is a protein called 30S RIBOSOMAL PROTEIN S13.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 45  | BM    | 115      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 884   | 546 | 179 | 156 | 3 |         |         |       |
| 45  | DM    | 114      | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 877   | 541 | 178 | 155 | 3 |         |         |       |

- Molecule 46 is a protein called 30S RIBOSOMAL PROTEIN S14.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 46  | BN    | 96       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 774   | 483 | 160 | 128 | 3 |         |         |       |
| 46  | DN    | 96       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 774   | 483 | 160 | 128 | 3 |         |         |       |

- Molecule 47 is a protein called 30S RIBOSOMAL PROTEIN S15.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 47  | BO    | 88       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 716   | 440 | 146 | 129 | 1 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 47  | DO    | 88       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 716   | 440 | 146 | 129 | 1 |         |         |       |

- Molecule 48 is a protein called 30S RIBOSOMAL PROTEIN S16.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 48  | BP    | 82       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 649   | 406 | 128 | 114 | 1 |         |         |       |
| 48  | DP    | 81       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 639   | 400 | 127 | 111 | 1 |         |         |       |

- Molecule 49 is a protein called 30S RIBOSOMAL PROTEIN S17.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 49  | BQ    | 81       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 649   | 411 | 122 | 113 | 3 |         |         |       |
| 49  | DQ    | 81       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 417 | 122 | 115 | 3 |         |         |       |

- Molecule 50 is a protein called 30S RIBOSOMAL PROTEIN S18.

| Mol | Chain | Residues | Atoms |     |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 50  | BR    | 56       | Total | C   | N  | O  | 0       | 0       | 1     |
|     |       |          | 456   | 288 | 87 | 81 |         |         |       |
| 50  | DR    | 56       | Total | C   | N  | O  | 0       | 0       | 1     |
|     |       |          | 456   | 288 | 87 | 81 |         |         |       |

- Molecule 51 is a protein called 30S RIBOSOMAL PROTEIN S19.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 51  | BS    | 80       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 638   | 408 | 121 | 107 | 2 |         |         |       |
| 51  | DS    | 81       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 645   | 413 | 122 | 108 | 2 |         |         |       |

- Molecule 52 is a protein called 30S RIBOSOMAL PROTEIN S20.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 52  | BT    | 85       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 665   | 411 | 137 | 114 | 3 |         |         |       |
| 52  | DT    | 85       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 665   | 411 | 137 | 114 | 3 |         |         |       |

- Molecule 53 is a protein called 30S RIBOSOMAL PROTEIN S21.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 53  | BU    | 52       | Total | C   | N  | O  | S | 0       | 0       | 1     |
|     |       |          | 426   | 265 | 87 | 73 | 1 |         |         |       |
| 53  | DU    | 52       | Total | C   | N  | O  | S | 0       | 0       | 1     |
|     |       |          | 426   | 265 | 87 | 73 | 1 |         |         |       |

- Molecule 54 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms |     | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 54  | AB    | 109      | Total | Mg  | 0       | 0       |
|     |       |          | 109   | 109 |         |         |
| 54  | AE    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 54  | BA    | 58       | Total | Mg  | 0       | 0       |
|     |       |          | 58    | 58  |         |         |
| 54  | BN    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 54  | BT    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 54  | CB    | 109      | Total | Mg  | 0       | 0       |
|     |       |          | 109   | 109 |         |         |
| 54  | CC    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 54  | CL    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 54  | DA    | 61       | Total | Mg  | 0       | 0       |
|     |       |          | 61    | 61  |         |         |
| 54  | DN    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |

- Molecule 55 is water.

| Mol | Chain | Residues | Atoms |     | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 55  | A2    | 2        | Total | O   | 0       | 0       |
|     |       |          | 2     | 2   |         |         |
| 55  | AB    | 489      | Total | O   | 0       | 0       |
|     |       |          | 489   | 489 |         |         |
| 55  | AC    | 3        | Total | O   | 0       | 0       |
|     |       |          | 3     | 3   |         |         |
| 55  | AD    | 1        | Total | O   | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 55  | AE    | 3        | Total | O   | 0       | 0       |
|     |       |          | 3     | 3   |         |         |

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| Mol | Chain | Residues | Atoms              | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 55  | AJ    | 2        | Total O<br>2 2     | 0       | 0       |
| 55  | AL    | 3        | Total O<br>3 3     | 0       | 0       |
| 55  | BA    | 284      | Total O<br>284 284 | 0       | 0       |
| 55  | BE    | 3        | Total O<br>3 3     | 0       | 0       |
| 55  | BI    | 2        | Total O<br>2 2     | 0       | 0       |
| 55  | BK    | 1        | Total O<br>1 1     | 0       | 0       |
| 55  | BL    | 2        | Total O<br>2 2     | 0       | 0       |
| 55  | BN    | 3        | Total O<br>3 3     | 0       | 0       |
| 55  | BP    | 1        | Total O<br>1 1     | 0       | 0       |
| 55  | BT    | 2        | Total O<br>2 2     | 0       | 0       |
| 55  | C0    | 1        | Total O<br>1 1     | 0       | 0       |
| 55  | C2    | 2        | Total O<br>2 2     | 0       | 0       |
| 55  | CB    | 485      | Total O<br>485 485 | 0       | 0       |
| 55  | CC    | 3        | Total O<br>3 3     | 0       | 0       |
| 55  | CD    | 1        | Total O<br>1 1     | 0       | 0       |
| 55  | CE    | 1        | Total O<br>1 1     | 0       | 0       |
| 55  | CJ    | 2        | Total O<br>2 2     | 0       | 0       |
| 55  | CK    | 1        | Total O<br>1 1     | 0       | 0       |
| 55  | CL    | 5        | Total O<br>5 5     | 0       | 0       |
| 55  | CN    | 3        | Total O<br>3 3     | 0       | 0       |
| 55  | CP    | 1        | Total O<br>1 1     | 0       | 0       |

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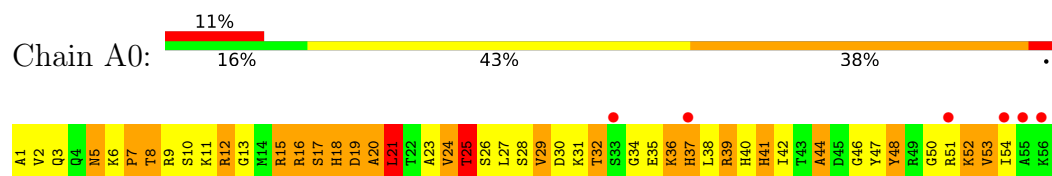
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| Mol | Chain | Residues | Atoms        |          | ZeroOcc | AltConf |
|-----|-------|----------|--------------|----------|---------|---------|
| 55  | CQ    | 1        | Total<br>1   | O<br>1   | 0       | 0       |
| 55  | CT    | 2        | Total<br>2   | O<br>2   | 0       | 0       |
| 55  | CU    | 1        | Total<br>1   | O<br>1   | 0       | 0       |
| 55  | DA    | 293      | Total<br>293 | O<br>293 | 0       | 0       |
| 55  | DD    | 1        | Total<br>1   | O<br>1   | 0       | 0       |
| 55  | DE    | 2        | Total<br>2   | O<br>2   | 0       | 0       |
| 55  | DG    | 1        | Total<br>1   | O<br>1   | 0       | 0       |
| 55  | DL    | 4        | Total<br>4   | O<br>4   | 0       | 0       |
| 55  | DN    | 2        | Total<br>2   | O<br>2   | 0       | 0       |
| 55  | DP    | 1        | Total<br>1   | O<br>1   | 0       | 0       |
| 55  | DT    | 3        | Total<br>3   | O<br>3   | 0       | 0       |

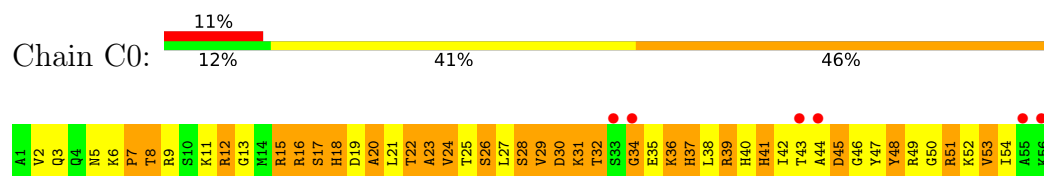
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

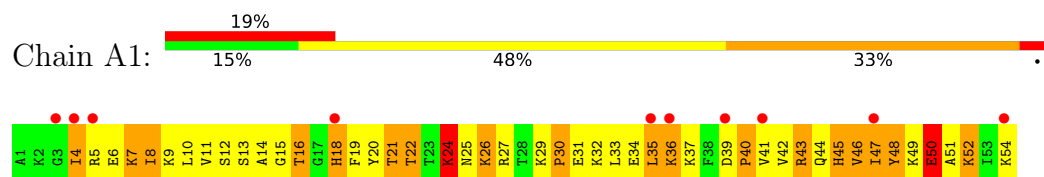
- Molecule 1: 50S RIBOSOMAL PROTEIN L32



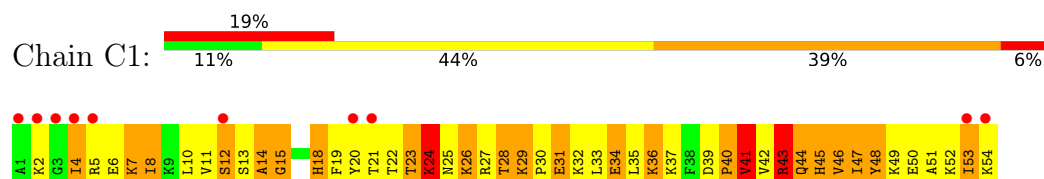
- Molecule 1: 50S RIBOSOMAL PROTEIN L32



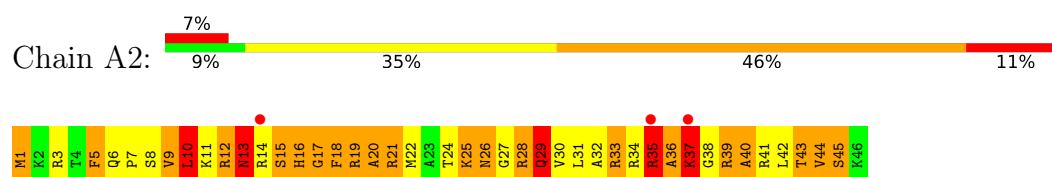
- Molecule 2: 50S RIBOSOMAL PROTEIN L33



- Molecule 2: 50S RIBOSOMAL PROTEIN L33



- Molecule 3: 50S RIBOSOMAL PROTEIN L34



- Molecule 3: 50S RIBOSOMAL PROTEIN L34





• Molecule 4: 50S RIBOSOMAL PROTEIN L35



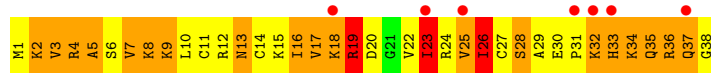
• Molecule 4: 50S RIBOSOMAL PROTEIN L35



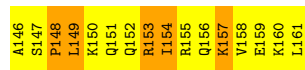
• Molecule 5: 50S RIBOSOMAL PROTEIN L36



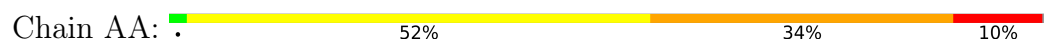
• Molecule 5: 50S RIBOSOMAL PROTEIN L36

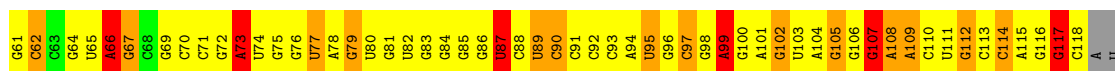


• Molecule 6: C-TERM HELIX PDF

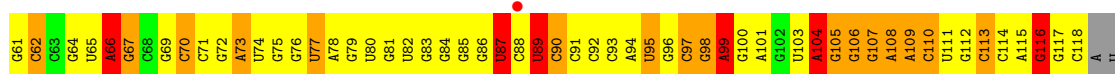


• Molecule 7: 5S RIBOSOMAL RNA

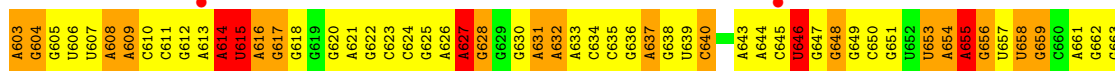
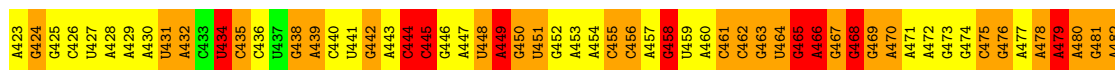
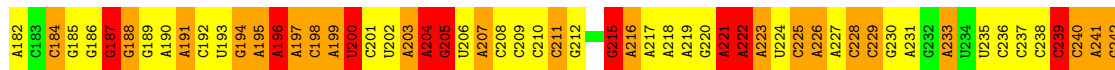
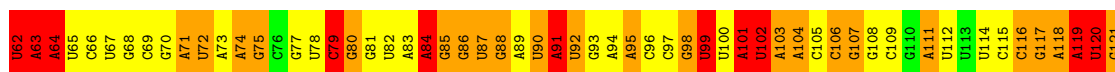
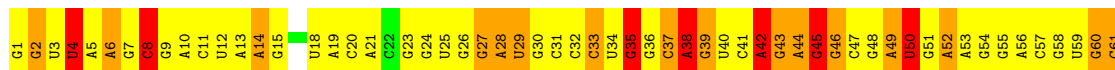




• Molecule 7: 5S RIBOSOMAL RNA



• Molecule 8: 23S RIBOSOMAL RNA



|       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |
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| U1578 | U1518 | C1451 | U1391 | G1331 | C1271 | C1212 | U1149 | G1087 | G1026 | G966  | U906 | U846 | G766 | A666 |
| U1579 | G1519 | C1452 | A1392 | G1332 | A1272 | G1213 | U1150 | A1088 | A1027 | G967  | G907 | U847 | G767 | U667 |
| A1580 | U1520 | A1453 | A1393 | G1333 | C1273 | A1213 | C1151 | A1089 | C988  | C968  | C908 | C848 | A788 | A668 |
| G1581 | G1521 | C1454 | U1394 | G1334 | A1274 | A1214 | A1152 | A1090 | A1029 | G969  | A909 | A849 | A789 | G669 |
| C1582 | A1522 | G1455 | A1385 | C1335 | A1275 | G1215 | C1153 | G1091 | C1030 | U970  | U910 | U850 | U790 | A670 |
| A1583 | U1523 | G1456 | U1396 | C1336 | A1276 | G1216 | C1154 | C1092 | G1031 | G971  | A911 | C851 | G791 | C671 |
| U1584 | G1524 | U1457 | U1397 | G1337 | C1277 | U1217 | U1154 | G1093 | A1032 | A972  | C912 | U852 | A792 | C672 |
| C1585 | A1525 | U1458 | C1398 | G1338 | C1278 | U1218 | A1155 | G1094 | U1033 | A973  | U913 | C853 | A793 | C673 |
| A1586 | A1526 | G1459 | C1399 | G1339 | C1279 | U1219 | A1156 | A1095 | G1034 | G974  | U914 | C854 | A794 | G674 |
| G1587 | G1527 | U1460 | U1400 | U1340 | G1280 | G1220 | C1157 | A1096 | U1035 | A975  | C915 | C855 | C795 | A675 |
| U1588 | G1401 | C1461 | G1401 | G1341 | A1281 | C1221 | C1158 | U1097 | U1036 | G976  | G916 | C856 | C796 | A676 |
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| A1590 | G1530 | G1463 | A1403 | G1343 | C1283 | G1223 | G1160 | G1099 | U1038 | G978  | A918 | C858 | G798 | C678 |
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| A1603 | G1543 | G1478 | G1416 | G1356 | G1296 | U1236 | U1174 | G1112 | G1051 | C991  | U931 | U871 | U811 | C691 |
| C1604 | G1479 | C1479 | G1417 | G1357 | C1297 | A1237 | U1175 | U1113 | C1052 | C992  | U932 | U872 | C812 | C692 |
| A1605 | A1545 | C1480 | G1418 | G1358 | C1298 | G1238 | U1176 | C1114 | C1053 | C993  | A933 | C873 | U813 | A693 |
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| A1609 | U1549 | U1484 | G1422 | G1362 | A1302 | U1242 | U1180 | C1118 | U1058 | G997  | C937 | A877 | G757 | G697 |
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| C1611 | A1551 | U1486 | G1424 | G1364 | A1304 | A1244 | G1182 | G1120 | G1060 | U999  | G939 | G    | A819 | A699 |
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| A1615 | G1555 | A1490 | C1428 | G1368 | A1308 | U1248 | G1186 | G1124 | U1064 | C     | A943 | G    | C823 | U703 |
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| G1633 | G1573 | U1510 | C1446 | A1385 | U1325 | A1265 | U1203 | U1141 | U1081 | A1020 | A960 | A900 | C840 | U720 |
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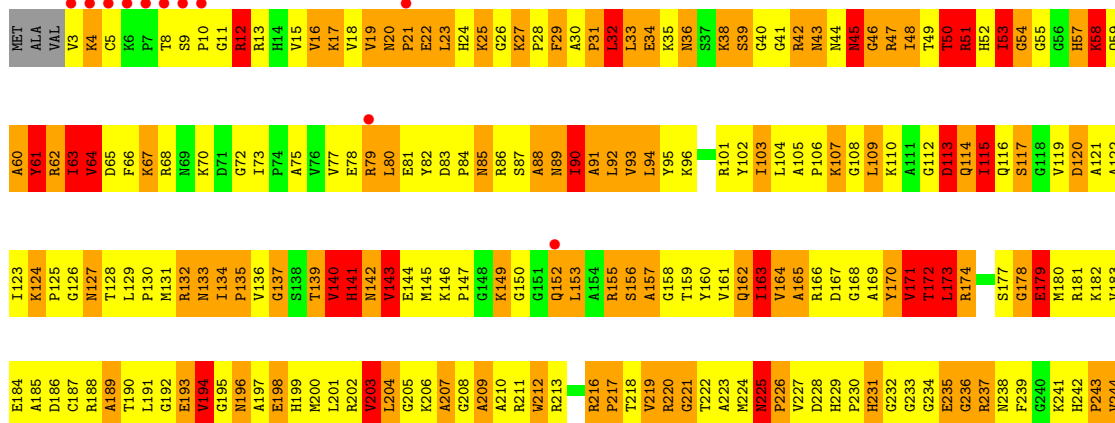






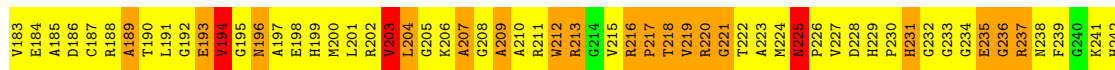
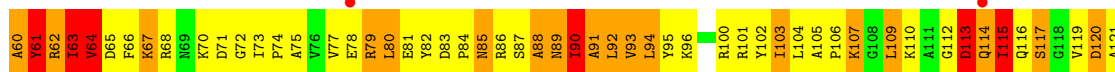
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| U1408 | C1348 | G1288 | G1228 | C1167 | G1106 | C1045 | C985  | A925 | C865 | G805 | A745 | A685 | G625 | C565 | A504 |
| U1409 | C1349 | C1289 | C1229 | G1168 | G1107 | A1046 | C986  | G926 | A866 | C806 | U746 | U686 | A626 | U566 | A505 |
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| A1419 | A1359 | G1299 | G1239 | C1178 | C1117 | G1056 | A996  | A936 | C876 | C816 | A756 | G696 | G636 | U576 | A515 |
| A1420 | G1360 | G1300 | U1240 | G1179 | C1118 | A1057 | G997  | C937 | A877 | C817 | G757 | G697 | A637 | G577 | C516 |
| G1421 | G1361 | A1301 | A1241 | U1180 | U1119 | U1058 | C998  | G938 | A878 | C818 | C758 | C698 | G638 | G578 | C517 |
| G1422 | C1362 | A1302 | U1242 | U1181 | G1120 | G1059 | U999  | G939 | G    | A819 | G759 | A699 | U639 | G579 | G518 |
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| G1428 | G1368 | A1308 | G1248 | G1187 | A1126 | U1065 | C1005 | A945 | C    | A825 | C765 | A705 | C645 | G585 | U525 |
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| G1435 | U1375 | C1315 | U1255 | A1194 | A1133 | C1072 | U1012 | G952 | A    | C832 | C772 | G712 | U652 | A592 | A532 |
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| C1437 | G1377 | G1317 | C1257 | C1196 | C1135 | G1074 | A1014 | G954 | U    | G834 | G774 | U714 | A654 | U594 | U534 |
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| U1440 | G1380 | A1320 | A1260 | U1199 | G1138 | A1077 | G1017 | C957 | C    | C837 | G777 | C717 | U657 | G597 | G537 |
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| G1445 | A1385 | U1325 | A1265 | A1204 | A1143 | A1084 | G1022 | G962 | C902 | U842 | A782 | A722 | G662 | A602 | C542 |
| C1446 | C1386 | U1326 | G1266 | A1205 | A1144 | A1084 | U1023 | U963 | C903 | G843 | G783 | G723 | G663 | A603 | G543 |
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| G1449 | G1389 | U1329 | A1269 |       |       | G1087 | G1026 | G966 | U906 | U846 | G786 | G726 | A666 | U606 | U546 |

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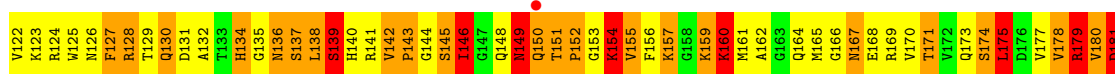
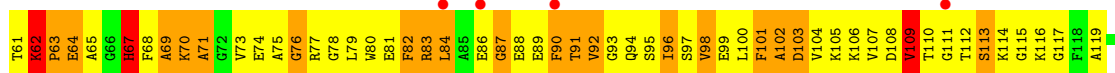




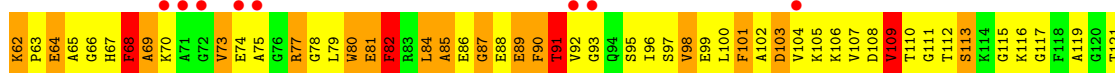
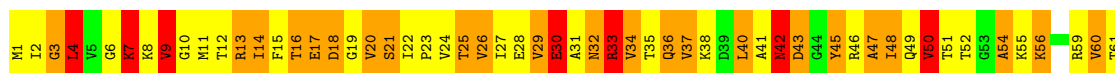
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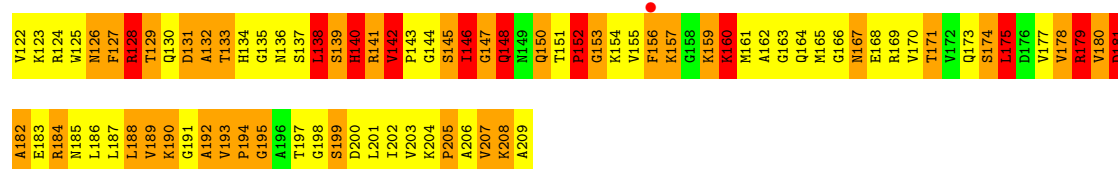


• Molecule 10: 50S RIBOSOMAL PROTEIN L3

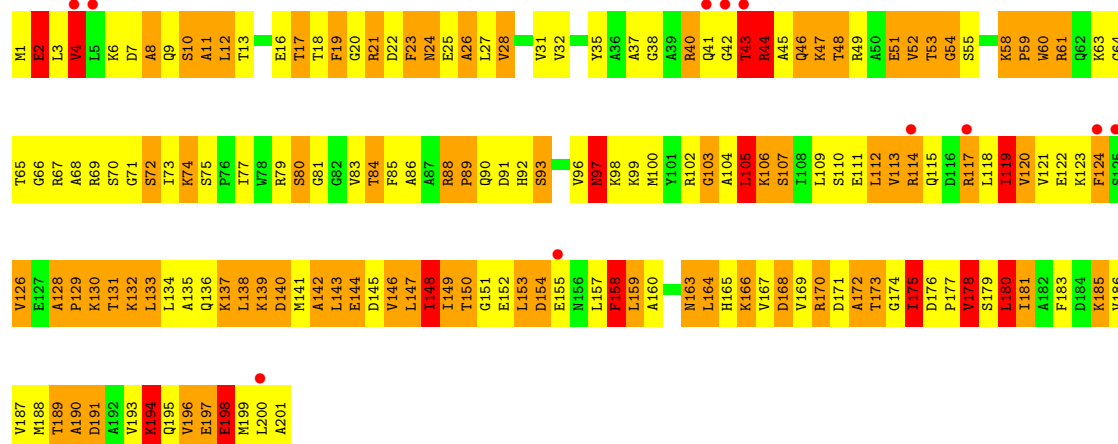
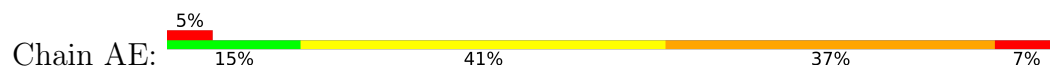


• Molecule 10: 50S RIBOSOMAL PROTEIN L3

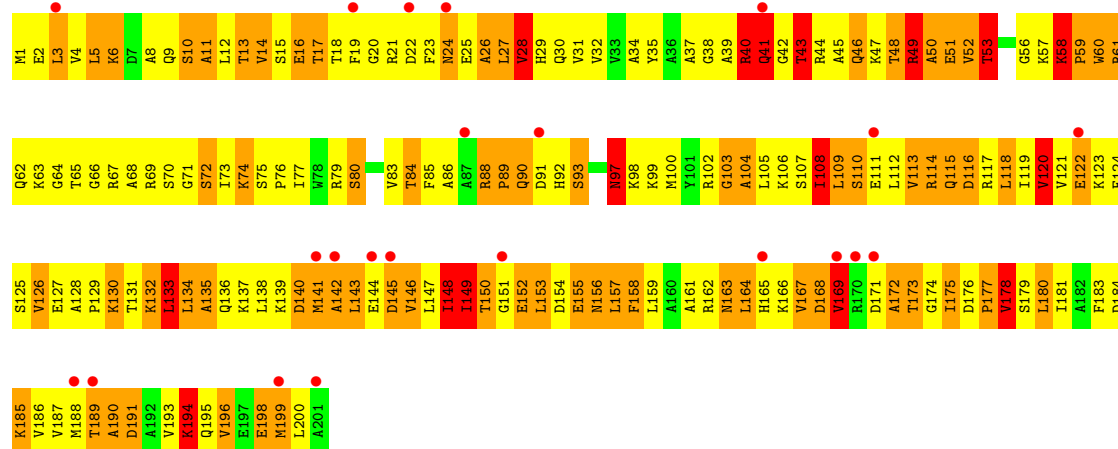




• Molecule 11: 50S RIBOSOMAL PROTEIN L4

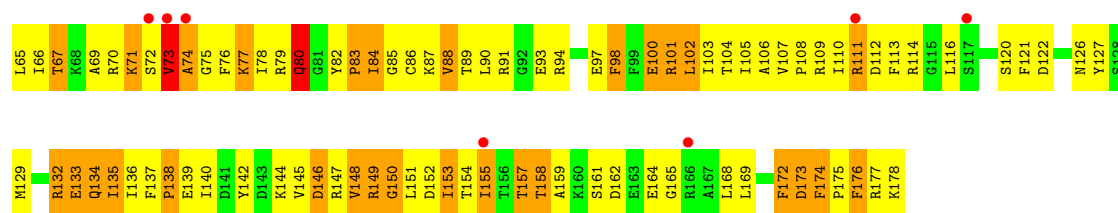


• Molecule 11: 50S RIBOSOMAL PROTEIN L4

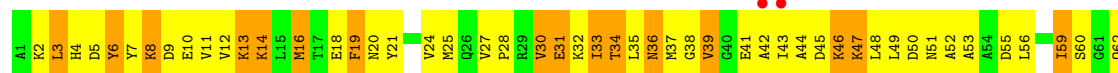


• Molecule 12: 50S RIBOSOMAL PROTEIN L5

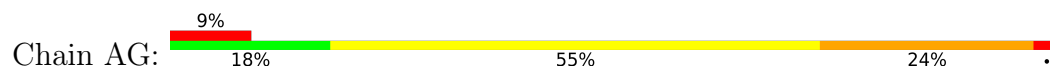




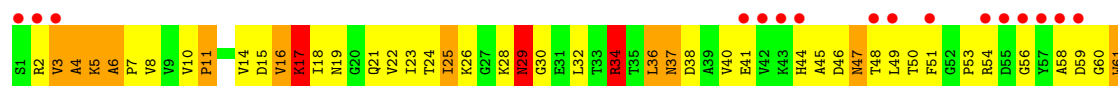
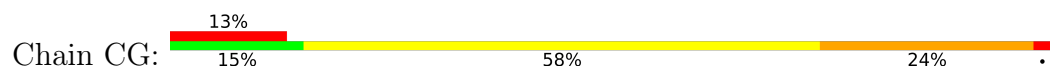
• Molecule 12: 50S RIBOSOMAL PROTEIN L5



• Molecule 13: 50S RIBOSOMAL PROTEIN L6

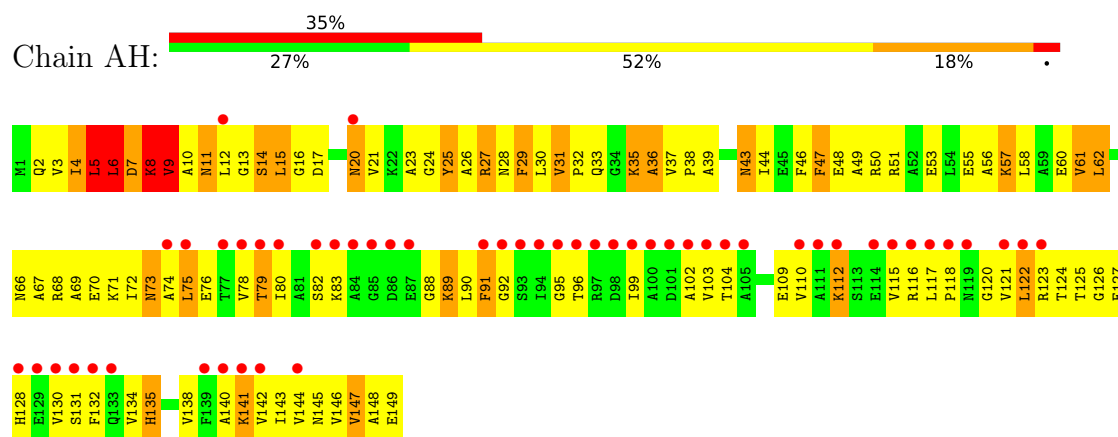


• Molecule 13: 50S RIBOSOMAL PROTEIN L6

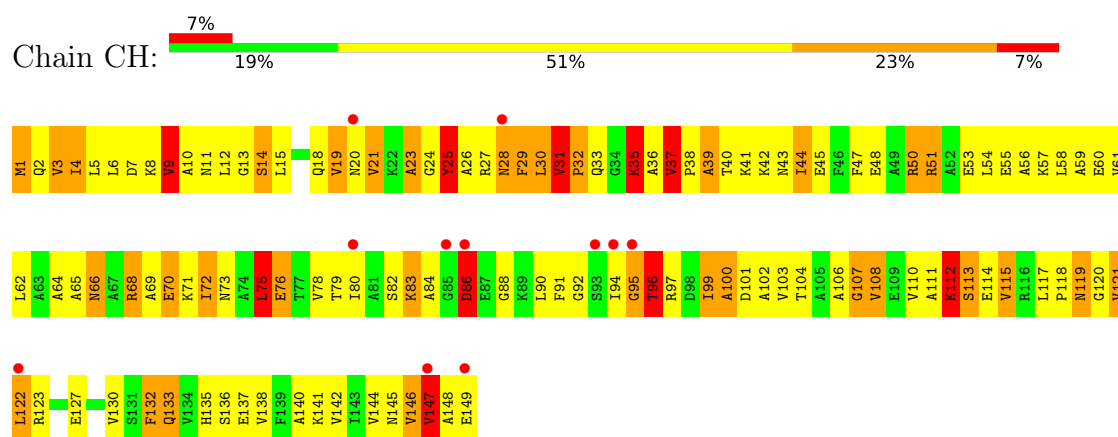


• Molecule 14: 50S RIBOSOMAL PROTEIN L9

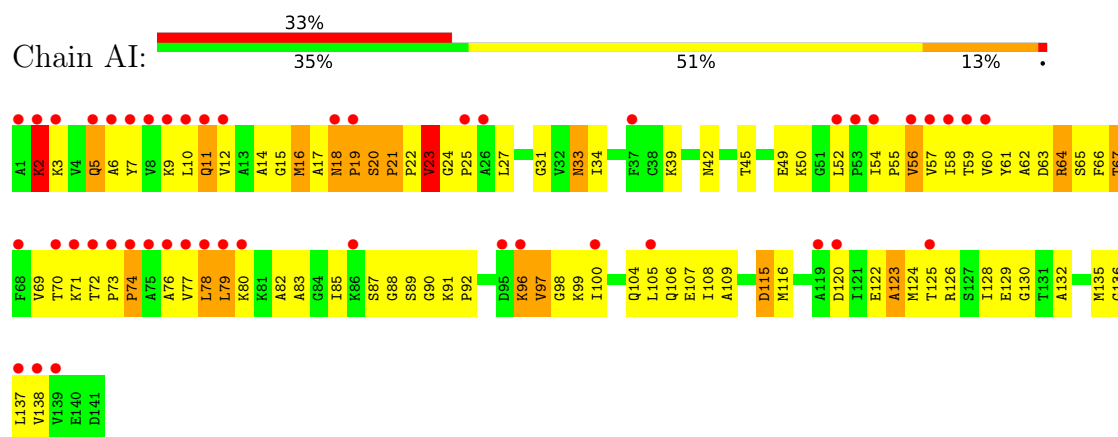




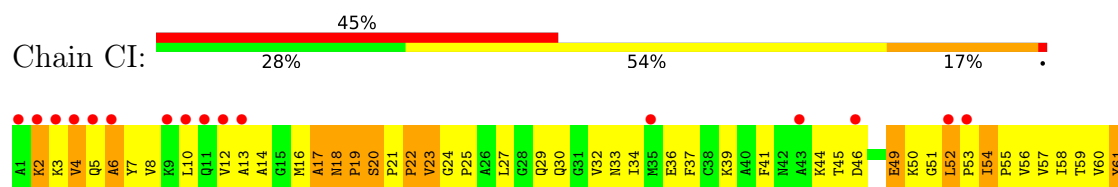
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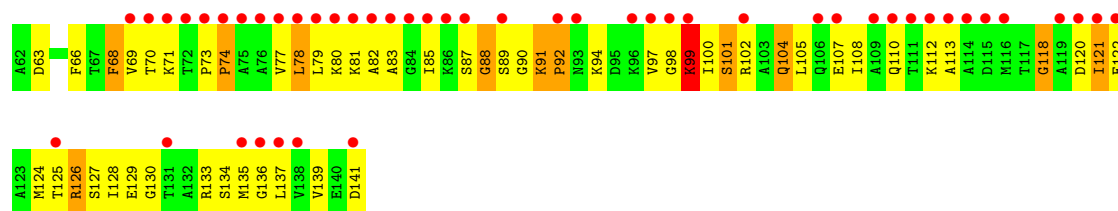


• Molecule 15: 50S RIBOSOMAL PROTEIN L11

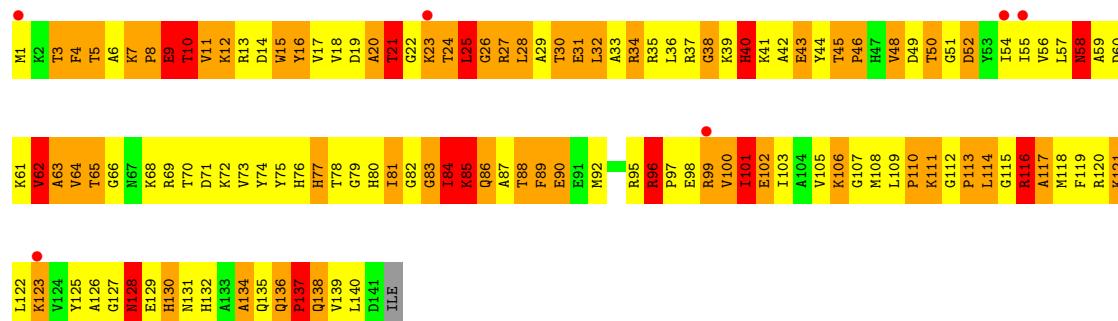


• Molecule 15: 50S RIBOSOMAL PROTEIN L11

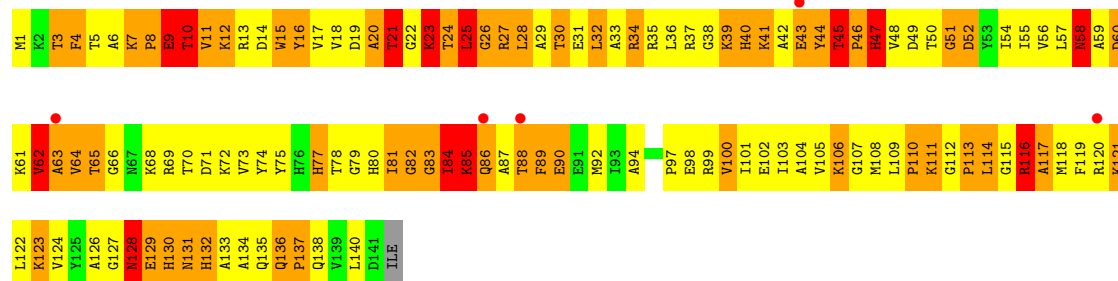




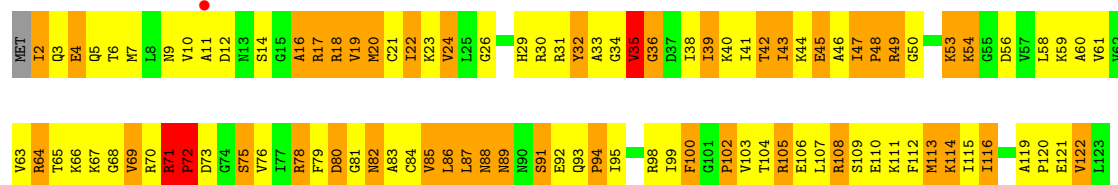
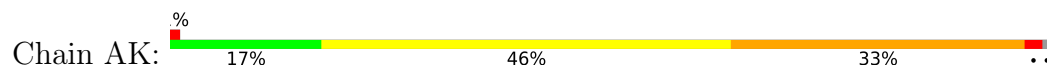
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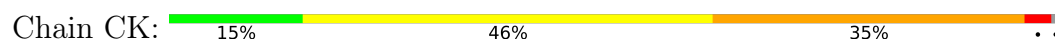
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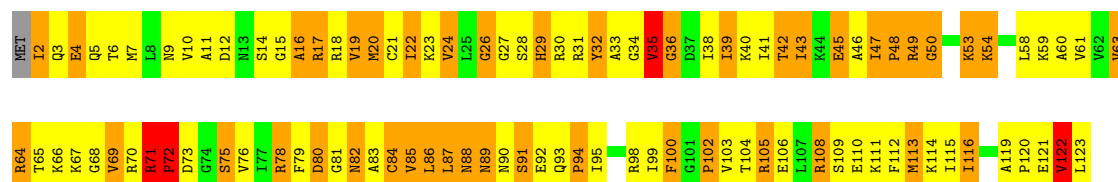


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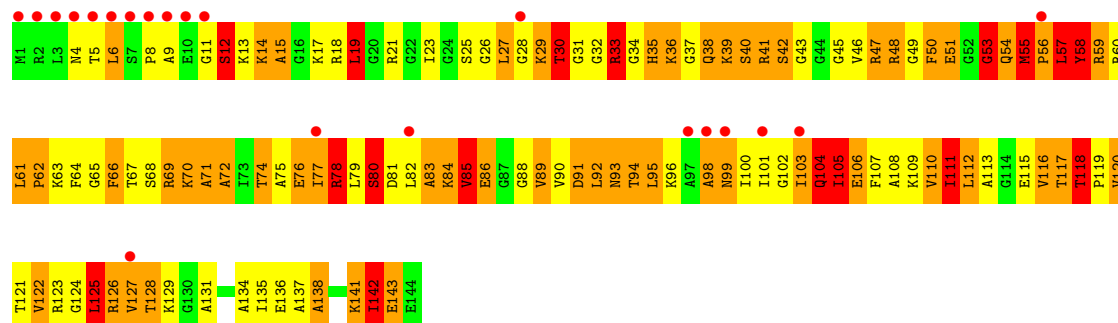


• Molecule 17: 50S RIBOSOMAL PROTEIN L14

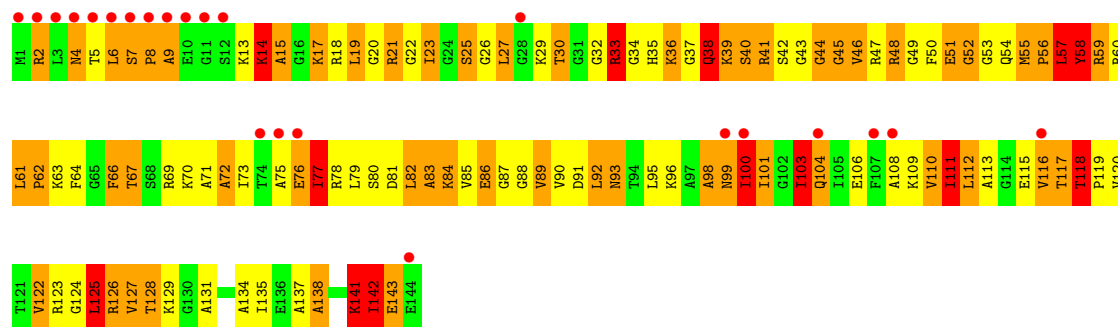
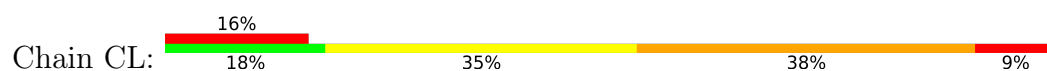




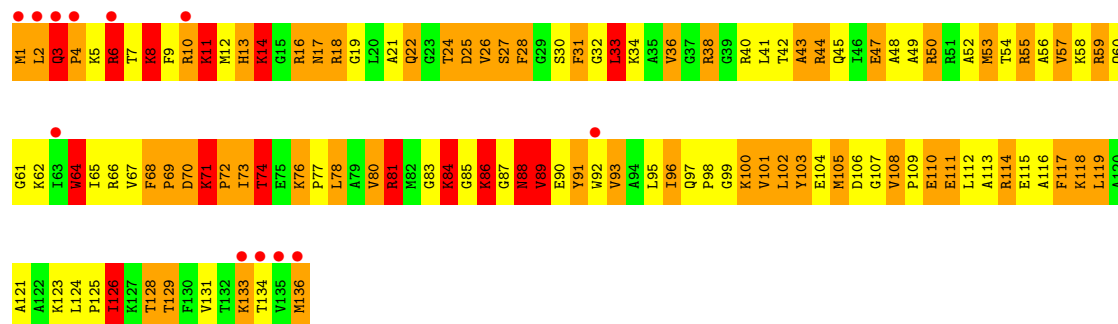
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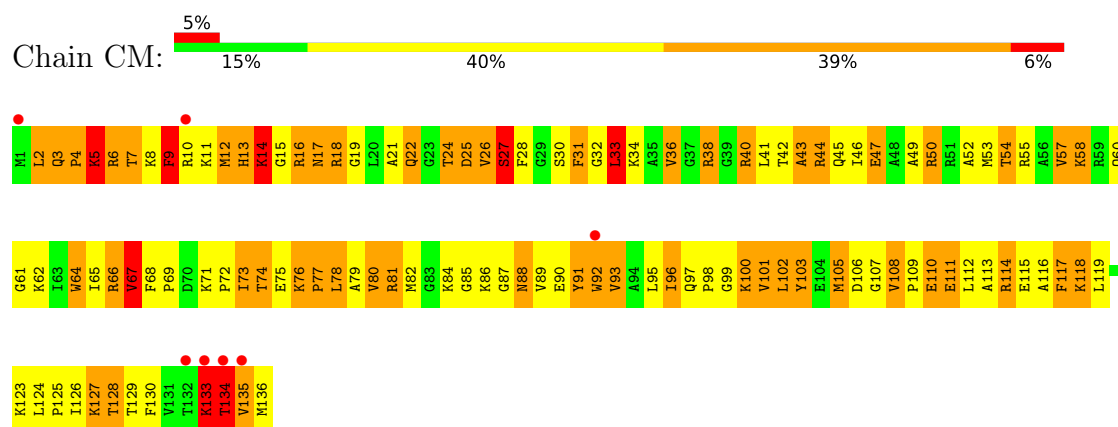
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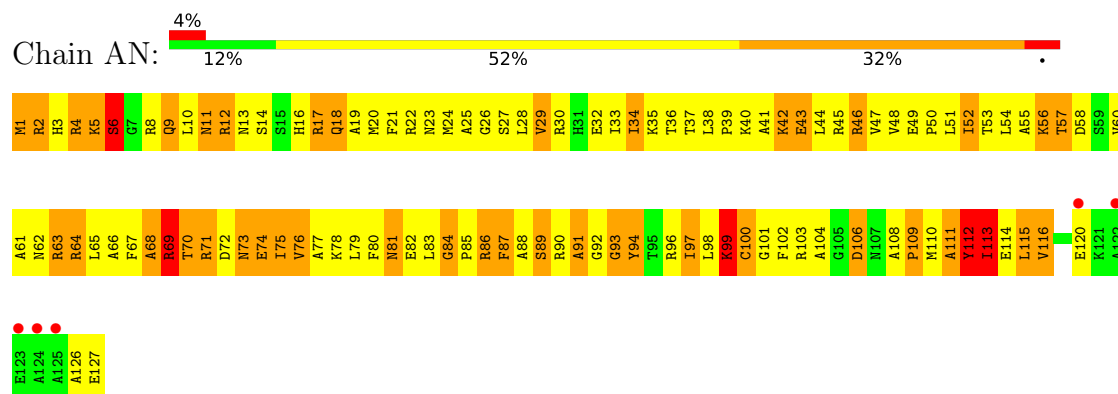
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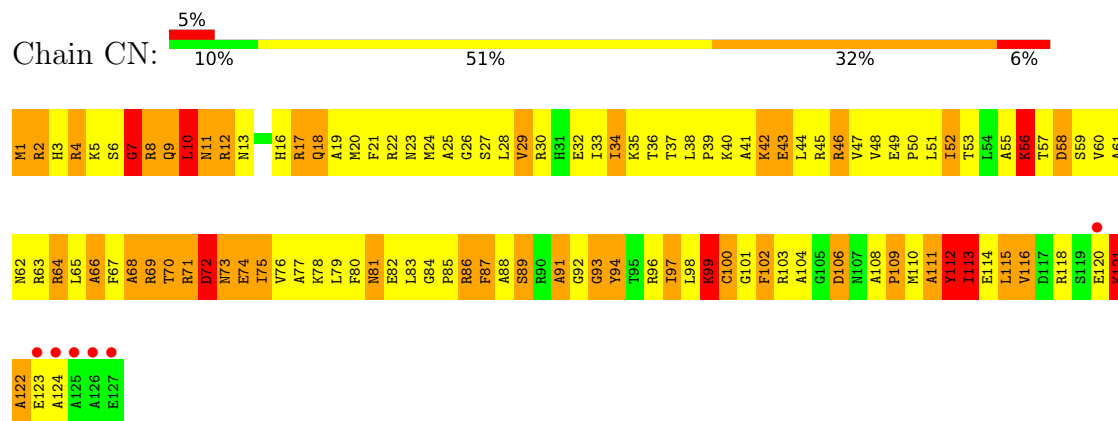
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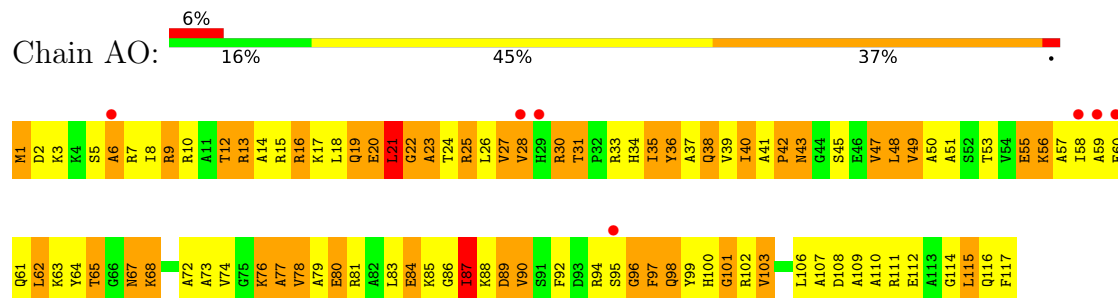
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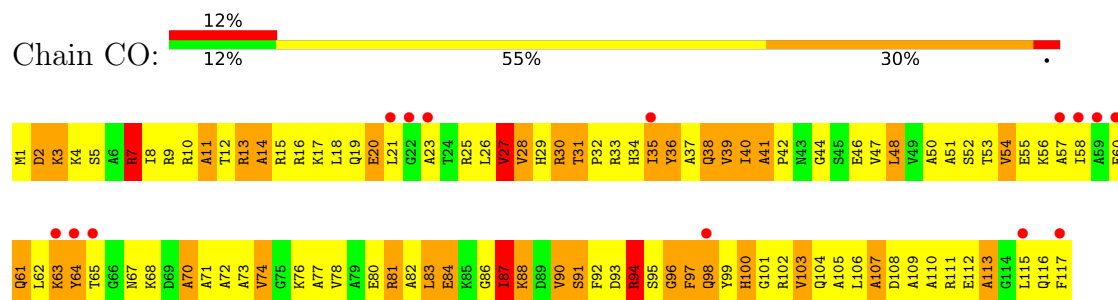
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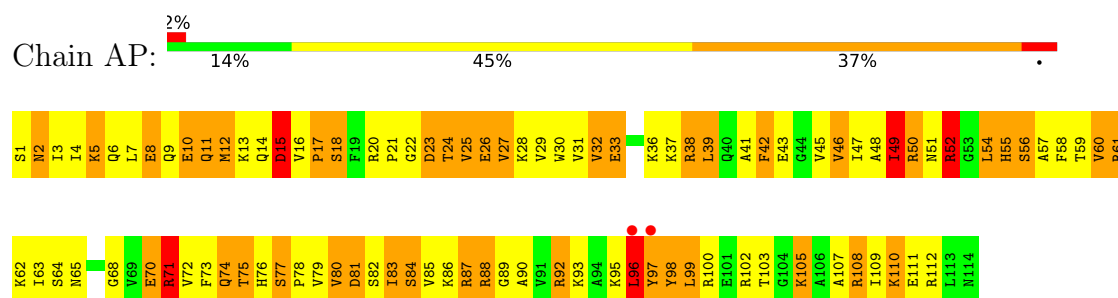
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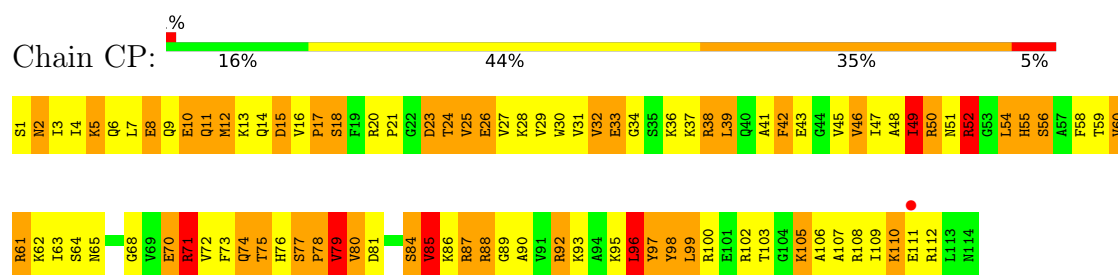
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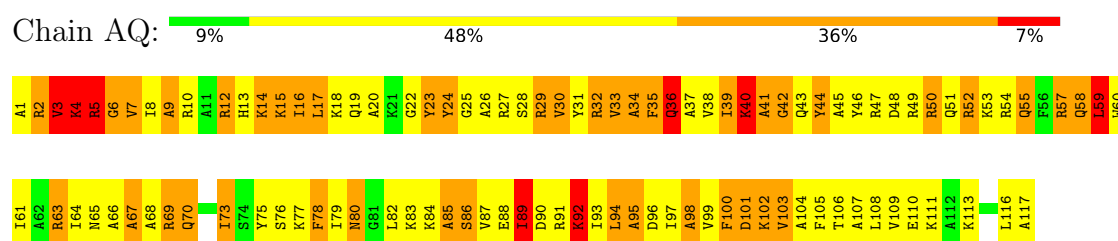
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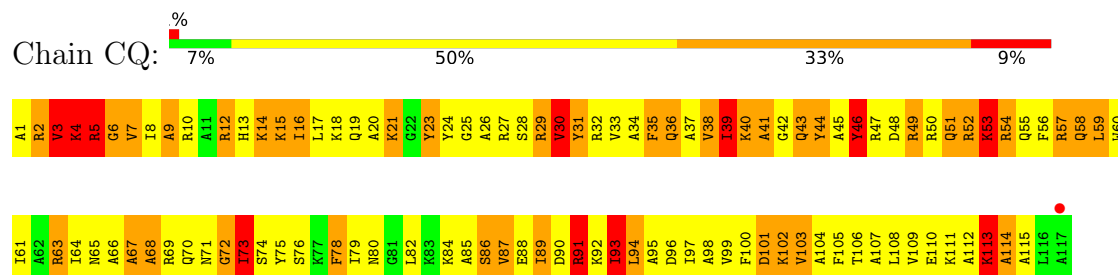
- Molecule 22: 50S RIBOSOMAL PROTEIN L19



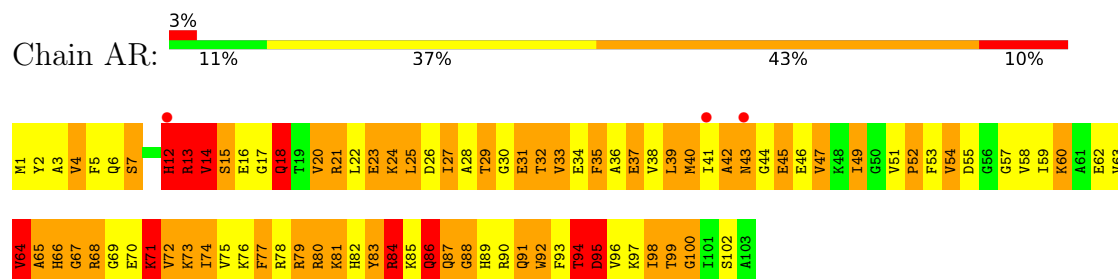
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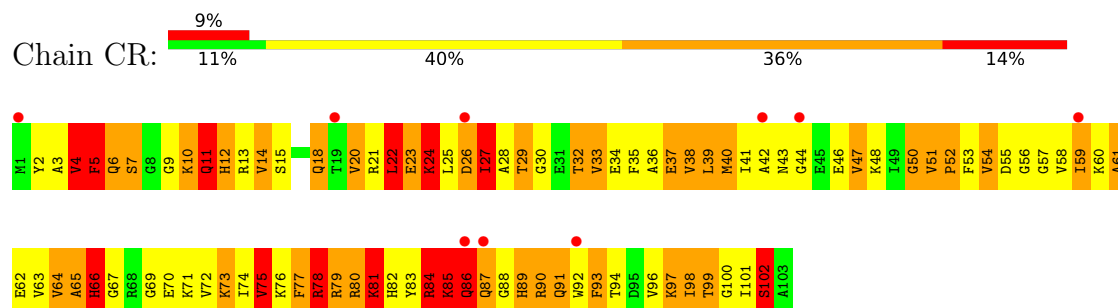
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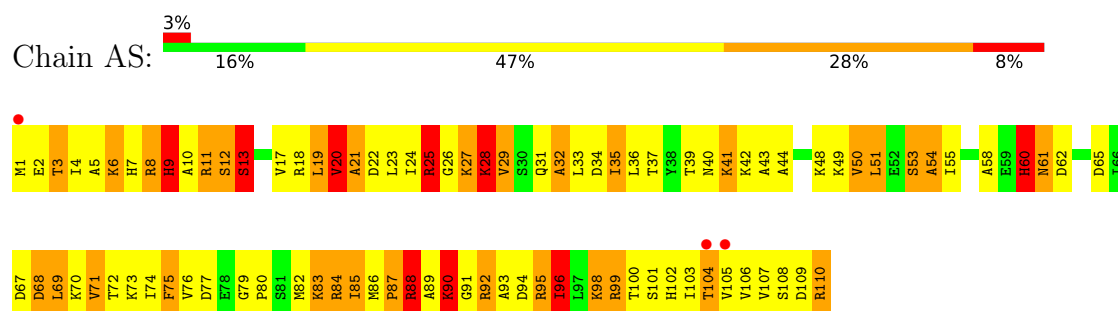
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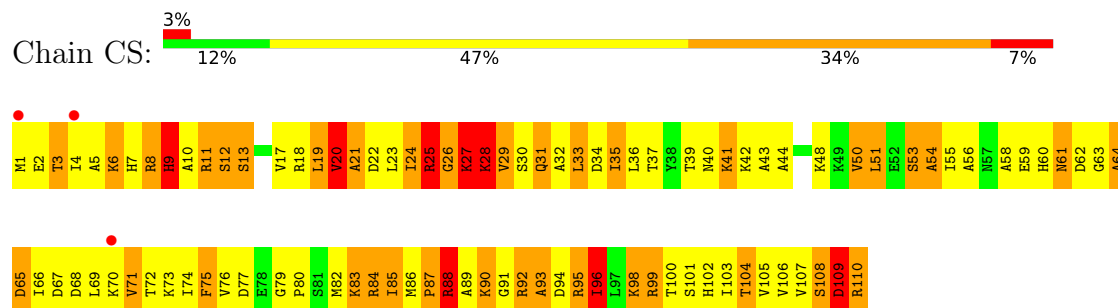
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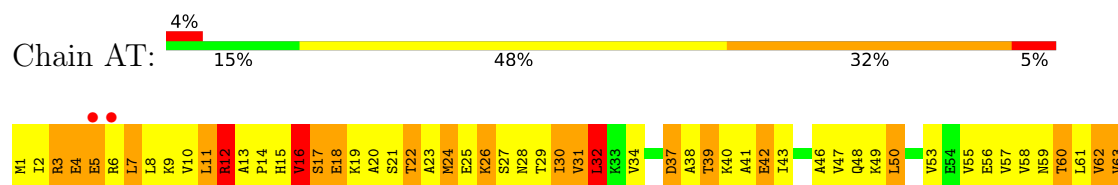
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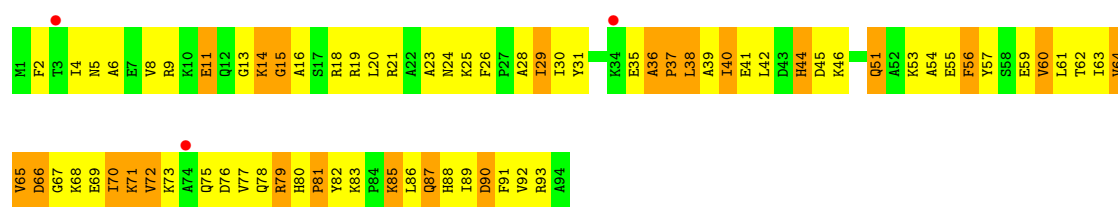
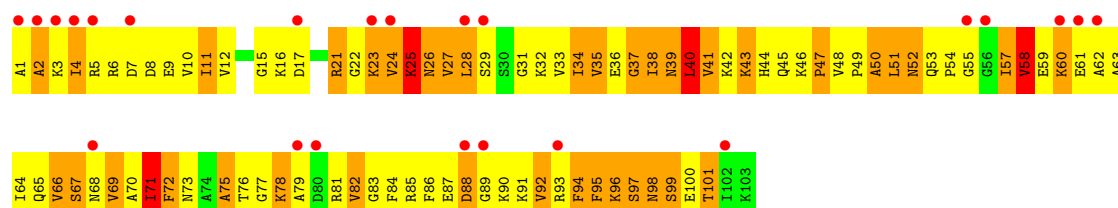
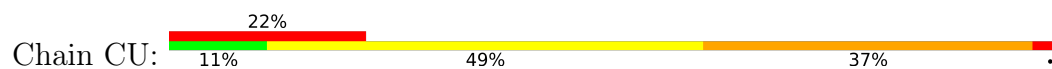
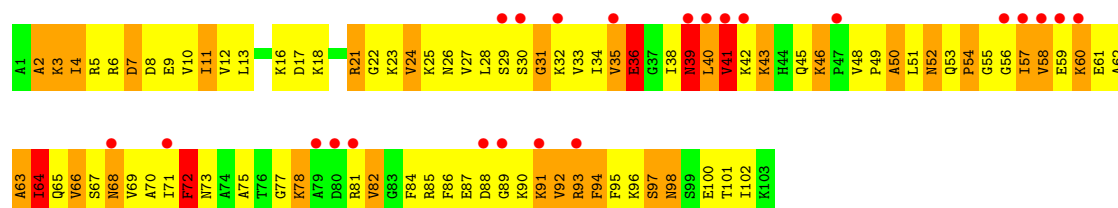
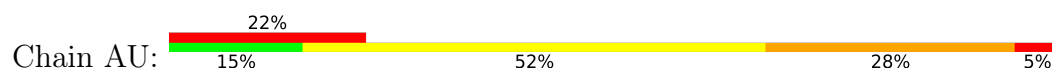
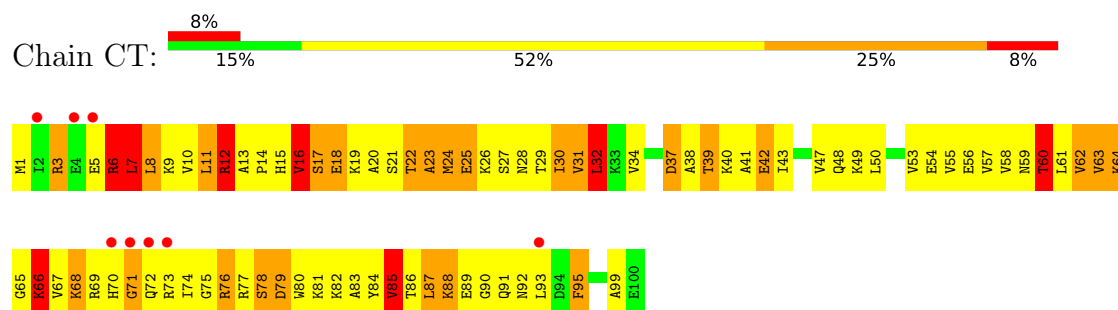
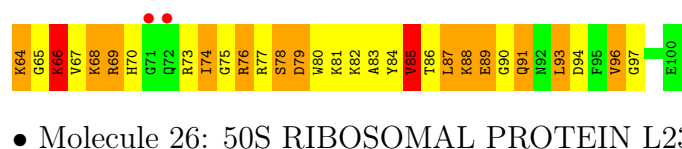


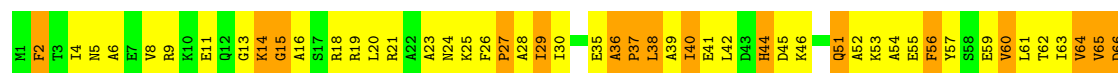
• Molecule 25: 50S RIBOSOMAL PROTEIN L22



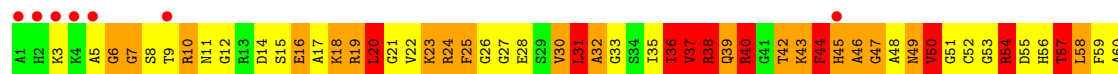
• Molecule 26: 50S RIBOSOMAL PROTEIN L23



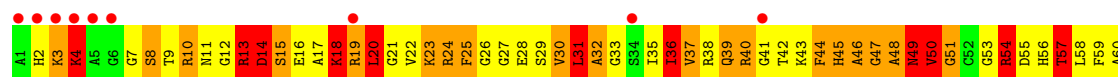




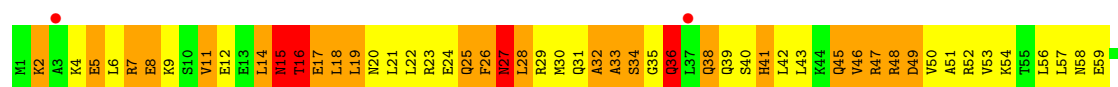
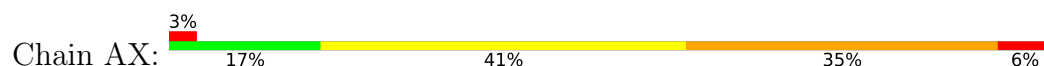
• Molecule 29: 50S RIBOSOMAL PROTEIN L27



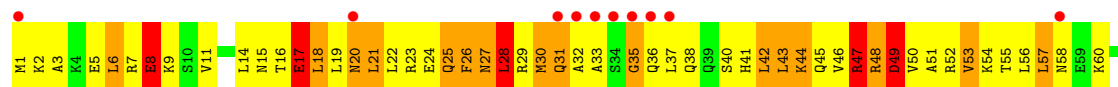
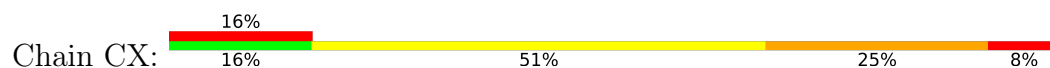
• Molecule 29: 50S RIBOSOMAL PROTEIN L27



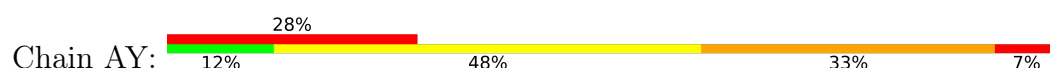
• Molecule 30: 50S RIBOSOMAL PROTEIN L29



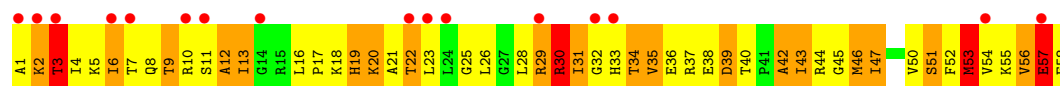
• Molecule 30: 50S RIBOSOMAL PROTEIN L29



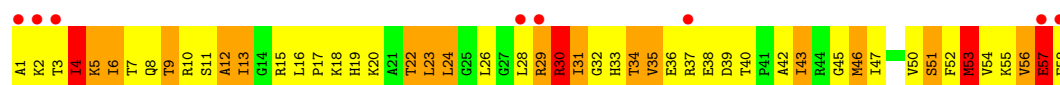
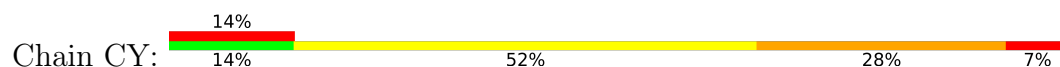
• Molecule 31: 50S RIBOSOMAL PROTEIN L30



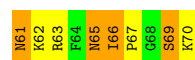
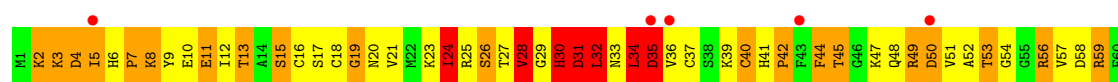
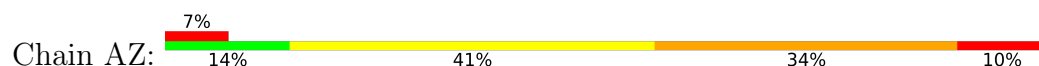




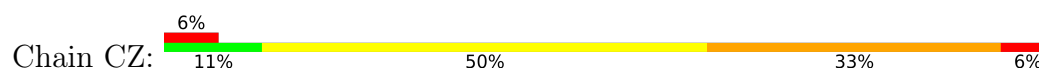
• Molecule 31: 50S RIBOSOMAL PROTEIN L30



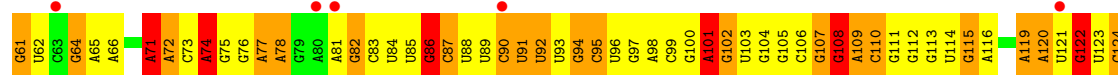
• Molecule 32: 50S RIBOSOMAL PROTEIN L31



• Molecule 32: 50S RIBOSOMAL PROTEIN L31

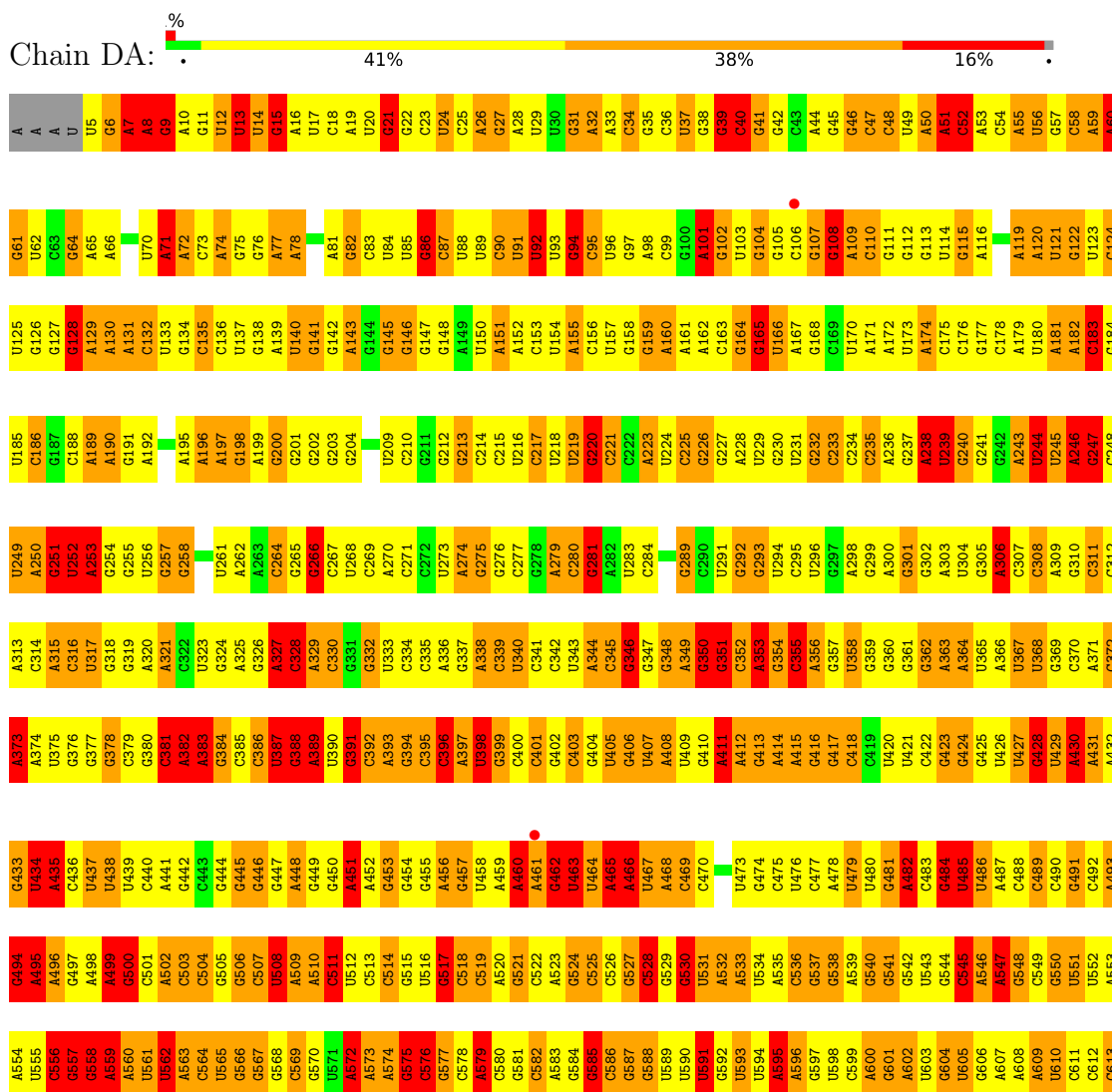


• Molecule 33: 16S RIBOSOMAL RNA



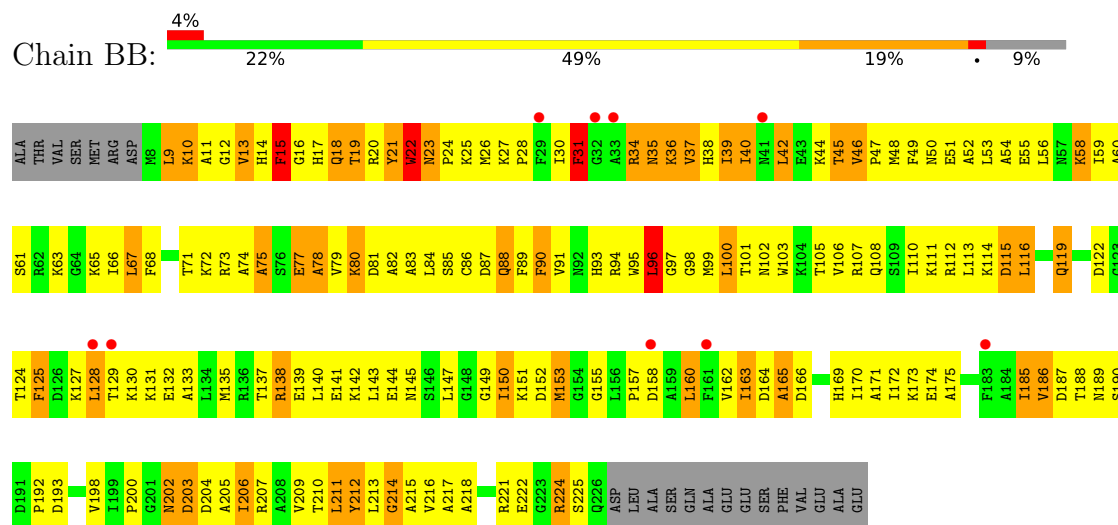
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| A1216 | A1155 | U1095 | A1035 | A974  | U854 | A794 | G734 | G674 | C613 | A553 | A493 | G433 | A373 | A313 |
| C1217 | G1156 | C1096 | A1036 | A975  | U855 | C795 | C735 | A675 | C614 | A554 | A494 | U434 | A374 | C314 |
| C1218 | C1157 | C1097 | A1037 | A976  | C856 | C796 | C736 | A676 | G615 | U555 | A495 | A435 | U375 | A315 |
| A1219 | C1158 | C1098 | C1038 | A977  | C857 | C797 | C737 | U677 | G616 | C556 | A496 | A436 | G376 | C316 |
| G1220 | U1159 | G1099 | G1039 | A978  | G858 | U798 | C738 | U678 | G617 | G557 | A497 | U437 | G377 | U317 |
| G1221 | G1160 | G1100 | U1040 | C979  | G859 | U799 | C739 | C679 | C618 | G558 | A498 | U438 | G378 | G318 |
| G1222 | C1162 | A1101 | G1041 | C980  | U860 | G800 | U740 | C680 | U619 | A559 | A499 | U439 | C379 | G319 |
| C1223 | A1163 | A1102 | A1042 | C981  | G861 | U801 | G741 | A681 | C620 | A560 | G500 | C440 | C380 | A320 |
| U1224 | G1164 | U982  | G1043 | U982  | G862 | A802 | G742 | G682 | A621 | U561 | C501 | A441 | C381 | A321 |
| A1225 | A1165 | A1103 | A1044 | A983  | U863 | G803 | A743 | G683 | A622 | U562 | A502 | G442 | A382 | C322 |
| C1226 | G1166 | A1105 | C1045 | A984  | U864 | U804 | C744 | U684 | C623 | A563 | C503 | G443 | A383 | U323 |
| G1227 | A1167 | A1106 | A1046 | C985  | G865 | C805 | G745 | G685 | G624 | C564 | C504 | G444 | G384 | G324 |
| C1228 | U1168 | G1107 | G1047 | U986  | C866 | C806 | A746 | U686 | U625 | U565 | C505 | G445 | C385 | A325 |
| A1229 | A1169 | G1108 | G1048 | G987  | G867 | A807 | A747 | A687 | G626 | G566 | G506 | G446 | C386 | G326 |
| C1230 | A1170 | C1109 | U1049 | G988  | C868 | C808 | G748 | G688 | G627 | G567 | C507 | A447 | U387 | A327 |
| G1231 | A1171 | A1110 | G1050 | U989  | C869 | G809 | A749 | G689 | G628 | G568 | U508 | A448 | U388 | C328 |
| U1232 | C1172 | A1111 | C1051 | C990  | U870 | C810 | C750 | G690 | A629 | C569 | A509 | G449 | A389 | A329 |
| G1233 | U1173 | C1112 | U1052 | U991  | U871 | C811 | G751 | G691 | U632 | G570 | A510 | G450 | U390 | C330 |
| C1234 | G1174 | C1113 | G1053 | U992  | A872 | G812 | G752 | U692 | G633 | U571 | C511 | A451 | G391 | G331 |
| U1235 | G1175 | G1114 | C1054 | G993  | A873 | U813 | A753 | G693 | G634 | A572 | U512 | A452 | C392 | G332 |
| A1236 | A1176 | U1115 | A1055 | A994  | G874 | A814 | C754 | A694 | C635 | A573 | C513 | G453 | U393 | U333 |
| C1237 | G1177 | U1116 | U1056 | C995  | U875 | A815 | G755 | A695 | A636 | A574 | C514 | G454 | G394 | C334 |
| A1238 | G1178 | A1117 | G1057 | C996  | C876 | A816 | C756 | A696 | U637 | G575 | C515 | G455 | C395 | C335 |
| U1239 | A1179 | U1118 | G1058 | C997  | G877 | C817 | U757 | U697 | G638 | C576 | U516 | G456 | C396 | A336 |
| A1240 | A1180 | C1119 | C1059 | C998  | A878 | G818 | C758 | G698 | U639 | G577 | G517 | G457 | A397 | G337 |
| G1241 | G1181 | C1120 | U1060 | A1000 | C879 | A819 | A759 | C699 | G639 | C578 | C518 | U458 | U398 | A338 |
| C1242 | G1182 | U1121 | G1061 | C1001 | C880 | U820 | G760 | G700 | A640 | A579 | C519 | A459 | G399 | C339 |
| G1243 | U1183 | U1122 | U1062 | G881  | G881 | G821 | G761 | U701 | U641 | C580 | A520 | A460 | C400 | U340 |
| G1244 | G1184 | G1123 | C1063 | G942  | C882 | U822 | U762 | A702 | A642 | G581 | G521 | A461 | C401 | C341 |
| C1245 | A1185 | U124  | G1064 | U943  | C883 | C823 | G763 | G703 | C643 | G582 | C522 | G462 | G402 | C342 |
| U1246 | G1186 | U1125 | U1065 | G944  | U884 | G824 | C764 | A704 | U644 | A583 | A523 | U463 | G403 | U343 |
| A1247 | G1187 | U1126 | C1066 | G945  | G885 | A825 | G765 | G705 | G645 | G584 | G524 | U464 | G404 | A344 |
| U1248 | A1188 | U1127 | A1067 | U1007 | G886 | C826 | A766 | A706 | G646 | G585 | C525 | A465 | U405 | C345 |
| C1249 | U1189 | C1128 | G1068 | G947  | G887 | U827 | A767 | U707 | C647 | C586 | C526 | A466 | G406 | G346 |
| A1250 | G1190 | C1129 | C1069 | C948  | G888 | U828 | A768 | C708 | A648 | G587 | G527 | U467 | U407 | G347 |
| A1251 | A1191 | A1130 | U1070 | A949  | A889 | G829 | G769 | U709 | A649 | G588 | C528 | A468 | A408 | G348 |
| C1252 | C1192 | G1131 | C1071 | U950  | G890 | G830 | C770 | G710 | G650 | U589 | G529 | C469 | U409 | A349 |
| G1253 | G1193 | C1132 | G1072 | U951  | U891 | A831 | G771 | G711 | C651 | U590 | G530 | C470 | G410 | G350 |
| A1254 | U1194 | G1133 | U1073 | U952  | A892 | G832 | U772 | A712 | U652 | G591 | U531 | U471 | A411 | G351 |
| G1255 | C1195 | G1134 | G1074 | G953  | C893 | G833 | G773 | G713 | U653 | G592 | A532 | G472 | A412 | C352 |
| A1256 | U1196 | U1135 | U1075 | G954  | G894 | U834 | G774 | A714 | G654 | U594 | A533 | U473 | G413 | A353 |
| A1257 | C1197 | C1136 | U1076 | U955  | G895 | U835 | G775 | A715 | A655 | U594 | U534 | G474 | A414 | G354 |
| G1258 | U1198 | C1137 | G1077 | U956  | C896 | G836 | G776 | A716 | G656 | A595 | A535 | U475 | A415 | C355 |
| C1259 | U1199 | G1138 | U1078 | U957  | C897 | U837 | A777 | U717 | U657 | A596 | C536 | U476 | A416 | A356 |
| G1260 | C1200 | G1139 | G1079 | A958  | G898 | G838 | G778 | A718 | C658 | G597 | G537 | C477 | G417 | G357 |
| A1261 | U1201 | C1140 | A1080 | A959  | C899 | C839 | C779 | C719 | U659 | U598 | G538 | A478 | C418 | U358 |
| C1262 | U1202 | C1141 | A1081 | U960  | A900 | C940 | A780 | C720 | C660 | C599 | A539 | U479 | C419 | G359 |
| C1263 | C1203 | G1142 | A1082 | U961  | A901 | C941 | G721 | G661 | G661 | A600 | G540 | U480 | U420 | G360 |
| U1264 | A1204 | G1143 | U1083 | C962  | G902 | U842 | A782 | G722 | U662 | G601 | G541 | U481 | U421 | G361 |
| C1265 | U1205 | G1144 | G1084 | G963  | G903 | U843 | C783 | U723 | A663 | A602 | G542 | A482 | G422 | G362 |
| G1266 | G1206 | A1145 | U1085 | A964  | U904 | G844 | A784 | G724 | G664 | U603 | U543 | C483 | G423 | A363 |
| C1267 | U1207 | A1146 | U1086 | U965  | U905 | A845 | G785 | G725 | A665 | G604 | G544 | C484 | G424 | A364 |
| A1268 | C1208 | C1147 | G1087 | G966  | A906 | G846 | G786 | C726 | G666 | U605 | C545 | U485 | G425 | U365 |
| G1269 | U1209 | U1148 | G1088 | C967  | A907 | G847 | A787 | G727 | G667 | G606 | A546 | U486 | U426 | A366 |
| C1270 | C1210 | C1149 | U1089 | A968  | A908 | C848 | U788 | A728 | G668 | A607 | A547 | A487 | U427 | U367 |
| A1271 | U1211 | A1150 | U1090 | A969  | A909 | G849 | U789 | A729 | G669 | A608 | G548 | C488 | G428 | U368 |
| G1272 | U1212 | A1151 | U1091 | C970  | C910 | U850 | A790 | G730 | G670 | A609 | C549 | C489 | U429 | G369 |
| C1273 | A1213 | A1152 | A1092 | G971  | U911 | G851 | A791 | G731 | G671 | U610 | G550 | C490 | A450 | C370 |
| A1274 | G1214 | C1153 | A1093 | C972  | U912 | G852 | A792 | C732 | U672 | C611 | U551 | C491 | A451 | A371 |
| A1275 | G1215 | G1154 | G1094 | G973  | A913 | C853 | U793 | G733 | A673 | C612 | U552 | C492 | A452 | C372 |

- Molecule 33: 16S RIBOSOMAL RNA

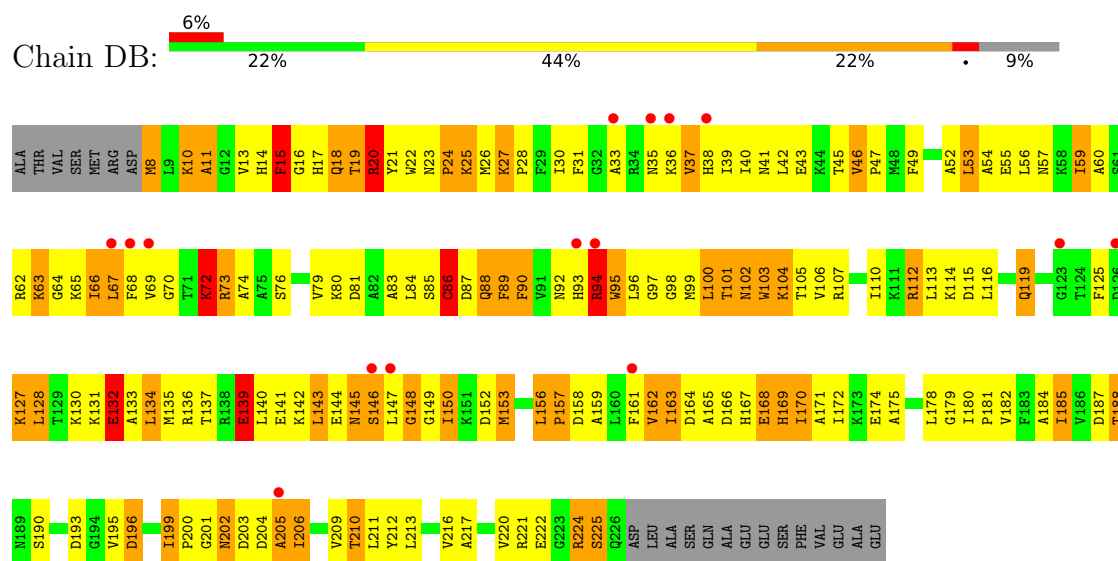




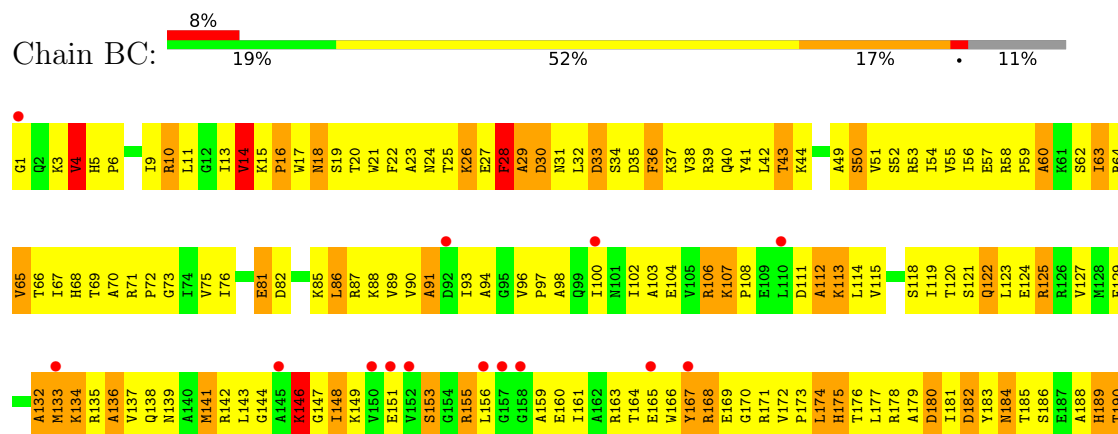
• Molecule 34: 30S RIBOSOMAL PROTEIN S2

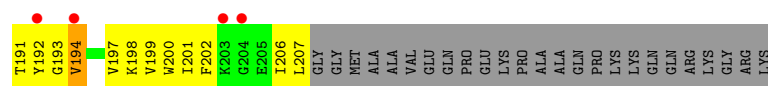


• Molecule 34: 30S RIBOSOMAL PROTEIN S2

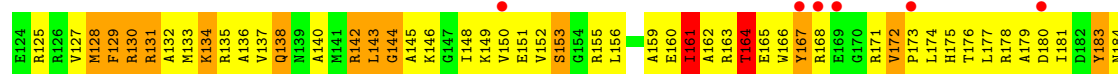
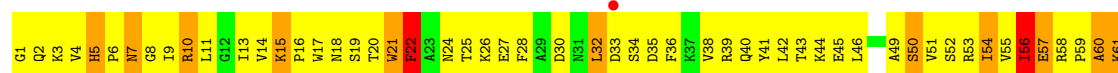
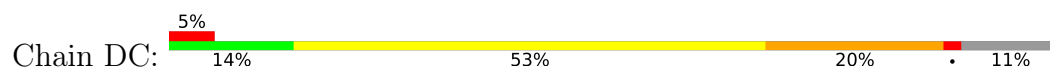


• Molecule 35: 30S RIBOSOMAL PROTEIN S3

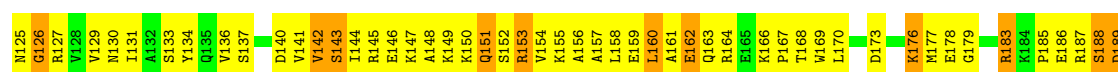
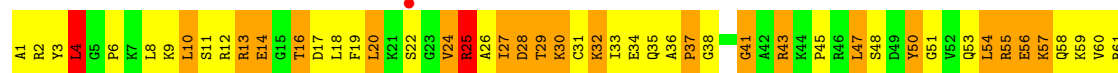




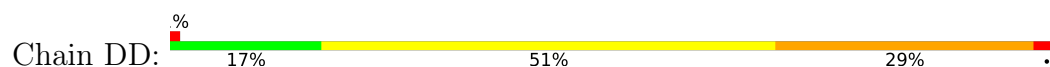
• Molecule 35: 30S RIBOSOMAL PROTEIN S3



• Molecule 36: 30S RIBOSOMAL PROTEIN S4

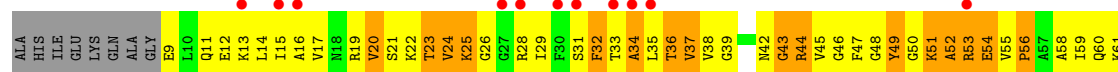
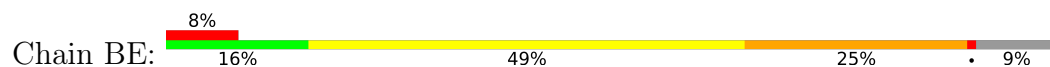


• Molecule 36: 30S RIBOSOMAL PROTEIN S4

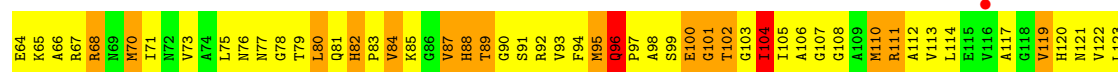
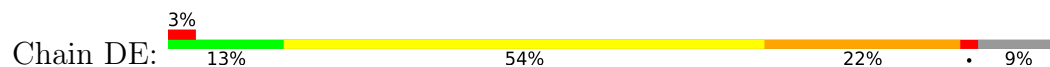




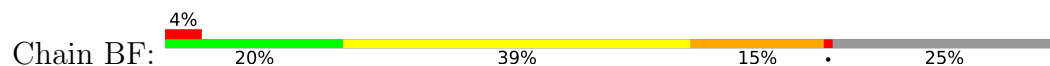
• Molecule 37: 30S RIBOSOMAL PROTEIN S5



• Molecule 37: 30S RIBOSOMAL PROTEIN S5

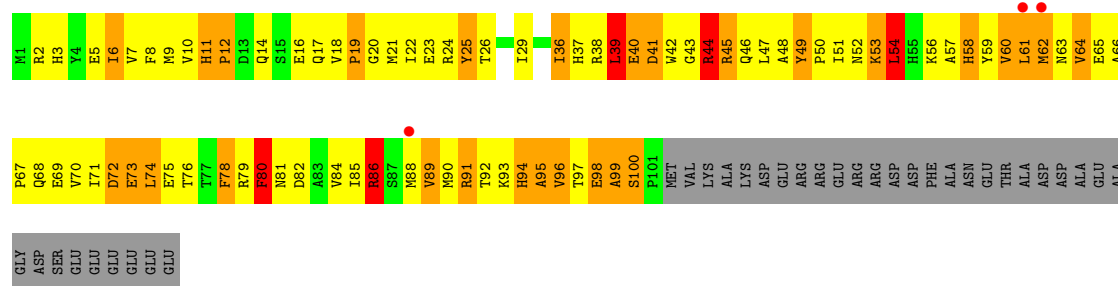


• Molecule 38: 30S RIBOSOMAL PROTEIN S6

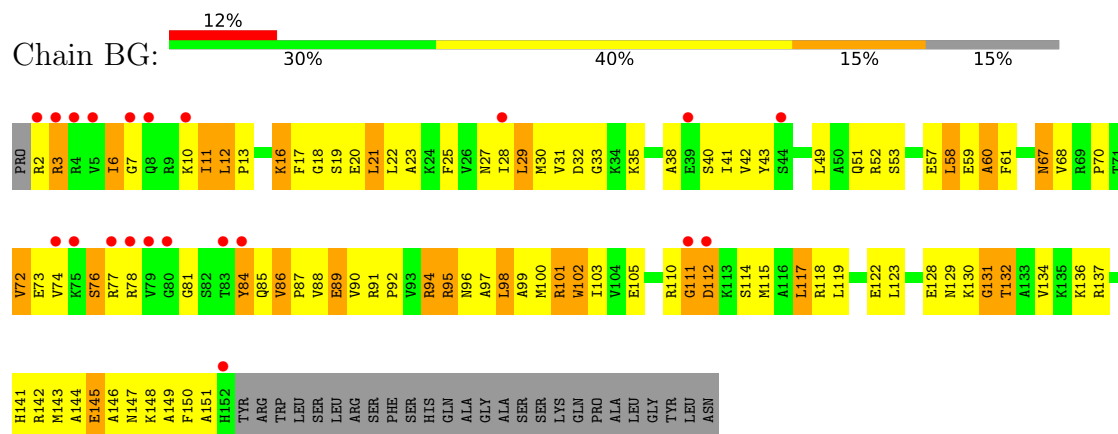


• Molecule 38: 30S RIBOSOMAL PROTEIN S6

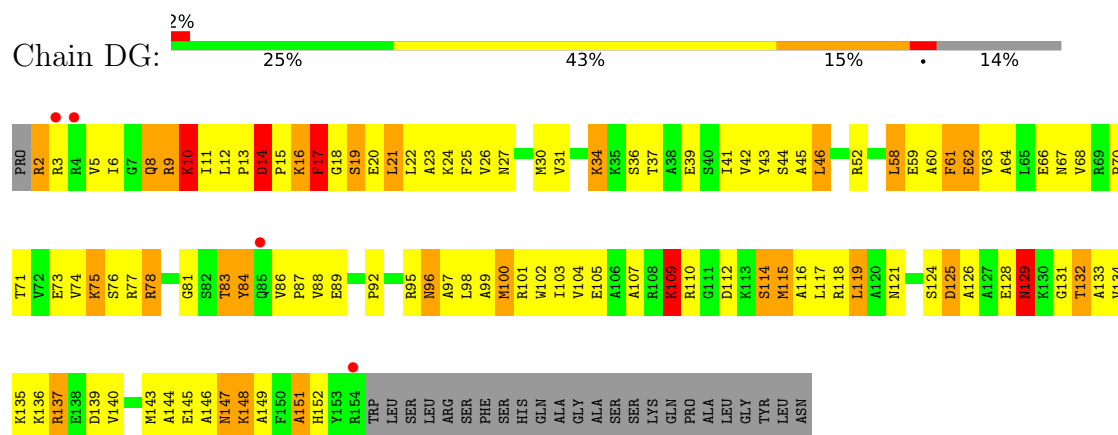




• Molecule 39: 30S RIBOSOMAL PROTEIN S7



• Molecule 39: 30S RIBOSOMAL PROTEIN S7



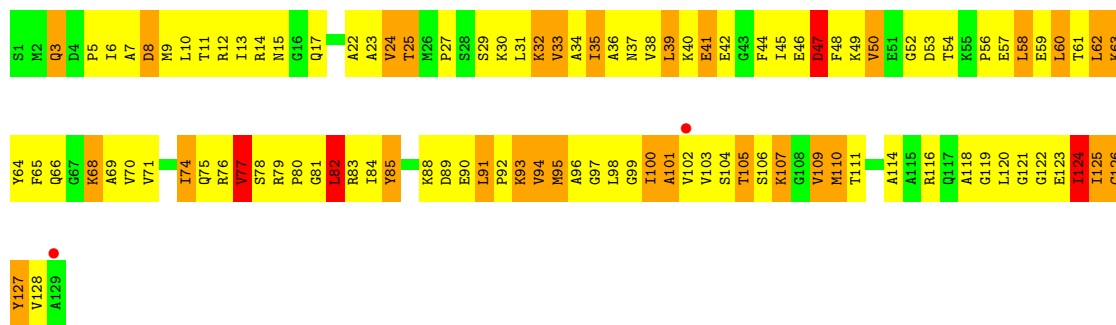
• Molecule 40: 30S RIBOSOMAL PROTEIN S8



• Molecule 40: 30S RIBOSOMAL PROTEIN S8

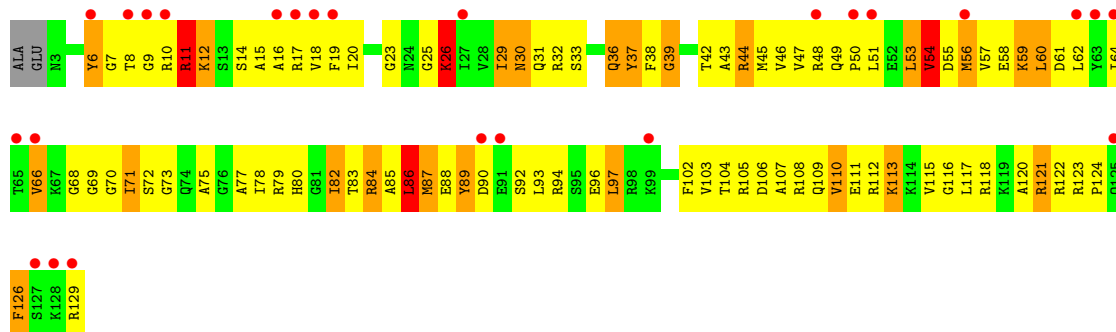


Chain DH: 

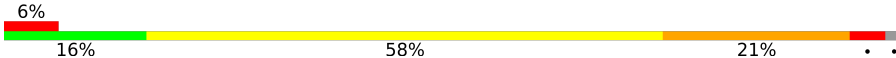


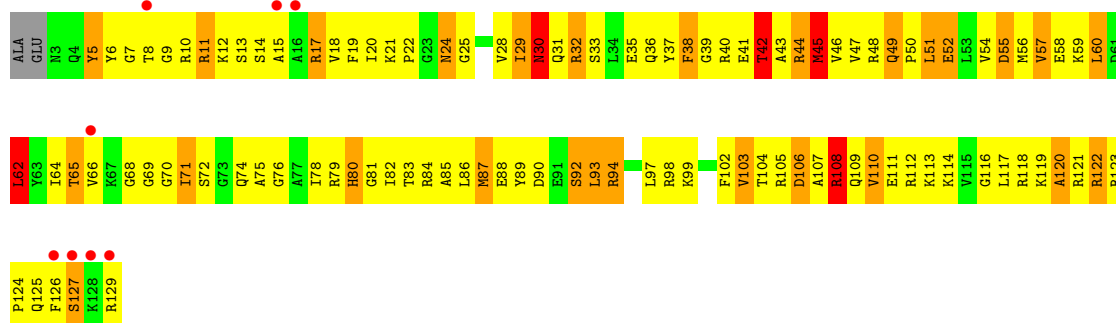
• Molecule 41: 30S RIBOSOMAL PROTEIN S9

Chain BI: 

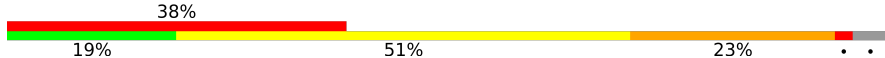


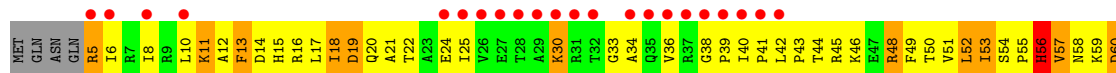
• Molecule 41: 30S RIBOSOMAL PROTEIN S9

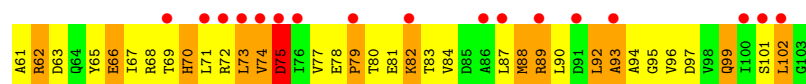
Chain DI: 



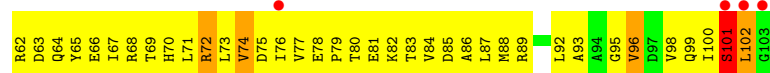
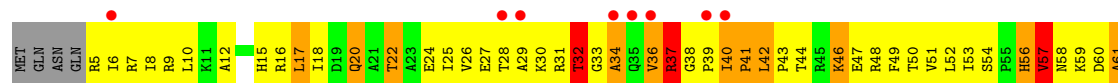
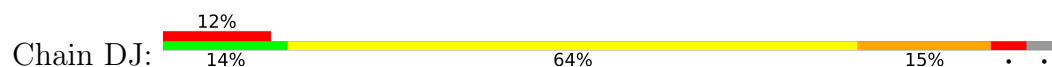
• Molecule 42: 30S RIBOSOMAL PROTEIN S10

Chain BJ: 

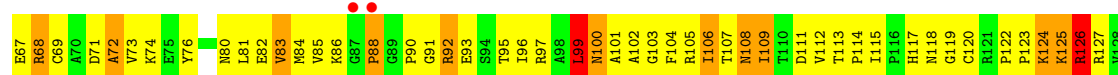
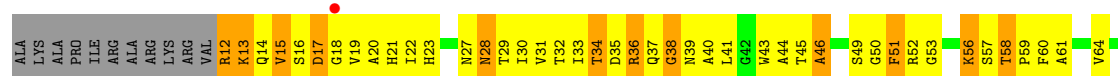




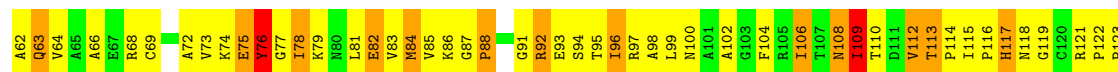
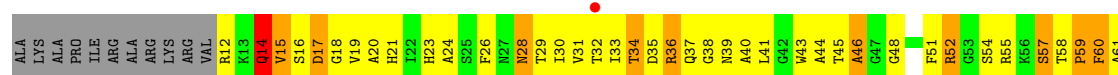
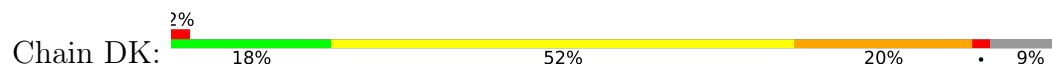
• Molecule 42: 30S RIBOSOMAL PROTEIN S10



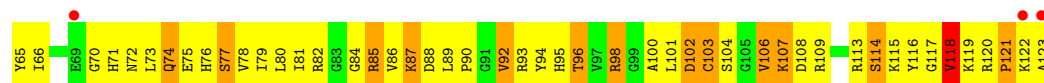
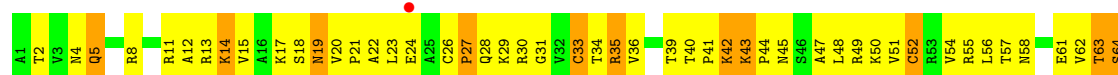
• Molecule 43: 30S RIBOSOMAL PROTEIN S11



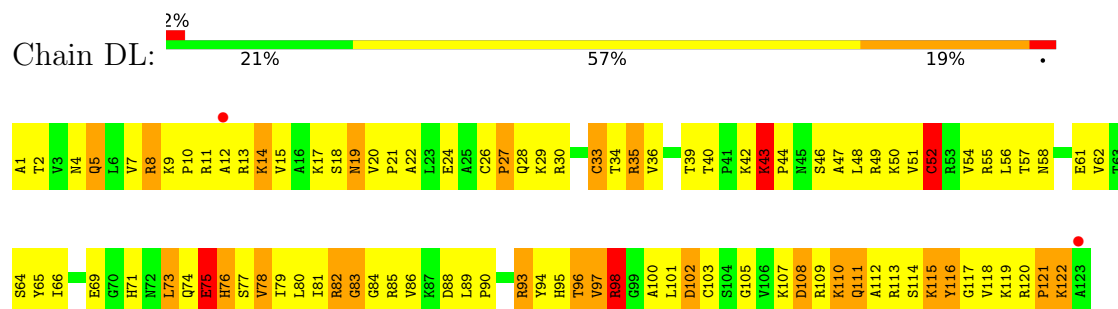
• Molecule 43: 30S RIBOSOMAL PROTEIN S11



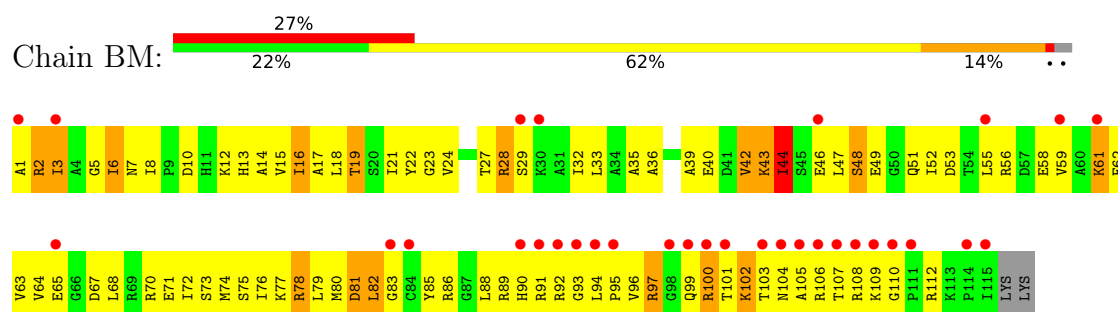
• Molecule 44: 30S RIBOSOMAL PROTEIN S12



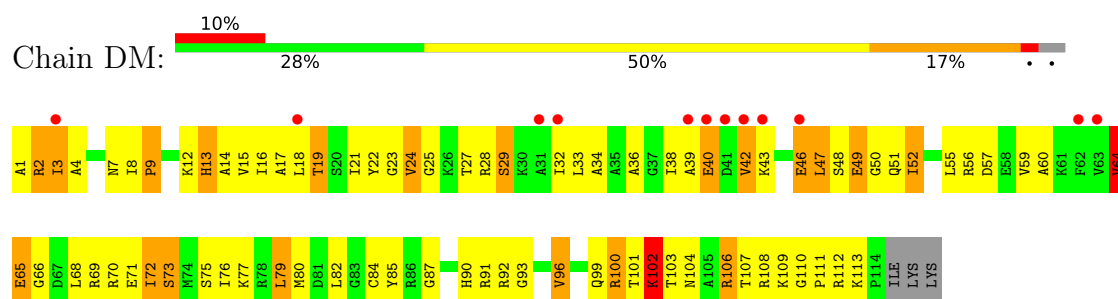
● Molecule 44: 30S RIBOSOMAL PROTEIN S12



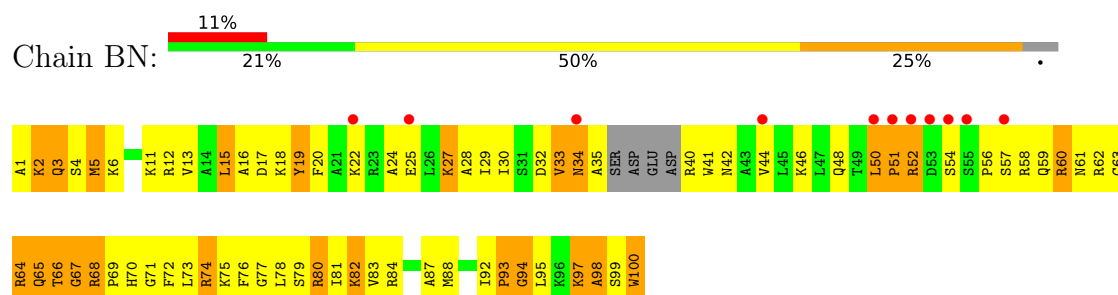
● Molecule 45: 30S RIBOSOMAL PROTEIN S13



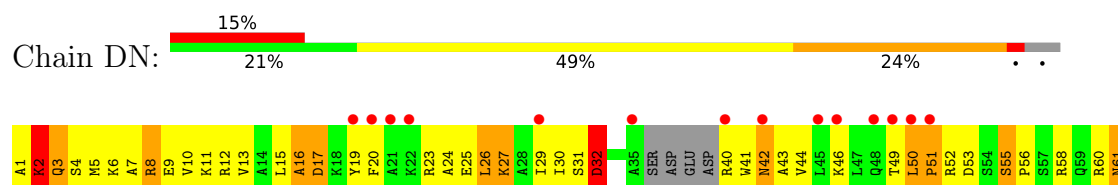
● Molecule 45: 30S RIBOSOMAL PROTEIN S13

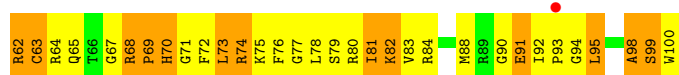


● Molecule 46: 30S RIBOSOMAL PROTEIN S14

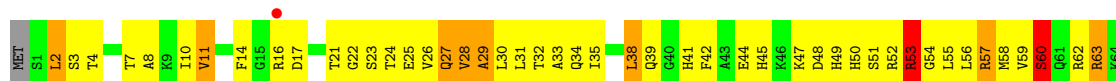


● Molecule 46: 30S RIBOSOMAL PROTEIN S14

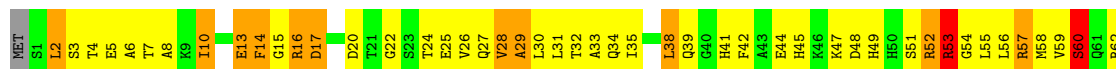




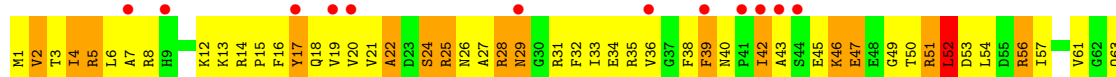
• Molecule 47: 30S RIBOSOMAL PROTEIN S15



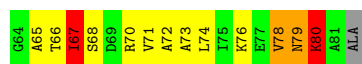
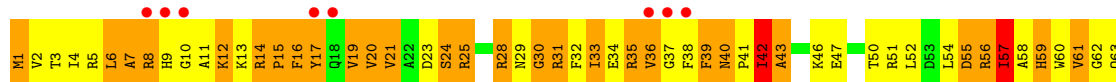
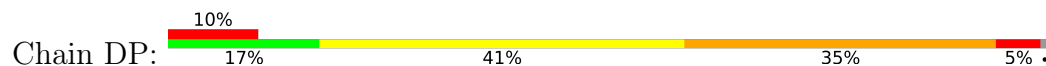
• Molecule 47: 30S RIBOSOMAL PROTEIN S15



• Molecule 48: 30S RIBOSOMAL PROTEIN S16

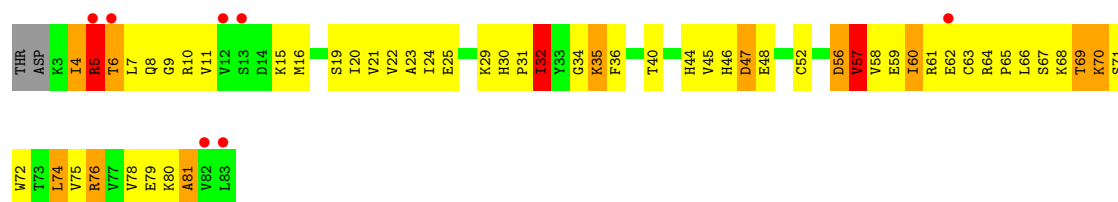


• Molecule 48: 30S RIBOSOMAL PROTEIN S16

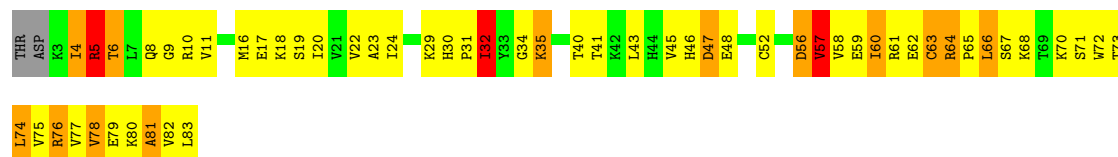


• Molecule 49: 30S RIBOSOMAL PROTEIN S17

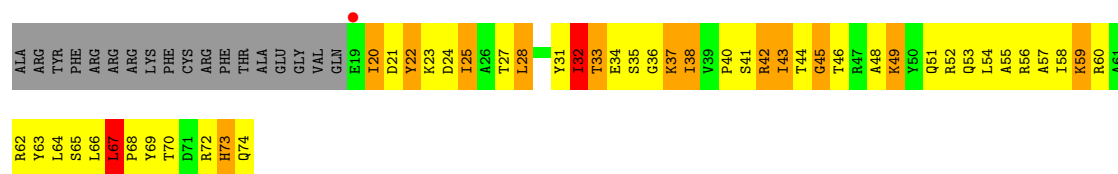




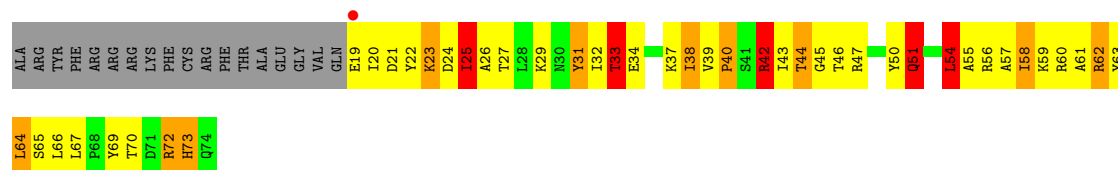
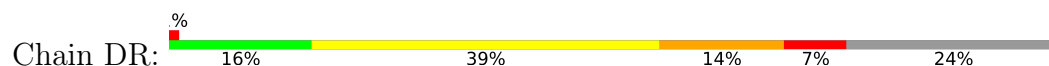
● Molecule 49: 30S RIBOSOMAL PROTEIN S17



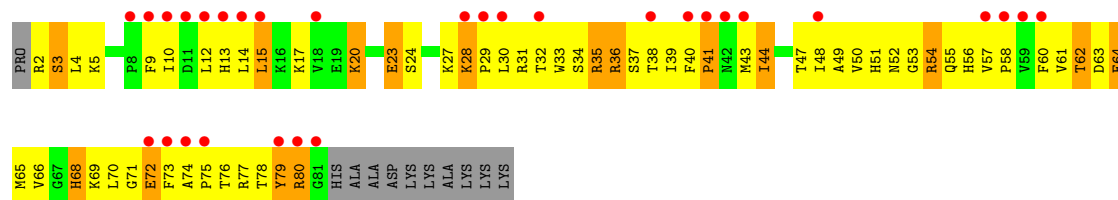
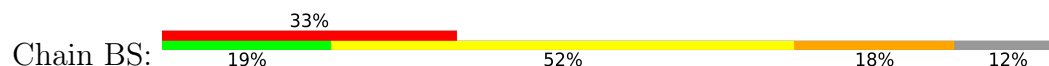
● Molecule 50: 30S RIBOSOMAL PROTEIN S18



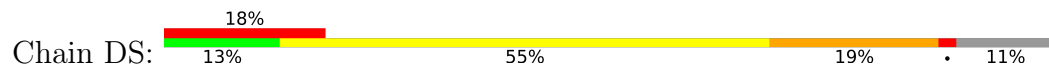
● Molecule 50: 30S RIBOSOMAL PROTEIN S18

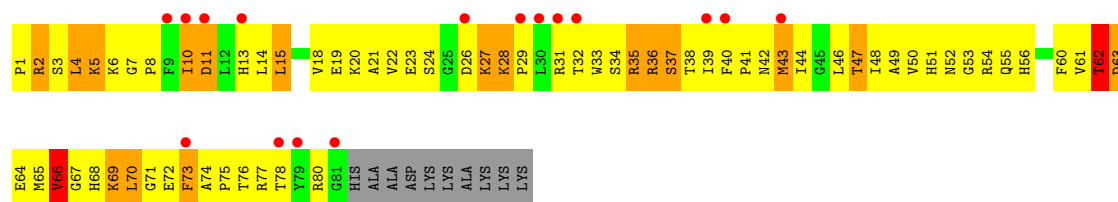


● Molecule 51: 30S RIBOSOMAL PROTEIN S19

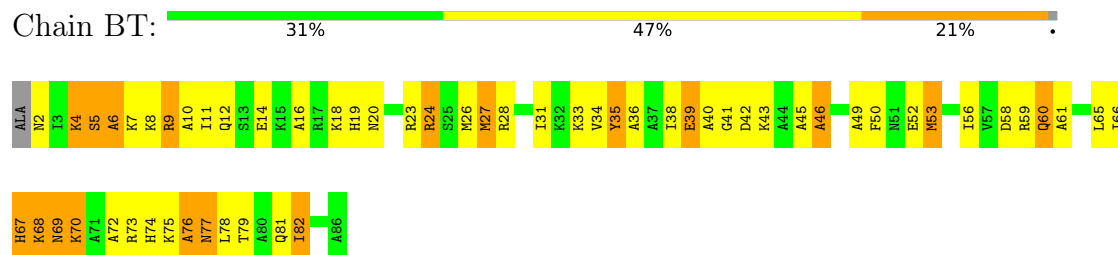


● Molecule 51: 30S RIBOSOMAL PROTEIN S19

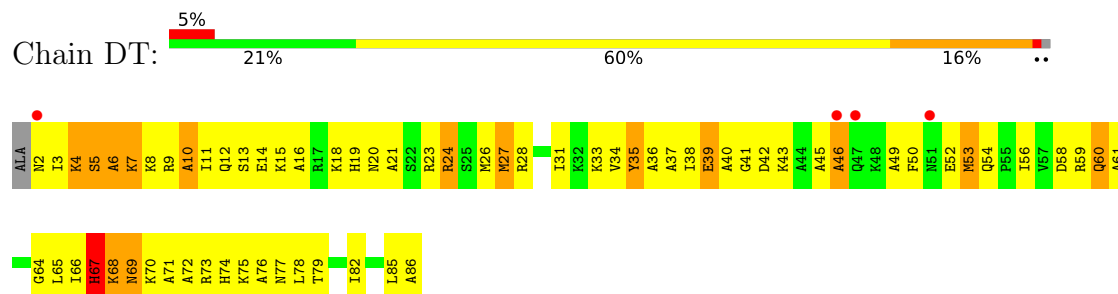




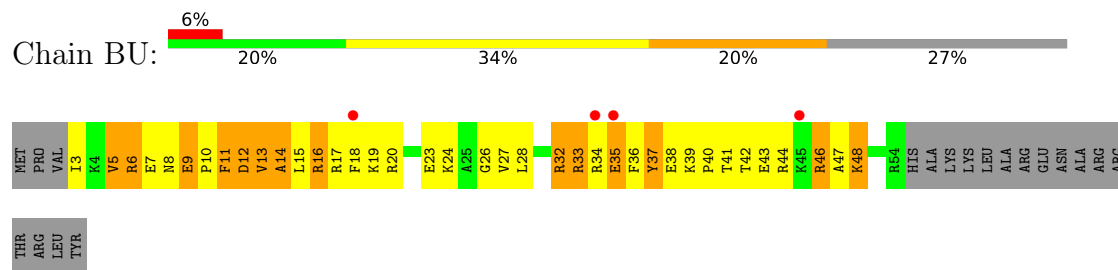
• Molecule 52: 30S RIBOSOMAL PROTEIN S20



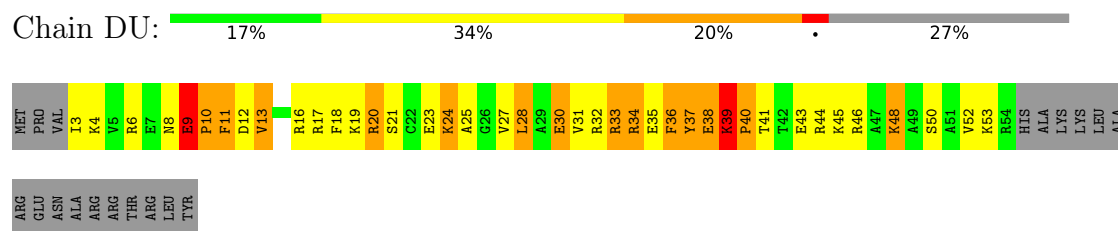
• Molecule 52: 30S RIBOSOMAL PROTEIN S20



• Molecule 53: 30S RIBOSOMAL PROTEIN S21



• Molecule 53: 30S RIBOSOMAL PROTEIN S21



## 4 Data and refinement statistics

| Property  | Value   | Source           |
|---|---|------------------|
| Space group   | P 21 21 21  | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 208.18Å 380.08Å 736.70Å<br>90.00° 90.00° 90.00°             | Depositor        |
| Resolution (Å)  | 50.00 – 3.74<br>49.74 – 3.74                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 91.5 (50.00-3.74)<br>91.5 (49.74-3.74)                      | Depositor<br>EDS |
| $R_{merge}$   | 0.18  | Depositor        |
| $R_{sym}$   | (Not available)   | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 1.52 (at 3.77Å)   | Xtriage          |
| Refinement program  | PHENIX (PHENIX.REFINE)                                      | Depositor        |
| R, $R_{free}$   | 0.259 , 0.323<br>0.250 , 0.308                              | Depositor<br>DCC |
| $R_{free}$ test set   | 5544 reflections (1.01%)                                    | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 90.4  | Xtriage          |
| Anisotropy  | 0.290   | Xtriage          |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | (Not available) , (Not available)                           | EDS              |
| L-test for twinning <sup>2</sup>  | $\langle  L  \rangle = 0.34$ , $\langle L^2 \rangle = 0.17$ | Xtriage          |
| Estimated twinning fraction   | No twinning to report.                                      | Xtriage          |
| $F_o, F_c$ correlation  | 0.91  | EDS              |
| Total number of atoms   | 284264  | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 129.0   | wwPDB-VP         |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.64% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths |                 | Bond angles |                    |
|-----|-------|--------------|-----------------|-------------|--------------------|
|     |       | RMSZ         | $\# Z  > 5$     | RMSZ        | $\# Z  > 5$        |
| 1   | A0    | 0.41         | 0/450           | 0.71        | 0/599              |
| 1   | C0    | 0.48         | 0/450           | 0.78        | 0/599              |
| 2   | A1    | 0.42         | 0/448           | 0.69        | 0/594              |
| 2   | C1    | 0.46         | 0/448           | 0.73        | 0/594              |
| 3   | A2    | 0.46         | 0/380           | 0.76        | 0/498              |
| 3   | C2    | 0.46         | 0/380           | 0.83        | 1/498 (0.2%)       |
| 4   | A3    | 0.52         | 0/513           | 0.79        | 0/676              |
| 4   | C3    | 0.54         | 0/513           | 0.91        | 0/676              |
| 5   | A4    | 0.43         | 0/303           | 0.69        | 0/397              |
| 5   | C4    | 0.46         | 0/303           | 0.78        | 0/397              |
| 6   | A5    | 0.64         | 0/134           | 0.72        | 0/176              |
| 7   | AA    | 0.76         | 3/2803 (0.1%)   | 1.48        | 39/4371 (0.9%)     |
| 7   | CA    | 0.79         | 2/2803 (0.1%)   | 1.52        | 47/4371 (1.1%)     |
| 8   | AB    | 0.82         | 7/68314 (0.0%)  | 1.58        | 975/106569 (0.9%)  |
| 8   | CB    | 0.90         | 15/68314 (0.0%) | 1.64        | 1204/106569 (1.1%) |
| 9   | AC    | 0.51         | 0/2093          | 0.81        | 2/2815 (0.1%)      |
| 9   | CC    | 0.55         | 0/2093          | 0.82        | 1/2815 (0.0%)      |
| 10  | AD    | 0.45         | 0/1586          | 0.72        | 0/2134             |
| 10  | CD    | 0.51         | 0/1586          | 0.77        | 0/2134             |
| 11  | AE    | 0.47         | 0/1571          | 0.77        | 0/2113             |
| 11  | CE    | 0.50         | 0/1571          | 0.75        | 0/2113             |
| 12  | AF    | 0.30         | 0/1444          | 0.53        | 0/1937             |
| 12  | CF    | 0.32         | 0/1444          | 0.54        | 0/1937             |
| 13  | AG    | 0.38         | 0/1343          | 0.62        | 0/1816             |
| 13  | CG    | 0.37         | 0/1343          | 0.62        | 0/1816             |
| 14  | AH    | 0.34         | 0/1122          | 0.60        | 0/1515             |
| 14  | CH    | 0.37         | 0/1122          | 0.64        | 0/1515             |
| 15  | AI    | 0.29         | 0/1046          | 0.52        | 0/1410             |
| 15  | CI    | 0.26         | 0/1045          | 0.52        | 0/1406             |
| 16  | AJ    | 0.43         | 0/1136          | 0.71        | 0/1531             |
| 16  | CJ    | 0.50         | 0/1136          | 0.75        | 0/1531             |
| 17  | AK    | 0.50         | 0/940           | 0.71        | 0/1260             |



| Mol | Chain | Bond lengths |                | Bond angles |                  |
|-----|-------|--------------|----------------|-------------|------------------|
|     |       | RMSZ         | # Z  >5        | RMSZ        | # Z  >5          |
| 17  | CK    | 0.54         | 0/940          | 0.72        | 0/1260           |
| 18  | AL    | 0.46         | 0/1062         | 0.84        | 1/1413 (0.1%)    |
| 18  | CL    | 0.44         | 0/1062         | 0.81        | 0/1413           |
| 19  | AM    | 0.46         | 0/1093         | 0.73        | 0/1460           |
| 19  | CM    | 0.48         | 0/1093         | 0.77        | 0/1460           |
| 20  | AN    | 0.41         | 0/1021         | 0.66        | 0/1364           |
| 20  | CN    | 0.49         | 0/1021         | 0.73        | 0/1364           |
| 21  | AO    | 0.38         | 0/910          | 0.69        | 0/1219           |
| 21  | CO    | 0.45         | 0/910          | 0.77        | 0/1219           |
| 22  | AP    | 0.44         | 0/929          | 0.77        | 1/1242 (0.1%)    |
| 22  | CP    | 0.51         | 0/929          | 0.81        | 1/1242 (0.1%)    |
| 23  | AQ    | 0.45         | 0/960          | 0.71        | 0/1278           |
| 23  | CQ    | 0.53         | 0/960          | 0.81        | 1/1278 (0.1%)    |
| 24  | AR    | 0.41         | 0/829          | 0.72        | 0/1107           |
| 24  | CR    | 0.46         | 0/829          | 0.75        | 0/1107           |
| 25  | AS    | 0.43         | 0/864          | 0.74        | 0/1156           |
| 25  | CS    | 0.44         | 0/864          | 0.82        | 0/1156           |
| 26  | AT    | 0.45         | 0/785          | 0.68        | 0/1050           |
| 26  | CT    | 0.43         | 0/785          | 0.69        | 0/1050           |
| 27  | AU    | 0.48         | 0/788          | 0.72        | 0/1053           |
| 27  | CU    | 0.42         | 0/788          | 0.69        | 0/1053           |
| 28  | AV    | 0.34         | 0/766          | 0.52        | 0/1025           |
| 28  | CV    | 0.36         | 0/766          | 0.52        | 0/1025           |
| 29  | AW    | 0.42         | 0/642          | 0.76        | 0/848            |
| 29  | CW    | 0.45         | 0/642          | 0.78        | 0/848            |
| 30  | AX    | 0.47         | 0/510          | 0.76        | 0/677            |
| 30  | CX    | 0.40         | 0/510          | 0.69        | 0/677            |
| 31  | AY    | 0.36         | 0/453          | 0.66        | 0/605            |
| 31  | CY    | 0.34         | 0/453          | 0.67        | 0/605            |
| 32  | AZ    | 0.56         | 0/559          | 0.94        | 2/745 (0.3%)     |
| 32  | CZ    | 0.68         | 0/559          | 0.97        | 0/745            |
| 33  | BA    | 0.70         | 4/36761 (0.0%) | 1.42        | 407/57346 (0.7%) |
| 33  | DA    | 0.82         | 4/36762 (0.0%) | 1.58        | 674/57350 (1.2%) |
| 34  | BB    | 0.32         | 0/1736         | 0.54        | 0/2340           |
| 34  | DB    | 0.36         | 0/1736         | 0.61        | 0/2340           |
| 35  | BC    | 0.33         | 0/1652         | 0.53        | 0/2227           |
| 35  | DC    | 0.39         | 0/1652         | 0.61        | 0/2227           |
| 36  | BD    | 0.36         | 0/1665         | 0.62        | 0/2227           |
| 36  | DD    | 0.46         | 0/1665         | 0.68        | 0/2227           |
| 37  | BE    | 0.37         | 0/1119         | 0.56        | 0/1506           |
| 37  | DE    | 0.43         | 0/1119         | 0.67        | 0/1506           |
| 38  | BF    | 0.40         | 1/836 (0.1%)   | 0.57        | 0/1130           |
| 38  | DF    | 0.41         | 1/836 (0.1%)   | 0.63        | 1/1130 (0.1%)    |

| Mol | Chain | Bond lengths |                  | Bond angles |                    |
|-----|-------|--------------|------------------|-------------|--------------------|
|     |       | RMSZ         | # Z  >5          | RMSZ        | # Z  >5            |
| 39  | BG    | 0.33         | 0/1188           | 0.52        | 0/1593             |
| 39  | DG    | 0.38         | 0/1212           | 0.58        | 0/1626             |
| 40  | BH    | 0.32         | 0/989            | 0.55        | 0/1326             |
| 40  | DH    | 0.44         | 0/989            | 0.69        | 0/1326             |
| 41  | BI    | 0.29         | 0/1034           | 0.51        | 0/1375             |
| 41  | DI    | 0.33         | 0/1034           | 0.64        | 1/1375 (0.1%)      |
| 42  | BJ    | 0.33         | 1/797 (0.1%)     | 0.53        | 0/1079             |
| 42  | DJ    | 0.36         | 1/797 (0.1%)     | 0.57        | 0/1079             |
| 43  | BK    | 0.35         | 0/893            | 0.61        | 0/1205             |
| 43  | DK    | 0.43         | 0/893            | 0.70        | 0/1205             |
| 44  | BL    | 0.33         | 0/969            | 0.58        | 0/1300             |
| 44  | DL    | 0.42         | 0/969            | 0.67        | 0/1300             |
| 45  | BM    | 0.29         | 0/893            | 0.50        | 0/1195             |
| 45  | DM    | 0.37         | 1/885 (0.1%)     | 0.60        | 0/1183             |
| 46  | BN    | 0.29         | 0/785            | 0.51        | 0/1043             |
| 46  | DN    | 0.30         | 0/785            | 0.56        | 0/1043             |
| 47  | BO    | 0.33         | 0/724            | 0.55        | 0/966              |
| 47  | DO    | 0.38         | 0/724            | 0.63        | 0/966              |
| 48  | BP    | 0.30         | 0/659            | 0.51        | 0/884              |
| 48  | DP    | 0.49         | 0/649            | 0.69        | 0/872              |
| 49  | BQ    | 0.37         | 0/658            | 0.59        | 0/883              |
| 49  | DQ    | 0.39         | 0/666            | 0.65        | 0/892              |
| 50  | BR    | 0.40         | 0/463            | 0.62        | 0/623              |
| 50  | DR    | 0.49         | 0/463            | 0.70        | 0/623              |
| 51  | BS    | 0.32         | 1/653 (0.2%)     | 0.50        | 0/879              |
| 51  | DS    | 0.37         | 1/661 (0.2%)     | 0.62        | 0/890              |
| 52  | BT    | 0.32         | 0/671            | 0.49        | 0/888              |
| 52  | DT    | 0.39         | 0/671            | 0.58        | 0/888              |
| 53  | BU    | 0.42         | 0/431            | 0.56        | 0/572              |
| 53  | DU    | 0.55         | 0/431            | 0.73        | 0/572              |
| All | All   | 0.73         | 42/306634 (0.0%) | 1.39        | 3358/458333 (0.7%) |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | C0    | 0                   | 2                   |
| 4   | C3    | 0                   | 2                   |
| 11  | CE    | 0                   | 3                   |
| 13  | AG    | 0                   | 1                   |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 14  | CH    | 0                   | 1                   |
| 16  | AJ    | 0                   | 1                   |
| 16  | CJ    | 0                   | 1                   |
| 18  | AL    | 0                   | 1                   |
| 18  | CL    | 0                   | 1                   |
| 19  | AM    | 0                   | 1                   |
| 20  | CN    | 0                   | 2                   |
| 22  | AP    | 0                   | 3                   |
| 22  | CP    | 0                   | 4                   |
| 24  | CR    | 0                   | 1                   |
| 25  | CS    | 0                   | 2                   |
| 26  | CT    | 0                   | 1                   |
| 30  | CX    | 0                   | 1                   |
| 32  | AZ    | 0                   | 1                   |
| 32  | CZ    | 0                   | 1                   |
| All | All   | 0                   | 30                  |

All (42) bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 33  | DA    | 765  | G    | N9-C4   | 9.10  | 1.45        | 1.38     |
| 8   | CB    | 301  | G    | C3'-O3' | 7.66  | 1.52        | 1.42     |
| 7   | CA    | 87   | U    | C1'-N1  | 7.10  | 1.59        | 1.48     |
| 7   | AA    | 87   | U    | C1'-N1  | 6.70  | 1.58        | 1.48     |
| 33  | DA    | 519  | C    | C1'-N1  | 6.38  | 1.58        | 1.48     |
| 8   | AB    | 2288 | A    | N1-C2   | -6.29 | 1.28        | 1.34     |
| 33  | DA    | 765  | G    | N3-C4   | 6.28  | 1.39        | 1.35     |
| 8   | AB    | 1440 | U    | C1'-N1  | 6.07  | 1.57        | 1.48     |
| 8   | CB    | 2288 | A    | C5-C4   | 6.04  | 1.43        | 1.38     |
| 8   | CB    | 2288 | A    | N1-C2   | -6.02 | 1.28        | 1.34     |
| 33  | BA    | 765  | G    | N9-C4   | 6.00  | 1.42        | 1.38     |
| 8   | CB    | 1440 | U    | C1'-N1  | 5.92  | 1.57        | 1.48     |
| 8   | CB    | 794  | A    | C3'-O3' | 5.82  | 1.50        | 1.42     |
| 8   | CB    | 141  | G    | C3'-O3' | 5.78  | 1.50        | 1.42     |
| 8   | AB    | 2288 | A    | C2-N3   | -5.73 | 1.28        | 1.33     |
| 8   | CB    | 2288 | A    | C2-N3   | -5.71 | 1.28        | 1.33     |
| 33  | DA    | 806  | C    | C1'-N1  | 5.70  | 1.57        | 1.48     |
| 33  | BA    | 603  | U    | C1'-N1  | 5.69  | 1.57        | 1.48     |
| 7   | CA    | 95   | U    | C1'-N1  | 5.67  | 1.57        | 1.48     |
| 8   | AB    | 2288 | A    | C5-C4   | 5.61  | 1.42        | 1.38     |
| 8   | CB    | 2071 | A    | C3'-O3' | 5.59  | 1.50        | 1.42     |
| 8   | CB    | 2687 | U    | C1'-N1  | 5.58  | 1.57        | 1.48     |

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| Mol | Chain | Res  | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 38  | BF    | 100  | SER  | C-N     | -5.50 | 1.23        | 1.34     |
| 45  | DM    | 113  | LYS  | C-N     | -5.50 | 1.23        | 1.34     |
| 38  | DF    | 100  | SER  | C-N     | -5.46 | 1.23        | 1.34     |
| 8   | CB    | 1831 | G    | N9-C4   | 5.43  | 1.42        | 1.38     |
| 7   | AA    | 36   | C    | C3'-O3' | 5.29  | 1.49        | 1.42     |
| 51  | BS    | 80   | ARG  | C-N     | -5.27 | 1.23        | 1.33     |
| 33  | BA    | 717  | U    | C1'-N1  | 5.26  | 1.56        | 1.48     |
| 8   | CB    | 641  | U    | C3'-O3' | 5.25  | 1.49        | 1.42     |
| 8   | AB    | 646  | U    | C1'-N1  | 5.24  | 1.56        | 1.48     |
| 42  | BJ    | 102  | LEU  | C-N     | -5.24 | 1.23        | 1.33     |
| 51  | DS    | 80   | ARG  | C-N     | -5.23 | 1.23        | 1.33     |
| 7   | AA    | 95   | U    | C1'-N1  | 5.23  | 1.56        | 1.48     |
| 42  | DJ    | 102  | LEU  | C-N     | -5.19 | 1.23        | 1.33     |
| 8   | AB    | 2687 | U    | C1'-N1  | 5.17  | 1.56        | 1.48     |
| 8   | CB    | 380  | G    | C3'-O3' | -5.12 | 1.34        | 1.42     |
| 8   | AB    | 223  | A    | N9-C4   | 5.09  | 1.41        | 1.37     |
| 8   | CB    | 646  | U    | C1'-N1  | 5.07  | 1.56        | 1.48     |
| 8   | CB    | 1982 | U    | C3'-O3' | -5.07 | 1.35        | 1.42     |
| 8   | CB    | 2288 | A    | C5-C6   | 5.05  | 1.45        | 1.41     |
| 33  | BA    | 1474 | U    | C1'-N1  | 5.04  | 1.56        | 1.48     |

All (3358) bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms       | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 8   | AB    | 2288 | A    | C2-N3-C4    | -70.19 | 75.50       | 110.60   |
| 8   | CB    | 2288 | A    | C2-N3-C4    | -69.49 | 75.85       | 110.60   |
| 8   | CB    | 2288 | A    | N1-C2-N3    | 59.84  | 159.22      | 129.30   |
| 8   | AB    | 2288 | A    | C6-N1-C2    | -58.83 | 83.30       | 118.60   |
| 8   | AB    | 2288 | A    | N1-C2-N3    | 58.75  | 158.67      | 129.30   |
| 8   | CB    | 2288 | A    | C6-N1-C2    | -58.14 | 83.72       | 118.60   |
| 33  | DA    | 1529 | G    | C1'-O4'-C4' | -18.16 | 95.37       | 109.90   |
| 8   | AB    | 458  | G    | C1'-O4'-C4' | -14.23 | 98.51       | 109.90   |
| 8   | CB    | 1996 | C    | C1'-O4'-C4' | -14.20 | 98.54       | 109.90   |
| 8   | CB    | 196  | A    | C1'-O4'-C4' | -14.15 | 98.58       | 109.90   |
| 8   | CB    | 265  | A    | C1'-O4'-C4' | -14.04 | 98.67       | 109.90   |
| 8   | AB    | 1996 | C    | C1'-O4'-C4' | -13.99 | 98.71       | 109.90   |
| 8   | CB    | 458  | G    | C1'-O4'-C4' | -13.75 | 98.90       | 109.90   |
| 8   | AB    | 196  | A    | C1'-O4'-C4' | -13.47 | 99.12       | 109.90   |
| 8   | CB    | 2597 | G    | O4'-C1'-N9  | -13.37 | 97.50       | 108.20   |
| 8   | CB    | 301  | G    | P-O3'-C3'   | 13.07  | 135.38      | 119.70   |
| 8   | AB    | 265  | A    | C1'-O4'-C4' | -13.04 | 99.47       | 109.90   |
| 8   | AB    | 2832 | U    | C1'-O4'-C4' | -12.88 | 99.60       | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 33  | BA    | 1529 | G    | C1'-O4'-C4' | -12.81 | 99.66       | 109.90   |
| 33  | DA    | 765  | G    | N3-C4-C5    | -12.69 | 122.26      | 128.60   |
| 7   | AA    | 47   | C    | C3'-C2'-C1' | -12.67 | 91.36       | 101.50   |
| 8   | CB    | 2453 | A    | C4'-C3'-C2' | -12.61 | 89.99       | 102.60   |
| 8   | CB    | 302  | C    | C1'-O4'-C4' | -12.53 | 99.88       | 109.90   |
| 33  | BA    | 563  | A    | C1'-O4'-C4' | -12.33 | 100.04      | 109.90   |
| 8   | CB    | 2288 | A    | C4-C5-C6    | 12.32  | 123.16      | 117.00   |
| 33  | BA    | 779  | C    | P-O3'-C3'   | -12.32 | 104.92      | 119.70   |
| 8   | AB    | 2453 | A    | C4'-C3'-C2' | -12.19 | 90.41       | 102.60   |
| 8   | AB    | 2288 | A    | C4-C5-C6    | 11.99  | 122.99      | 117.00   |
| 8   | CB    | 2741 | A    | P-O3'-C3'   | -11.93 | 105.38      | 119.70   |
| 33  | BA    | 765  | G    | O4'-C1'-N9  | 11.87  | 117.70      | 108.20   |
| 8   | AB    | 752  | A    | C3'-C2'-C1' | -11.83 | 92.03       | 101.50   |
| 7   | CA    | 87   | U    | O4'-C1'-N1  | 11.82  | 117.66      | 108.20   |
| 8   | AB    | 1204 | A    | C3'-C2'-C1' | -11.80 | 92.06       | 101.50   |
| 8   | AB    | 323  | C    | C3'-C2'-C1' | -11.66 | 92.17       | 101.50   |
| 7   | AA    | 87   | U    | O4'-C1'-N1  | 11.56  | 117.45      | 108.20   |
| 8   | CB    | 1204 | A    | C3'-C2'-C1' | -11.55 | 92.26       | 101.50   |
| 33  | BA    | 306  | A    | O4'-C1'-N9  | 11.54  | 117.44      | 108.20   |
| 8   | CB    | 974  | G    | C3'-C2'-C1' | -11.54 | 92.26       | 101.50   |
| 8   | AB    | 125  | A    | C1'-O4'-C4' | -11.50 | 100.70      | 109.90   |
| 33  | BA    | 809  | G    | C1'-O4'-C4' | -11.45 | 100.74      | 109.90   |
| 33  | DA    | 1529 | G    | O4'-C1'-N9  | 11.38  | 117.30      | 108.20   |
| 8   | CB    | 2458 | G    | C1'-O4'-C4' | -11.34 | 100.83      | 109.90   |
| 33  | DA    | 1470 | U    | P-O3'-C3'   | -11.33 | 106.10      | 119.70   |
| 33  | DA    | 1201 | A    | P-O3'-C3'   | 11.30  | 133.25      | 119.70   |
| 8   | CB    | 2832 | U    | C1'-O4'-C4' | -11.28 | 100.88      | 109.90   |
| 8   | CB    | 1699 | G    | C3'-C2'-C1' | -11.27 | 92.48       | 101.50   |
| 8   | AB    | 1119 | U    | P-O3'-C3'   | -11.24 | 106.21      | 119.70   |
| 33  | DA    | 774  | G    | C3'-C2'-C1' | -11.22 | 92.53       | 101.50   |
| 33  | BA    | 511  | C    | C1'-O4'-C4' | -11.16 | 100.97      | 109.90   |
| 8   | AB    | 974  | G    | C3'-C2'-C1' | -11.13 | 92.60       | 101.50   |
| 8   | AB    | 2030 | A    | C3'-C2'-C1' | -11.11 | 92.61       | 101.50   |
| 8   | AB    | 2458 | G    | O4'-C1'-N9  | 11.09  | 117.07      | 108.20   |
| 8   | CB    | 2092 | U    | O4'-C1'-N1  | 11.07  | 117.06      | 108.20   |
| 8   | CB    | 1515 | A    | C1'-O4'-C4' | -11.04 | 101.07      | 109.90   |
| 33  | BA    | 1101 | A    | C1'-O4'-C4' | -11.03 | 101.08      | 109.90   |
| 33  | BA    | 670  | G    | C3'-C2'-C1' | -11.03 | 92.68       | 101.50   |
| 8   | AB    | 2458 | G    | C1'-O4'-C4' | -11.02 | 101.08      | 109.90   |
| 8   | CB    | 204  | A    | C3'-C2'-C1' | -10.96 | 92.73       | 101.50   |
| 33  | DA    | 306  | A    | O4'-C1'-N9  | 10.95  | 116.96      | 108.20   |
| 8   | AB    | 265  | A    | O4'-C1'-N9  | 10.93  | 116.95      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 8   | CB    | 1973 | G    | C4'-C3'-C2' | -10.87 | 91.73       | 102.60   |
| 8   | AB    | 1973 | G    | C4'-C3'-C2' | -10.82 | 91.78       | 102.60   |
| 8   | CB    | 974  | G    | C1'-O4'-C4' | -10.79 | 101.26      | 109.90   |
| 8   | AB    | 204  | A    | C3'-C2'-C1' | -10.71 | 92.93       | 101.50   |
| 8   | AB    | 974  | G    | C1'-O4'-C4' | -10.62 | 101.41      | 109.90   |
| 8   | CB    | 752  | A    | C3'-C2'-C1' | -10.61 | 93.01       | 101.50   |
| 8   | AB    | 2211 | A    | C1'-O4'-C4' | -10.60 | 101.42      | 109.90   |
| 8   | CB    | 2030 | A    | C3'-C2'-C1' | -10.52 | 93.09       | 101.50   |
| 33  | BA    | 646  | G    | C3'-C2'-C1' | -10.50 | 93.10       | 101.50   |
| 8   | CB    | 2211 | A    | C1'-O4'-C4' | -10.46 | 101.53      | 109.90   |
| 8   | CB    | 1365 | A    | P-O3'-C3'   | -10.43 | 107.18      | 119.70   |
| 33  | BA    | 863  | U    | C4'-C3'-C2' | -10.39 | 92.21       | 102.60   |
| 8   | AB    | 1515 | A    | C1'-O4'-C4' | -10.38 | 101.59      | 109.90   |
| 8   | CB    | 2458 | G    | O4'-C1'-N9  | 10.38  | 116.50      | 108.20   |
| 8   | AB    | 2597 | G    | O4'-C1'-N9  | -10.37 | 99.91       | 108.20   |
| 8   | AB    | 2596 | U    | P-O3'-C3'   | -10.36 | 107.27      | 119.70   |
| 8   | CB    | 1691 | C    | C4'-C3'-C2' | -10.36 | 92.24       | 102.60   |
| 33  | BA    | 461  | A    | C1'-O4'-C4' | -10.35 | 101.62      | 109.90   |
| 33  | DA    | 765  | G    | N3-C4-N9    | 10.31  | 132.19      | 126.00   |
| 8   | CB    | 2683 | C    | P-O3'-C3'   | -10.29 | 107.35      | 119.70   |
| 8   | CB    | 583  | G    | P-O3'-C3'   | -10.27 | 107.38      | 119.70   |
| 33  | DA    | 1441 | A    | O4'-C1'-N9  | 10.27  | 116.41      | 108.20   |
| 33  | BA    | 1181 | G    | C1'-O4'-C4' | -10.23 | 101.72      | 109.90   |
| 8   | CB    | 1699 | G    | O4'-C1'-N9  | 10.21  | 116.37      | 108.20   |
| 8   | CB    | 250  | G    | C4'-C3'-C2' | -10.20 | 92.40       | 102.60   |
| 8   | CB    | 2596 | U    | P-O3'-C3'   | -10.11 | 107.57      | 119.70   |
| 8   | AB    | 1699 | G    | C3'-C2'-C1' | -10.08 | 93.43       | 101.50   |
| 33  | BA    | 576  | C    | C1'-O4'-C4' | -10.07 | 101.84      | 109.90   |
| 8   | AB    | 539  | G    | P-O3'-C3'   | -10.05 | 107.64      | 119.70   |
| 8   | CB    | 2607 | G    | O4'-C1'-N9  | -10.04 | 100.17      | 108.20   |
| 33  | DA    | 1466 | C    | P-O3'-C3'   | -9.97  | 107.74      | 119.70   |
| 33  | BA    | 906  | A    | C3'-C2'-C1' | -9.96  | 93.53       | 101.50   |
| 8   | CB    | 322  | A    | O4'-C1'-N9  | -9.95  | 100.24      | 108.20   |
| 33  | BA    | 350  | G    | C8-N9-C4    | -9.94  | 102.42      | 106.40   |
| 33  | DA    | 434  | U    | O4'-C1'-N1  | 9.92   | 116.13      | 108.20   |
| 8   | CB    | 321  | U    | C1'-O4'-C4' | -9.91  | 101.97      | 109.90   |
| 8   | AB    | 876  | C    | C3'-C2'-C1' | -9.90  | 93.58       | 101.50   |
| 8   | CB    | 62   | U    | C1'-O4'-C4' | -9.87  | 102.00      | 109.90   |
| 33  | DA    | 7    | A    | C1'-O4'-C4' | -9.85  | 102.02      | 109.90   |
| 33  | DA    | 805  | C    | O4'-C1'-N1  | -9.83  | 100.34      | 108.20   |
| 33  | DA    | 701  | U    | C3'-C2'-C1' | -9.80  | 93.66       | 101.50   |
| 33  | DA    | 1301 | U    | P-O3'-C3'   | 9.77   | 131.42      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 803  | G    | P-O3'-C3'   | 9.74  | 131.39      | 119.70   |
| 33  | DA    | 1181 | G    | O4'-C1'-N9  | 9.74  | 115.99      | 108.20   |
| 33  | DA    | 615  | G    | C1'-O4'-C4' | -9.74 | 102.11      | 109.90   |
| 8   | AB    | 1691 | C    | C4'-C3'-C2' | -9.73 | 92.87       | 102.60   |
| 33  | DA    | 499  | A    | C3'-C2'-C1' | -9.73 | 93.72       | 101.50   |
| 33  | DA    | 605  | U    | O4'-C1'-N1  | 9.69  | 115.95      | 108.20   |
| 8   | CB    | 1566 | A    | O4'-C1'-N9  | -9.69 | 100.45      | 108.20   |
| 33  | BA    | 544  | G    | C1'-O4'-C4' | -9.67 | 102.17      | 109.90   |
| 8   | CB    | 205  | G    | C3'-C2'-C1' | -9.66 | 93.77       | 101.50   |
| 33  | DA    | 401  | C    | C4'-C3'-C2' | -9.65 | 92.95       | 102.60   |
| 33  | DA    | 753  | A    | C1'-O4'-C4' | -9.65 | 102.18      | 109.90   |
| 8   | CB    | 126  | A    | C1'-O4'-C4' | -9.64 | 102.19      | 109.90   |
| 8   | AB    | 774  | G    | C1'-O4'-C4' | -9.59 | 102.23      | 109.90   |
| 33  | DA    | 547  | A    | C1'-O4'-C4' | -9.58 | 102.24      | 109.90   |
| 8   | AB    | 247  | G    | P-O3'-C3'   | 9.56  | 131.17      | 119.70   |
| 8   | CB    | 2441 | U    | C4'-C3'-C2' | -9.55 | 93.05       | 102.60   |
| 33  | DA    | 574  | A    | O4'-C1'-N9  | -9.52 | 100.58      | 108.20   |
| 8   | CB    | 2872 | A    | O4'-C1'-N9  | 9.52  | 115.81      | 108.20   |
| 33  | DA    | 311  | C    | C4'-C3'-C2' | -9.49 | 93.11       | 102.60   |
| 33  | DA    | 328  | C    | P-O3'-C3'   | 9.48  | 131.07      | 119.70   |
| 7   | CA    | 42   | C    | P-O3'-C3'   | -9.46 | 108.35      | 119.70   |
| 8   | AB    | 2441 | U    | C4'-C3'-C2' | -9.46 | 93.14       | 102.60   |
| 33  | DA    | 753  | A    | C3'-C2'-C1' | -9.45 | 93.94       | 101.50   |
| 33  | DA    | 765  | G    | O4'-C1'-N9  | 9.44  | 115.75      | 108.20   |
| 8   | CB    | 205  | G    | C1'-O4'-C4' | -9.41 | 102.37      | 109.90   |
| 33  | DA    | 1345 | U    | C3'-C2'-C1' | -9.41 | 93.97       | 101.50   |
| 8   | CB    | 974  | G    | C6-C5-N7    | -9.37 | 124.78      | 130.40   |
| 33  | BA    | 1346 | A    | C3'-C2'-C1' | -9.30 | 94.06       | 101.50   |
| 33  | DA    | 1139 | G    | C4'-C3'-C2' | -9.30 | 93.30       | 102.60   |
| 8   | AB    | 1382 | G    | C1'-O4'-C4' | -9.27 | 102.48      | 109.90   |
| 33  | BA    | 40   | C    | C1'-O4'-C4' | -9.25 | 102.50      | 109.90   |
| 8   | CB    | 2718 | G    | C4'-C3'-C2' | -9.25 | 93.35       | 102.60   |
| 8   | CB    | 187  | G    | C3'-C2'-C1' | -9.23 | 94.12       | 101.50   |
| 8   | CB    | 1382 | G    | C1'-O4'-C4' | -9.22 | 102.53      | 109.90   |
| 8   | AB    | 954  | G    | P-O3'-C3'   | -9.22 | 108.64      | 119.70   |
| 33  | DA    | 966  | G    | O4'-C1'-N9  | 9.21  | 115.57      | 108.20   |
| 8   | CB    | 1996 | C    | C3'-C2'-C1' | -9.21 | 94.13       | 101.50   |
| 8   | AB    | 1699 | G    | O4'-C1'-N9  | 9.21  | 115.57      | 108.20   |
| 33  | DA    | 806  | C    | C6-N1-C2    | -9.20 | 116.62      | 120.30   |
| 33  | BA    | 422  | C    | C4'-C3'-C2' | -9.20 | 93.40       | 102.60   |
| 8   | AB    | 95   | A    | C4'-C3'-C2' | -9.20 | 93.41       | 102.60   |
| 8   | AB    | 1382 | G    | C4'-C3'-C2' | -9.19 | 93.41       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 1695 | G    | C1'-O4'-C4' | -9.19 | 102.55      | 109.90   |
| 8   | AB    | 1119 | U    | C3'-C2'-C1' | -9.19 | 94.15       | 101.50   |
| 8   | CB    | 2614 | A    | C1'-O4'-C4' | -9.18 | 102.56      | 109.90   |
| 33  | DA    | 792  | A    | O4'-C1'-N9  | 9.13  | 115.51      | 108.20   |
| 33  | DA    | 807  | A    | O4'-C1'-N9  | -9.11 | 100.91      | 108.20   |
| 8   | AB    | 1824 | G    | O4'-C1'-N9  | 9.08  | 115.47      | 108.20   |
| 33  | DA    | 870  | U    | C4'-C3'-C2' | -9.07 | 93.53       | 102.60   |
| 33  | DA    | 1181 | G    | C1'-O4'-C4' | -9.07 | 102.64      | 109.90   |
| 33  | DA    | 1250 | A    | C4'-C3'-C2' | -9.07 | 93.53       | 102.60   |
| 8   | CB    | 531  | C    | C3'-C2'-C1' | -9.05 | 94.26       | 101.50   |
| 8   | AB    | 444  | C    | C4'-C3'-C2' | -9.04 | 93.56       | 102.60   |
| 33  | DA    | 908  | A    | P-O3'-C3'   | -9.03 | 108.87      | 119.70   |
| 8   | CB    | 954  | G    | P-O3'-C3'   | -9.01 | 108.89      | 119.70   |
| 8   | CB    | 793  | A    | O4'-C1'-N9  | -8.99 | 101.01      | 108.20   |
| 8   | AB    | 62   | U    | C1'-O4'-C4' | -8.99 | 102.71      | 109.90   |
| 8   | AB    | 1937 | A    | C4'-C3'-C2' | -8.97 | 93.63       | 102.60   |
| 8   | AB    | 2732 | G    | O4'-C1'-N9  | 8.97  | 115.37      | 108.20   |
| 8   | AB    | 2751 | G    | C3'-C2'-C1' | -8.94 | 94.35       | 101.50   |
| 33  | BA    | 765  | G    | N3-C4-C5    | -8.93 | 124.14      | 128.60   |
| 8   | CB    | 794  | A    | P-O3'-C3'   | 8.93  | 130.42      | 119.70   |
| 33  | DA    | 916  | U    | C4'-C3'-C2' | -8.91 | 93.69       | 102.60   |
| 8   | AB    | 439  | A    | C3'-C2'-C1' | -8.89 | 94.39       | 101.50   |
| 8   | AB    | 346  | A    | C4'-C3'-C2' | -8.88 | 93.72       | 102.60   |
| 8   | CB    | 265  | A    | C4'-C3'-C2' | -8.88 | 93.72       | 102.60   |
| 33  | DA    | 576  | C    | C1'-O4'-C4' | -8.88 | 102.79      | 109.90   |
| 8   | AB    | 800  | A    | C3'-C2'-C1' | -8.87 | 94.40       | 101.50   |
| 8   | CB    | 247  | G    | P-O3'-C3'   | 8.86  | 130.34      | 119.70   |
| 33  | DA    | 1522 | U    | P-O3'-C3'   | -8.84 | 109.09      | 119.70   |
| 8   | CB    | 2675 | A    | P-O3'-C3'   | -8.83 | 109.11      | 119.70   |
| 8   | AB    | 222  | A    | C1'-O4'-C4' | -8.82 | 102.84      | 109.90   |
| 8   | AB    | 1699 | G    | C1'-O4'-C4' | -8.82 | 102.85      | 109.90   |
| 8   | AB    | 381  | G    | C4'-C3'-C2' | -8.80 | 93.80       | 102.60   |
| 8   | CB    | 1552 | A    | C3'-C2'-C1' | -8.79 | 94.46       | 101.50   |
| 8   | CB    | 561  | G    | N1-C6-O6    | 8.79  | 125.17      | 119.90   |
| 8   | CB    | 1770 | G    | C4'-C3'-C2' | -8.78 | 93.82       | 102.60   |
| 8   | AB    | 2614 | A    | C1'-O4'-C4' | -8.77 | 102.88      | 109.90   |
| 7   | CA    | 32   | U    | C1'-O4'-C4' | -8.77 | 102.88      | 109.90   |
| 8   | AB    | 583  | G    | P-O3'-C3'   | -8.76 | 109.19      | 119.70   |
| 33  | DA    | 527  | G    | N9-C1'-C2'  | -8.76 | 102.36      | 112.00   |
| 8   | CB    | 2012 | G    | P-O3'-C3'   | -8.76 | 109.19      | 119.70   |
| 7   | AA    | 15   | A    | C3'-C2'-C1' | -8.75 | 94.50       | 101.50   |
| 33  | DA    | 944  | G    | C1'-O4'-C4' | -8.75 | 102.90      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 1488 | G    | C4'-C3'-C2' | -8.73 | 93.87       | 102.60   |
| 7   | CA    | 104  | A    | P-O3'-C3'   | 8.73  | 130.17      | 119.70   |
| 8   | CB    | 974  | G    | C4-C5-N7    | 8.73  | 114.29      | 110.80   |
| 8   | AB    | 126  | A    | C1'-O4'-C4' | -8.72 | 102.92      | 109.90   |
| 8   | CB    | 775  | G    | C4'-C3'-C2' | -8.71 | 93.89       | 102.60   |
| 33  | DA    | 1422 | G    | C4'-C3'-C2' | -8.71 | 93.89       | 102.60   |
| 8   | AB    | 1124 | G    | P-O3'-C3'   | -8.70 | 109.26      | 119.70   |
| 8   | CB    | 2765 | A    | C3'-C2'-C1' | 8.70  | 108.46      | 101.50   |
| 8   | CB    | 1354 | A    | P-O3'-C3'   | -8.68 | 109.29      | 119.70   |
| 33  | DA    | 451  | A    | N9-C1'-C2'  | 8.68  | 125.28      | 114.00   |
| 33  | BA    | 1239 | A    | C1'-O4'-C4' | -8.67 | 102.96      | 109.90   |
| 33  | DA    | 572  | A    | O4'-C1'-N9  | -8.67 | 101.26      | 108.20   |
| 8   | CB    | 489  | G    | C3'-C2'-C1' | -8.67 | 94.57       | 101.50   |
| 8   | CB    | 2238 | G    | C1'-O4'-C4' | -8.66 | 102.97      | 109.90   |
| 8   | CB    | 646  | U    | O4'-C1'-N1  | 8.65  | 115.12      | 108.20   |
| 33  | DA    | 238  | A    | P-O3'-C3'   | 8.65  | 130.08      | 119.70   |
| 8   | AB    | 1365 | A    | P-O3'-C3'   | -8.65 | 109.32      | 119.70   |
| 8   | AB    | 795  | C    | C3'-C2'-C1' | -8.65 | 94.58       | 101.50   |
| 8   | CB    | 553  | G    | C4'-C3'-C2' | -8.64 | 93.96       | 102.60   |
| 8   | AB    | 1770 | G    | C4'-C3'-C2' | -8.64 | 93.96       | 102.60   |
| 33  | DA    | 456  | A    | C3'-C2'-C1' | -8.64 | 94.59       | 101.50   |
| 33  | DA    | 831  | A    | C3'-C2'-C1' | -8.63 | 94.59       | 101.50   |
| 8   | AB    | 2075 | U    | O4'-C1'-N1  | -8.60 | 101.32      | 108.20   |
| 33  | BA    | 430  | A    | C1'-O4'-C4' | -8.60 | 103.02      | 109.90   |
| 8   | AB    | 187  | G    | C3'-C2'-C1' | -8.60 | 94.62       | 101.50   |
| 33  | DA    | 1521 | C    | C4'-C3'-C2' | -8.60 | 94.00       | 102.60   |
| 8   | CB    | 974  | G    | N1-C6-O6    | 8.59  | 125.06      | 119.90   |
| 8   | CB    | 1301 | A    | C1'-O4'-C4' | -8.59 | 103.02      | 109.90   |
| 8   | AB    | 2238 | G    | C1'-O4'-C4' | -8.59 | 103.03      | 109.90   |
| 33  | DA    | 765  | G    | C2-N3-C4    | 8.59  | 116.19      | 111.90   |
| 8   | AB    | 1301 | A    | C1'-O4'-C4' | -8.59 | 103.03      | 109.90   |
| 33  | DA    | 559  | A    | O4'-C1'-N9  | 8.58  | 115.07      | 108.20   |
| 8   | CB    | 1162 | G    | C3'-C2'-C1' | -8.57 | 94.64       | 101.50   |
| 8   | AB    | 2683 | C    | P-O3'-C3'   | -8.57 | 109.42      | 119.70   |
| 8   | AB    | 250  | G    | C1'-O4'-C4' | -8.56 | 103.05      | 109.90   |
| 33  | DA    | 591  | U    | C4'-C3'-C2' | -8.55 | 94.05       | 102.60   |
| 8   | CB    | 2592 | G    | C3'-C2'-C1' | -8.54 | 94.67       | 101.50   |
| 8   | CB    | 2406 | A    | C1'-O4'-C4' | -8.54 | 103.07      | 109.90   |
| 8   | CB    | 225  | C    | O4'-C1'-N1  | 8.53  | 115.03      | 108.20   |
| 33  | DA    | 764  | C    | P-O3'-C3'   | -8.53 | 109.47      | 119.70   |
| 33  | BA    | 773  | G    | C4'-C3'-C2' | -8.53 | 94.07       | 102.60   |
| 33  | DA    | 1425 | U    | N1-C1'-C2'  | -8.52 | 102.63      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2265 | U    | O4'-C1'-N1  | -8.52 | 101.39      | 108.20   |
| 8   | CB    | 101  | A    | C1'-O4'-C4' | -8.52 | 103.08      | 109.90   |
| 8   | CB    | 247  | G    | C4'-C3'-C2' | -8.52 | 94.08       | 102.60   |
| 8   | AB    | 1296 | G    | C3'-C2'-C1' | -8.51 | 94.69       | 101.50   |
| 8   | CB    | 1382 | G    | C4'-C3'-C2' | -8.51 | 94.09       | 102.60   |
| 8   | CB    | 587  | C    | N1-C2-O2    | 8.50  | 124.00      | 118.90   |
| 8   | AB    | 2406 | A    | C1'-O4'-C4' | -8.49 | 103.11      | 109.90   |
| 33  | DA    | 792  | A    | O4'-C1'-C2' | -8.49 | 97.31       | 105.80   |
| 8   | AB    | 2581 | G    | P-O3'-C3'   | 8.46  | 129.86      | 119.70   |
| 8   | CB    | 2106 | U    | P-O3'-C3'   | 8.46  | 129.85      | 119.70   |
| 33  | BA    | 890  | G    | O4'-C1'-N9  | 8.46  | 114.97      | 108.20   |
| 8   | AB    | 1695 | G    | C1'-O4'-C4' | -8.45 | 103.14      | 109.90   |
| 33  | DA    | 1385 | G    | C4'-C3'-C2' | -8.45 | 94.15       | 102.60   |
| 33  | BA    | 71   | A    | C4'-C3'-C2' | -8.45 | 94.15       | 102.60   |
| 33  | DA    | 1528 | U    | O4'-C1'-N1  | -8.44 | 101.45      | 108.20   |
| 8   | CB    | 949  | G    | P-O3'-C3'   | -8.44 | 109.58      | 119.70   |
| 33  | BA    | 1501 | C    | C4'-C3'-C2' | -8.42 | 94.18       | 102.60   |
| 8   | AB    | 2032 | G    | O4'-C1'-N9  | -8.41 | 101.47      | 108.20   |
| 8   | CB    | 659  | G    | P-O3'-C3'   | -8.41 | 109.61      | 119.70   |
| 8   | AB    | 2718 | G    | C4'-C3'-C2' | -8.40 | 94.20       | 102.60   |
| 8   | CB    | 323  | C    | O4'-C1'-N1  | 8.40  | 114.92      | 108.20   |
| 8   | AB    | 2592 | G    | C3'-C2'-C1' | -8.40 | 94.78       | 101.50   |
| 33  | DA    | 669  | G    | N1-C6-O6    | 8.40  | 124.94      | 119.90   |
| 8   | AB    | 1997 | C    | C1'-O4'-C4' | -8.39 | 103.19      | 109.90   |
| 33  | DA    | 575  | G    | C4'-C3'-C2' | -8.39 | 94.21       | 102.60   |
| 33  | BA    | 765  | G    | C4'-C3'-C2' | -8.39 | 94.21       | 102.60   |
| 8   | AB    | 1980 | G    | C1'-O4'-C4' | -8.38 | 103.19      | 109.90   |
| 8   | CB    | 527  | C    | O4'-C1'-N1  | 8.38  | 114.90      | 108.20   |
| 8   | CB    | 2071 | A    | P-O3'-C3'   | 8.38  | 129.75      | 119.70   |
| 8   | AB    | 1058 | U    | C3'-C2'-C1' | -8.38 | 94.80       | 101.50   |
| 8   | AB    | 2732 | G    | C1'-O4'-C4' | -8.37 | 103.20      | 109.90   |
| 33  | BA    | 765  | G    | C8-N9-C4    | -8.37 | 103.05      | 106.40   |
| 8   | CB    | 627  | A    | C4'-C3'-C2' | -8.36 | 94.24       | 102.60   |
| 33  | DA    | 736  | C    | P-O3'-C3'   | -8.36 | 109.67      | 119.70   |
| 8   | AB    | 1797 | G    | N9-C1'-C2'  | -8.35 | 102.82      | 112.00   |
| 33  | DA    | 430  | A    | N9-C1'-C2'  | -8.33 | 102.83      | 112.00   |
| 33  | BA    | 1151 | A    | O4'-C1'-N9  | 8.33  | 114.87      | 108.20   |
| 33  | DA    | 71   | A    | C4'-C3'-C2' | -8.33 | 94.27       | 102.60   |
| 8   | AB    | 489  | G    | C3'-C2'-C1' | -8.32 | 94.85       | 101.50   |
| 8   | CB    | 1027 | A    | O4'-C1'-N9  | -8.31 | 101.55      | 108.20   |
| 8   | CB    | 1130 | U    | C4'-C3'-C2' | -8.31 | 94.29       | 102.60   |
| 8   | AB    | 205  | G    | C1'-O4'-C4' | -8.30 | 103.26      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 646  | U    | O4'-C1'-N1  | 8.30  | 114.84      | 108.20   |
| 8   | CB    | 2088 | A    | C4'-C3'-C2' | -8.30 | 94.30       | 102.60   |
| 8   | AB    | 1566 | A    | O4'-C1'-N9  | -8.29 | 101.57      | 108.20   |
| 33  | DA    | 765  | G    | C4-N9-C1'   | 8.29  | 137.27      | 126.50   |
| 8   | AB    | 2285 | C    | P-O3'-C3'   | -8.28 | 109.77      | 119.70   |
| 33  | BA    | 353  | A    | O4'-C1'-N9  | 8.27  | 114.82      | 108.20   |
| 33  | DA    | 1101 | A    | C3'-C2'-C1' | -8.27 | 94.88       | 101.50   |
| 33  | DA    | 666  | G    | C4'-C3'-C2' | -8.26 | 94.34       | 102.60   |
| 8   | CB    | 1699 | G    | C1'-O4'-C4' | -8.26 | 103.29      | 109.90   |
| 33  | DA    | 1478 | U    | P-O3'-C3'   | -8.26 | 109.79      | 119.70   |
| 8   | AB    | 655  | A    | C3'-C2'-C1' | -8.25 | 94.90       | 101.50   |
| 8   | AB    | 809  | G    | C4'-C3'-C2' | -8.25 | 94.35       | 102.60   |
| 8   | AB    | 2872 | A    | O4'-C1'-N9  | 8.24  | 114.79      | 108.20   |
| 33  | DA    | 40   | C    | C1'-O4'-C4' | -8.22 | 103.33      | 109.90   |
| 8   | CB    | 655  | A    | C3'-C2'-C1' | -8.21 | 94.93       | 101.50   |
| 8   | CB    | 2741 | A    | C1'-O4'-C4' | -8.21 | 103.33      | 109.90   |
| 8   | CB    | 250  | G    | C1'-O4'-C4' | -8.21 | 103.33      | 109.90   |
| 33  | BA    | 897  | C    | C1'-O4'-C4' | -8.21 | 103.34      | 109.90   |
| 8   | CB    | 2212 | A    | C4'-C3'-C2' | -8.20 | 94.40       | 102.60   |
| 8   | AB    | 573  | U    | C1'-O4'-C4' | -8.20 | 103.34      | 109.90   |
| 8   | CB    | 1027 | A    | N9-C1'-C2'  | -8.20 | 102.98      | 112.00   |
| 8   | AB    | 1631 | G    | C3'-C2'-C1' | -8.19 | 94.94       | 101.50   |
| 33  | DA    | 579  | A    | C8-N9-C4    | -8.19 | 102.53      | 105.80   |
| 8   | CB    | 2157 | G    | C1'-O4'-C4' | -8.18 | 103.36      | 109.90   |
| 8   | CB    | 439  | A    | C3'-C2'-C1' | -8.16 | 94.97       | 101.50   |
| 33  | DA    | 890  | G    | C1'-O4'-C4' | -8.16 | 103.37      | 109.90   |
| 8   | AB    | 864  | G    | C3'-C2'-C1' | -8.16 | 94.97       | 101.50   |
| 33  | DA    | 350  | G    | C8-N9-C4    | -8.16 | 103.14      | 106.40   |
| 8   | CB    | 1631 | G    | C3'-C2'-C1' | -8.16 | 94.97       | 101.50   |
| 33  | DA    | 484  | G    | P-O3'-C3'   | 8.15  | 129.48      | 119.70   |
| 8   | AB    | 177  | G    | C1'-O4'-C4' | -8.14 | 103.39      | 109.90   |
| 8   | CB    | 1378 | A    | O4'-C1'-N9  | 8.14  | 114.71      | 108.20   |
| 8   | CB    | 2607 | G    | C4'-C3'-C2' | -8.14 | 94.46       | 102.60   |
| 8   | CB    | 2576 | G    | N3-C4-C5    | -8.13 | 124.53      | 128.60   |
| 8   | AB    | 949  | G    | P-O3'-C3'   | -8.13 | 109.95      | 119.70   |
| 8   | CB    | 2224 | G    | O4'-C1'-N9  | -8.13 | 101.70      | 108.20   |
| 8   | AB    | 276  | U    | C1'-O4'-C4' | -8.12 | 103.40      | 109.90   |
| 33  | DA    | 1224 | U    | P-O3'-C3'   | 8.12  | 129.45      | 119.70   |
| 33  | DA    | 1359 | C    | C4'-C3'-C2' | -8.12 | 94.48       | 102.60   |
| 33  | BA    | 585  | G    | C3'-C2'-C1' | -8.12 | 95.00       | 101.50   |
| 8   | AB    | 575  | A    | C3'-C2'-C1' | 8.11  | 107.99      | 101.50   |
| 8   | CB    | 1819 | A    | C1'-O4'-C4' | -8.11 | 103.42      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 381  | G    | C4'-C3'-C2' | -8.09 | 94.51       | 102.60   |
| 33  | DA    | 527  | G    | P-O3'-C3'   | -8.09 | 109.99      | 119.70   |
| 8   | AB    | 505  | A    | N9-C1'-C2'  | -8.09 | 103.10      | 112.00   |
| 8   | CB    | 2076 | U    | C3'-C2'-C1' | -8.09 | 95.03       | 101.50   |
| 8   | AB    | 449  | A    | C4'-C3'-C2' | -8.08 | 94.52       | 102.60   |
| 8   | CB    | 1623 | G    | P-O3'-C3'   | -8.08 | 110.00      | 119.70   |
| 33  | BA    | 311  | C    | C4'-C3'-C2' | -8.08 | 94.52       | 102.60   |
| 8   | AB    | 1623 | G    | O4'-C1'-N9  | 8.07  | 114.66      | 108.20   |
| 8   | CB    | 968  | C    | C4'-C3'-C2' | -8.07 | 94.53       | 102.60   |
| 8   | CB    | 1929 | G    | C4'-C3'-C2' | -8.06 | 94.54       | 102.60   |
| 8   | CB    | 1111 | A    | C3'-C2'-C1' | -8.05 | 95.06       | 101.50   |
| 8   | CB    | 2087 | G    | C3'-C2'-C1' | -8.05 | 95.06       | 101.50   |
| 33  | DA    | 771  | G    | O4'-C1'-N9  | 8.05  | 114.64      | 108.20   |
| 8   | CB    | 2072 | C    | C4'-C3'-C2' | -8.04 | 94.56       | 102.60   |
| 8   | CB    | 547  | A    | C4'-C3'-C2' | -8.04 | 94.56       | 102.60   |
| 8   | AB    | 1130 | U    | C4'-C3'-C2' | -8.03 | 94.57       | 102.60   |
| 8   | AB    | 2030 | A    | C1'-O4'-C4' | -8.03 | 103.48      | 109.90   |
| 33  | BA    | 1338 | G    | C1'-O4'-C4' | -8.03 | 103.48      | 109.90   |
| 8   | AB    | 331  | C    | P-O3'-C3'   | 8.02  | 129.33      | 119.70   |
| 33  | BA    | 760  | G    | C3'-C2'-C1' | -8.02 | 95.08       | 101.50   |
| 8   | CB    | 534  | U    | C4'-C3'-C2' | -8.01 | 94.59       | 102.60   |
| 8   | CB    | 774  | G    | C1'-O4'-C4' | -8.01 | 103.49      | 109.90   |
| 33  | DA    | 556  | C    | C4'-C3'-C2' | -8.01 | 94.59       | 102.60   |
| 8   | CB    | 1980 | G    | C1'-O4'-C4' | -8.00 | 103.50      | 109.90   |
| 8   | CB    | 2285 | C    | P-O3'-C3'   | -7.99 | 110.11      | 119.70   |
| 8   | CB    | 1786 | A    | P-O3'-C3'   | 7.98  | 129.28      | 119.70   |
| 8   | AB    | 871  | U    | C3'-C2'-C1' | -7.98 | 95.12       | 101.50   |
| 8   | CB    | 2156 | G    | C4'-C3'-C2' | -7.98 | 94.62       | 102.60   |
| 33  | BA    | 921  | U    | O4'-C1'-N1  | -7.97 | 101.82      | 108.20   |
| 8   | AB    | 1125 | G    | P-O3'-C3'   | 7.96  | 129.25      | 119.70   |
| 7   | AA    | 51   | G    | C4'-C3'-C2' | -7.95 | 94.65       | 102.60   |
| 33  | BA    | 495  | A    | C4'-C3'-C2' | -7.95 | 94.65       | 102.60   |
| 8   | CB    | 1606 | C    | C4'-C3'-C2' | -7.95 | 94.65       | 102.60   |
| 33  | BA    | 1484 | C    | N1-C1'-C2'  | -7.94 | 103.26      | 112.00   |
| 8   | AB    | 462  | C    | C3'-C2'-C1' | -7.94 | 95.15       | 101.50   |
| 33  | BA    | 812  | G    | C4'-C3'-C2' | -7.94 | 94.66       | 102.60   |
| 33  | DA    | 701  | U    | C4'-C3'-C2' | -7.94 | 94.66       | 102.60   |
| 33  | BA    | 736  | C    | C4'-C3'-C2' | -7.93 | 94.67       | 102.60   |
| 8   | AB    | 1929 | G    | C4'-C3'-C2' | -7.93 | 94.67       | 102.60   |
| 8   | AB    | 1984 | G    | C4'-C3'-C2' | -7.92 | 94.68       | 102.60   |
| 8   | CB    | 2762 | C    | O4'-C1'-N1  | -7.92 | 101.86      | 108.20   |
| 33  | DA    | 40   | C    | O4'-C1'-N1  | 7.92  | 114.54      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 748  | G    | O4'-C1'-N9  | 7.92  | 114.54      | 108.20   |
| 33  | DA    | 292  | G    | C4'-C3'-C2' | -7.92 | 94.68       | 102.60   |
| 8   | CB    | 790  | U    | O4'-C1'-N1  | -7.92 | 101.86      | 108.20   |
| 8   | CB    | 360  | U    | O4'-C1'-N1  | 7.92  | 114.53      | 108.20   |
| 8   | AB    | 250  | G    | C4'-C3'-C2' | -7.91 | 94.69       | 102.60   |
| 33  | DA    | 1062 | U    | O4'-C1'-N1  | 7.91  | 114.53      | 108.20   |
| 33  | BA    | 328  | C    | P-O3'-C3'   | 7.91  | 129.19      | 119.70   |
| 8   | CB    | 800  | A    | C3'-C2'-C1' | -7.91 | 95.18       | 101.50   |
| 8   | AB    | 555  | G    | N9-C1'-C2'  | -7.90 | 103.31      | 112.00   |
| 8   | CB    | 2460 | U    | O4'-C1'-N1  | -7.89 | 101.89      | 108.20   |
| 8   | AB    | 2060 | A    | C3'-C2'-C1' | -7.89 | 95.19       | 101.50   |
| 33  | BA    | 914  | A    | C4'-C3'-C2' | -7.89 | 94.71       | 102.60   |
| 33  | BA    | 493  | A    | O4'-C1'-N9  | 7.89  | 114.51      | 108.20   |
| 8   | CB    | 1367 | A    | P-O3'-C3'   | -7.86 | 110.27      | 119.70   |
| 8   | CB    | 2648 | G    | O4'-C1'-N9  | -7.86 | 101.91      | 108.20   |
| 33  | BA    | 509  | A    | C4'-C3'-C2' | -7.86 | 94.74       | 102.60   |
| 33  | BA    | 1239 | A    | C3'-C2'-C1' | -7.86 | 95.22       | 101.50   |
| 8   | CB    | 222  | A    | O4'-C1'-N9  | 7.86  | 114.48      | 108.20   |
| 33  | DA    | 602  | A    | C3'-C2'-C1' | -7.85 | 95.22       | 101.50   |
| 8   | AB    | 1699 | G    | O4'-C1'-C2' | -7.85 | 97.95       | 105.80   |
| 8   | AB    | 119  | A    | C1'-O4'-C4' | -7.84 | 103.63      | 109.90   |
| 33  | BA    | 537  | G    | C3'-C2'-C1' | -7.84 | 95.23       | 101.50   |
| 8   | CB    | 408  | G    | C4'-C3'-C2' | -7.84 | 94.76       | 102.60   |
| 33  | DA    | 623  | C    | P-O3'-C3'   | -7.84 | 110.29      | 119.70   |
| 33  | BA    | 1526 | G    | C3'-C2'-C1' | -7.83 | 95.23       | 101.50   |
| 8   | CB    | 799  | G    | O4'-C1'-N9  | 7.83  | 114.46      | 108.20   |
| 8   | AB    | 408  | G    | C4'-C3'-C2' | -7.82 | 94.78       | 102.60   |
| 7   | AA    | 51   | G    | C3'-C2'-C1' | -7.82 | 95.25       | 101.50   |
| 8   | CB    | 1082 | U    | C3'-C2'-C1' | -7.82 | 95.25       | 101.50   |
| 8   | CB    | 14   | A    | O4'-C1'-N9  | -7.82 | 101.95      | 108.20   |
| 8   | CB    | 2057 | G    | O4'-C1'-N9  | -7.81 | 101.95      | 108.20   |
| 8   | AB    | 974  | G    | P-O3'-C3'   | 7.81  | 129.07      | 119.70   |
| 8   | CB    | 561  | G    | C5-C6-O6    | -7.80 | 123.92      | 128.60   |
| 33  | DA    | 894  | G    | P-O3'-C3'   | -7.80 | 110.34      | 119.70   |
| 33  | BA    | 517  | G    | O4'-C1'-N9  | 7.80  | 114.44      | 108.20   |
| 33  | DA    | 1240 | U    | C1'-O4'-C4' | -7.79 | 103.67      | 109.90   |
| 33  | DA    | 1065 | U    | P-O3'-C3'   | 7.79  | 129.04      | 119.70   |
| 8   | AB    | 1162 | G    | C3'-C2'-C1' | -7.78 | 95.28       | 101.50   |
| 8   | AB    | 2102 | G    | C3'-C2'-C1' | -7.78 | 95.28       | 101.50   |
| 8   | CB    | 2765 | A    | P-O3'-C3'   | 7.78  | 129.03      | 119.70   |
| 8   | AB    | 809  | G    | P-O3'-C3'   | 7.78  | 129.03      | 119.70   |
| 33  | BA    | 1503 | A    | C3'-C2'-C1' | -7.77 | 95.28       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 627  | A    | C4'-C3'-C2' | -7.77 | 94.83       | 102.60   |
| 33  | BA    | 238  | A    | P-O3'-C3'   | 7.77  | 129.03      | 119.70   |
| 33  | BA    | 429  | U    | C1'-O4'-C4' | -7.77 | 103.68      | 109.90   |
| 8   | AB    | 276  | U    | O4'-C1'-N1  | 7.77  | 114.41      | 108.20   |
| 8   | AB    | 872  | U    | C3'-C2'-C1' | -7.77 | 95.28       | 101.50   |
| 8   | AB    | 2108 | A    | C3'-C2'-C1' | -7.77 | 95.29       | 101.50   |
| 33  | DA    | 1435 | G    | O4'-C1'-N9  | 7.76  | 114.41      | 108.20   |
| 33  | BA    | 458  | U    | O4'-C1'-N1  | 7.76  | 114.41      | 108.20   |
| 8   | AB    | 1783 | A    | P-O3'-C3'   | -7.76 | 110.39      | 119.70   |
| 8   | AB    | 1996 | C    | C3'-C2'-C1' | -7.76 | 95.29       | 101.50   |
| 33  | DA    | 1181 | G    | C3'-C2'-C1' | -7.76 | 95.29       | 101.50   |
| 8   | AB    | 2679 | A    | O4'-C1'-N9  | -7.76 | 101.99      | 108.20   |
| 8   | CB    | 795  | C    | C3'-C2'-C1' | -7.75 | 95.30       | 101.50   |
| 8   | CB    | 2609 | U    | P-O3'-C3'   | 7.75  | 129.01      | 119.70   |
| 33  | DA    | 821  | G    | C1'-O4'-C4' | -7.74 | 103.71      | 109.90   |
| 8   | CB    | 505  | A    | N9-C1'-C2'  | -7.73 | 103.49      | 112.00   |
| 8   | AB    | 1971 | U    | C4'-C3'-C2' | -7.73 | 94.87       | 102.60   |
| 33  | BA    | 220  | G    | C4'-C3'-C2' | -7.73 | 94.87       | 102.60   |
| 8   | AB    | 2765 | A    | P-O3'-C3'   | 7.73  | 128.97      | 119.70   |
| 33  | BA    | 770  | C    | O4'-C1'-N1  | -7.72 | 102.03      | 108.20   |
| 8   | CB    | 1997 | C    | O4'-C1'-N1  | 7.72  | 114.37      | 108.20   |
| 8   | CB    | 2288 | A    | C3'-C2'-C1' | -7.72 | 95.33       | 101.50   |
| 8   | AB    | 775  | G    | C4'-C3'-C2' | -7.71 | 94.89       | 102.60   |
| 8   | AB    | 1985 | C    | C4'-C3'-C2' | -7.71 | 94.89       | 102.60   |
| 8   | CB    | 544  | C    | C1'-O4'-C4' | -7.71 | 103.73      | 109.90   |
| 8   | AB    | 1817 | G    | N3-C4-N9    | -7.71 | 121.38      | 126.00   |
| 8   | AB    | 2751 | G    | C4'-C3'-C2' | -7.70 | 94.90       | 102.60   |
| 8   | CB    | 1937 | A    | C4'-C3'-C2' | -7.70 | 94.90       | 102.60   |
| 8   | AB    | 1297 | C    | C4'-C3'-C2' | -7.70 | 94.90       | 102.60   |
| 8   | AB    | 445  | C    | C1'-O4'-C4' | -7.70 | 103.74      | 109.90   |
| 8   | CB    | 394  | C    | O4'-C1'-N1  | -7.70 | 102.04      | 108.20   |
| 8   | AB    | 2732 | G    | C3'-C2'-C1' | -7.69 | 95.34       | 101.50   |
| 33  | DA    | 765  | G    | C4'-C3'-C2' | -7.69 | 94.91       | 102.60   |
| 33  | DA    | 1157 | A    | C3'-C2'-C1' | -7.69 | 95.35       | 101.50   |
| 8   | AB    | 1204 | A    | O4'-C1'-N9  | 7.69  | 114.35      | 108.20   |
| 33  | BA    | 386  | C    | C4'-C3'-C2' | -7.69 | 94.91       | 102.60   |
| 8   | AB    | 1970 | A    | O4'-C1'-N9  | -7.68 | 102.06      | 108.20   |
| 33  | BA    | 350  | G    | N7-C8-N9    | 7.68  | 116.94      | 113.10   |
| 7   | CA    | 47   | C    | C4'-C3'-C2' | -7.67 | 94.92       | 102.60   |
| 8   | AB    | 2586 | U    | N1-C1'-C2'  | -7.67 | 103.56      | 112.00   |
| 8   | AB    | 2199 | A    | O4'-C1'-N9  | -7.67 | 102.06      | 108.20   |
| 8   | AB    | 2624 | G    | C3'-C2'-C1' | -7.67 | 95.37       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 809  | G    | P-O3'-C3'   | 7.67  | 128.90      | 119.70   |
| 8   | AB    | 205  | G    | O4'-C1'-C2' | -7.66 | 98.14       | 105.80   |
| 8   | CB    | 2690 | U    | C1'-O4'-C4' | -7.66 | 103.77      | 109.90   |
| 8   | AB    | 101  | A    | C3'-C2'-C1' | -7.66 | 95.37       | 101.50   |
| 8   | CB    | 2212 | A    | C3'-C2'-C1' | -7.65 | 95.38       | 101.50   |
| 33  | DA    | 615  | G    | O4'-C1'-N9  | 7.65  | 114.32      | 108.20   |
| 8   | AB    | 2336 | A    | P-O3'-C3'   | 7.65  | 128.88      | 119.70   |
| 8   | CB    | 1275 | A    | P-O3'-C3'   | -7.65 | 110.52      | 119.70   |
| 8   | AB    | 125  | A    | O4'-C1'-N9  | 7.65  | 114.32      | 108.20   |
| 33  | DA    | 966  | G    | C1'-O4'-C4' | -7.65 | 103.78      | 109.90   |
| 8   | CB    | 2076 | U    | C4'-C3'-C2' | -7.65 | 94.95       | 102.60   |
| 33  | DA    | 1240 | U    | O4'-C1'-N1  | 7.64  | 114.32      | 108.20   |
| 8   | CB    | 2597 | G    | N9-C1'-C2'  | 7.64  | 123.94      | 114.00   |
| 8   | AB    | 921  | C    | C4'-C3'-C2' | -7.64 | 94.96       | 102.60   |
| 8   | AB    | 1395 | A    | C1'-O4'-C4' | -7.64 | 103.79      | 109.90   |
| 8   | AB    | 2288 | A    | C3'-C2'-C1' | -7.63 | 95.40       | 101.50   |
| 8   | CB    | 1997 | C    | C1'-O4'-C4' | -7.62 | 103.80      | 109.90   |
| 8   | AB    | 1680 | U    | O4'-C1'-N1  | 7.62  | 114.30      | 108.20   |
| 8   | AB    | 2212 | A    | C4'-C3'-C2' | -7.62 | 94.98       | 102.60   |
| 33  | DA    | 1506 | U    | O4'-C1'-N1  | -7.62 | 102.10      | 108.20   |
| 33  | DA    | 601  | G    | N9-C1'-C2'  | -7.61 | 103.62      | 112.00   |
| 7   | CA    | 15   | A    | C3'-C2'-C1' | -7.61 | 95.41       | 101.50   |
| 33  | DA    | 971  | G    | C1'-O4'-C4' | -7.61 | 103.81      | 109.90   |
| 33  | BA    | 1100 | C    | C1'-O4'-C4' | -7.61 | 103.81      | 109.90   |
| 8   | CB    | 222  | A    | C1'-O4'-C4' | -7.61 | 103.81      | 109.90   |
| 8   | CB    | 1930 | G    | C1'-O4'-C4' | -7.59 | 103.83      | 109.90   |
| 33  | BA    | 292  | G    | C4'-C3'-C2' | -7.59 | 95.01       | 102.60   |
| 8   | CB    | 2586 | U    | N1-C1'-C2'  | -7.59 | 103.65      | 112.00   |
| 33  | DA    | 1248 | A    | C4'-C3'-C2' | -7.59 | 95.01       | 102.60   |
| 8   | AB    | 1552 | A    | C3'-C2'-C1' | -7.58 | 95.44       | 101.50   |
| 8   | AB    | 38   | A    | P-O3'-C3'   | -7.58 | 110.61      | 119.70   |
| 8   | AB    | 37   | C    | C4'-C3'-C2' | -7.58 | 95.03       | 102.60   |
| 33  | DA    | 1534 | A    | C1'-O4'-C4' | -7.58 | 103.84      | 109.90   |
| 33  | DA    | 387  | U    | P-O3'-C3'   | 7.57  | 128.79      | 119.70   |
| 33  | BA    | 40   | C    | O4'-C1'-N1  | 7.57  | 114.26      | 108.20   |
| 33  | BA    | 559  | A    | C1'-O4'-C4' | -7.57 | 103.85      | 109.90   |
| 33  | BA    | 560  | A    | C1'-O4'-C4' | -7.57 | 103.85      | 109.90   |
| 33  | BA    | 771  | G    | N9-C1'-C2'  | -7.57 | 103.68      | 112.00   |
| 8   | AB    | 2362 | C    | P-O3'-C3'   | -7.56 | 110.63      | 119.70   |
| 8   | CB    | 974  | G    | P-O3'-C3'   | 7.55  | 128.76      | 119.70   |
| 8   | AB    | 2099 | U    | C3'-C2'-C1' | -7.55 | 95.46       | 101.50   |
| 8   | CB    | 177  | G    | C1'-O4'-C4' | -7.55 | 103.86      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2021 | C    | C4'-C3'-C2' | -7.55 | 95.05       | 102.60   |
| 33  | DA    | 1502 | A    | C1'-O4'-C4' | -7.55 | 103.86      | 109.90   |
| 8   | AB    | 1699 | G    | P-O3'-C3'   | 7.55  | 128.75      | 119.70   |
| 33  | DA    | 634  | C    | C4'-C3'-C2' | -7.54 | 95.06       | 102.60   |
| 8   | CB    | 118  | A    | O4'-C1'-N9  | -7.54 | 102.17      | 108.20   |
| 8   | CB    | 544  | C    | P-O3'-C3'   | 7.54  | 128.75      | 119.70   |
| 8   | CB    | 564  | C    | O4'-C1'-N1  | -7.54 | 102.17      | 108.20   |
| 8   | CB    | 1971 | U    | C4'-C3'-C2' | -7.53 | 95.07       | 102.60   |
| 33  | BA    | 792  | A    | C3'-C2'-C1' | -7.53 | 95.48       | 101.50   |
| 8   | CB    | 246  | C    | C4'-C3'-C2' | -7.53 | 95.07       | 102.60   |
| 8   | CB    | 2581 | G    | P-O3'-C3'   | 7.53  | 128.73      | 119.70   |
| 8   | CB    | 245  | G    | C3'-C2'-C1' | -7.53 | 95.48       | 101.50   |
| 8   | CB    | 813  | U    | P-O3'-C3'   | -7.53 | 110.67      | 119.70   |
| 8   | CB    | 1976 | U    | C2-N1-C1'   | 7.52  | 126.73      | 117.70   |
| 33  | DA    | 1432 | G    | C3'-C2'-C1' | 7.52  | 107.52      | 101.50   |
| 8   | AB    | 1623 | G    | P-O3'-C3'   | -7.52 | 110.68      | 119.70   |
| 33  | BA    | 51   | A    | P-O3'-C3'   | 7.52  | 128.72      | 119.70   |
| 8   | CB    | 1296 | G    | C3'-C2'-C1' | -7.52 | 95.49       | 101.50   |
| 8   | CB    | 783  | A    | N9-C1'-C2'  | -7.51 | 103.73      | 112.00   |
| 33  | DA    | 664  | G    | P-O3'-C3'   | -7.51 | 110.69      | 119.70   |
| 33  | BA    | 9    | G    | C4'-C3'-C2' | -7.51 | 95.09       | 102.60   |
| 8   | AB    | 1091 | G    | C3'-C2'-C1' | -7.51 | 95.50       | 101.50   |
| 33  | DA    | 956  | U    | C3'-C2'-C1' | -7.50 | 95.50       | 101.50   |
| 33  | BA    | 763  | G    | N9-C1'-C2'  | -7.50 | 103.75      | 112.00   |
| 8   | AB    | 527  | C    | O4'-C1'-N1  | 7.49  | 114.19      | 108.20   |
| 8   | CB    | 2030 | A    | C1'-O4'-C4' | -7.49 | 103.91      | 109.90   |
| 8   | CB    | 2453 | A    | C1'-O4'-C4' | -7.49 | 103.91      | 109.90   |
| 8   | AB    | 2765 | A    | C3'-C2'-C1' | 7.49  | 107.49      | 101.50   |
| 33  | BA    | 415  | A    | O4'-C1'-N9  | 7.49  | 114.19      | 108.20   |
| 33  | BA    | 809  | G    | O4'-C4'-C3' | -7.49 | 96.52       | 104.00   |
| 33  | DA    | 1518 | A    | P-O3'-C3'   | -7.49 | 110.72      | 119.70   |
| 33  | DA    | 781  | A    | N9-C1'-C2'  | -7.48 | 103.77      | 112.00   |
| 8   | AB    | 323  | C    | C4'-C3'-C2' | -7.48 | 95.12       | 102.60   |
| 8   | CB    | 1817 | G    | N3-C4-N9    | -7.48 | 121.51      | 126.00   |
| 33  | DA    | 435  | A    | O4'-C1'-N9  | 7.48  | 114.18      | 108.20   |
| 8   | AB    | 1275 | A    | P-O3'-C3'   | -7.48 | 110.73      | 119.70   |
| 33  | BA    | 986  | U    | O4'-C1'-N1  | 7.48  | 114.18      | 108.20   |
| 8   | CB    | 262  | A    | C4'-C3'-C2' | -7.47 | 95.13       | 102.60   |
| 8   | AB    | 228  | C    | C1'-O4'-C4' | -7.47 | 103.92      | 109.90   |
| 33  | DA    | 1182 | G    | O4'-C1'-N9  | -7.47 | 102.22      | 108.20   |
| 33  | DA    | 785  | G    | P-O3'-C3'   | -7.47 | 110.74      | 119.70   |
| 8   | AB    | 268  | C    | P-O3'-C3'   | -7.46 | 110.75      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 781  | A    | N1-C6-N6    | 7.46  | 123.08      | 118.60   |
| 8   | CB    | 333  | G    | O4'-C1'-N9  | -7.46 | 102.23      | 108.20   |
| 8   | CB    | 2860 | A    | P-O3'-C3'   | -7.46 | 110.75      | 119.70   |
| 33  | DA    | 770  | C    | C1'-O4'-C4' | -7.45 | 103.94      | 109.90   |
| 8   | CB    | 298  | G    | C3'-C2'-C1' | -7.45 | 95.54       | 101.50   |
| 8   | CB    | 444  | C    | C4'-C3'-C2' | -7.44 | 95.16       | 102.60   |
| 8   | CB    | 809  | G    | C4'-C3'-C2' | -7.44 | 95.16       | 102.60   |
| 33  | BA    | 411  | A    | C4'-C3'-C2' | -7.44 | 95.16       | 102.60   |
| 8   | CB    | 1826 | G    | O4'-C1'-N9  | -7.44 | 102.25      | 108.20   |
| 8   | CB    | 1980 | G    | O4'-C1'-N9  | 7.43  | 114.15      | 108.20   |
| 33  | DA    | 519  | C    | N1-C1'-C2'  | 7.43  | 123.66      | 114.00   |
| 33  | DA    | 519  | C    | C2-N1-C1'   | 7.43  | 126.97      | 118.80   |
| 8   | CB    | 458  | G    | O4'-C1'-N9  | 7.43  | 114.14      | 108.20   |
| 33  | DA    | 622  | A    | C3'-C2'-C1' | -7.43 | 95.56       | 101.50   |
| 33  | DA    | 220  | G    | C4'-C3'-C2' | -7.43 | 95.17       | 102.60   |
| 33  | DA    | 1185 | G    | N9-C1'-C2'  | -7.42 | 103.83      | 112.00   |
| 8   | CB    | 1352 | U    | C4'-C3'-C2' | -7.42 | 95.19       | 102.60   |
| 8   | CB    | 337  | C    | C4'-C3'-C2' | -7.41 | 95.19       | 102.60   |
| 33  | DA    | 517  | G    | C3'-C2'-C1' | -7.41 | 95.57       | 101.50   |
| 33  | DA    | 895  | G    | N3-C4-C5    | -7.41 | 124.89      | 128.60   |
| 8   | AB    | 63   | A    | O4'-C1'-N9  | 7.41  | 114.13      | 108.20   |
| 8   | AB    | 865  | C    | O4'-C1'-N1  | 7.41  | 114.12      | 108.20   |
| 33  | DA    | 1425 | U    | C5-C6-N1    | 7.41  | 126.40      | 122.70   |
| 33  | DA    | 672  | U    | C4'-C3'-C2' | -7.39 | 95.21       | 102.60   |
| 33  | BA    | 1196 | A    | O4'-C1'-N9  | 7.39  | 114.11      | 108.20   |
| 8   | AB    | 259  | G    | C4'-C3'-C2' | -7.38 | 95.22       | 102.60   |
| 8   | CB    | 745  | G    | C8-N9-C4    | -7.38 | 103.45      | 106.40   |
| 8   | CB    | 372  | G    | O4'-C1'-N9  | 7.38  | 114.10      | 108.20   |
| 8   | CB    | 1107 | G    | C4'-C3'-C2' | -7.38 | 95.22       | 102.60   |
| 8   | CB    | 107  | G    | C3'-C2'-C1' | -7.37 | 95.60       | 101.50   |
| 8   | CB    | 2442 | C    | C4'-C3'-C2' | -7.37 | 95.23       | 102.60   |
| 8   | CB    | 2451 | A    | C4'-C3'-C2' | -7.36 | 95.24       | 102.60   |
| 8   | AB    | 615  | U    | C3'-C2'-C1' | -7.36 | 95.61       | 101.50   |
| 8   | CB    | 1936 | A    | O4'-C1'-N9  | -7.36 | 102.31      | 108.20   |
| 8   | AB    | 962  | G    | C4'-C3'-C2' | -7.36 | 95.24       | 102.60   |
| 33  | BA    | 635  | A    | O4'-C1'-N9  | 7.36  | 114.08      | 108.20   |
| 8   | CB    | 1695 | G    | C2-N3-C4    | -7.35 | 108.22      | 111.90   |
| 8   | AB    | 813  | U    | P-O3'-C3'   | -7.35 | 110.88      | 119.70   |
| 8   | CB    | 2157 | G    | O4'-C1'-N9  | 7.35  | 114.08      | 108.20   |
| 8   | CB    | 2350 | C    | P-O3'-C3'   | -7.35 | 110.88      | 119.70   |
| 33  | DA    | 835  | U    | C1'-O4'-C4' | -7.34 | 104.03      | 109.90   |
| 8   | CB    | 2336 | A    | P-O3'-C3'   | 7.34  | 128.51      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 1982 | U    | P-O3'-C3'   | -7.34 | 110.89      | 119.70   |
| 8   | AB    | 974  | G    | C6-C5-N7    | -7.34 | 126.00      | 130.40   |
| 8   | CB    | 982  | C    | C1'-O4'-C4' | -7.34 | 104.03      | 109.90   |
| 33  | DA    | 926  | G    | C4'-C3'-C2' | -7.34 | 95.26       | 102.60   |
| 8   | CB    | 558  | U    | P-O3'-C3'   | -7.33 | 110.90      | 119.70   |
| 8   | AB    | 1930 | G    | C1'-O4'-C4' | -7.33 | 104.03      | 109.90   |
| 8   | CB    | 575  | A    | O4'-C1'-N9  | -7.33 | 102.33      | 108.20   |
| 8   | AB    | 1296 | G    | C4'-C3'-C2' | -7.33 | 95.27       | 102.60   |
| 8   | CB    | 1250 | G    | P-O3'-C3'   | 7.32  | 128.48      | 119.70   |
| 33  | DA    | 793  | U    | C4'-C3'-C2' | -7.32 | 95.28       | 102.60   |
| 8   | CB    | 2082 | A    | C1'-O4'-C4' | -7.32 | 104.05      | 109.90   |
| 8   | CB    | 2094 | A    | O4'-C1'-N9  | 7.32  | 114.05      | 108.20   |
| 8   | CB    | 2726 | A    | C1'-O4'-C4' | -7.32 | 104.05      | 109.90   |
| 8   | AB    | 2015 | A    | N9-C1'-C2'  | 7.31  | 123.51      | 114.00   |
| 33  | DA    | 683  | G    | C3'-C2'-C1' | 7.31  | 107.35      | 101.50   |
| 8   | AB    | 793  | A    | O4'-C1'-N9  | -7.31 | 102.35      | 108.20   |
| 8   | CB    | 603  | A    | C1'-O4'-C4' | -7.31 | 104.05      | 109.90   |
| 33  | DA    | 388  | G    | C5'-C4'-O4' | -7.31 | 100.33      | 109.10   |
| 33  | DA    | 521  | G    | C4'-C3'-C2' | -7.31 | 95.29       | 102.60   |
| 8   | CB    | 1985 | C    | C4'-C3'-C2' | -7.30 | 95.30       | 102.60   |
| 33  | DA    | 556  | C    | C3'-C2'-C1' | -7.30 | 95.66       | 101.50   |
| 8   | AB    | 552  | U    | P-O3'-C3'   | -7.30 | 110.94      | 119.70   |
| 8   | CB    | 779  | U    | C4'-C3'-C2' | -7.29 | 95.31       | 102.60   |
| 8   | CB    | 2015 | A    | P-O3'-C3'   | -7.29 | 110.95      | 119.70   |
| 8   | CB    | 2780 | G    | N3-C4-C5    | -7.29 | 124.95      | 128.60   |
| 33  | DA    | 782  | A    | C8-N9-C4    | -7.29 | 102.88      | 105.80   |
| 33  | DA    | 798  | U    | P-O3'-C3'   | -7.29 | 110.96      | 119.70   |
| 8   | CB    | 982  | C    | C6-N1-C2    | -7.28 | 117.39      | 120.30   |
| 8   | CB    | 1025 | G    | C3'-C2'-C1' | -7.28 | 95.67       | 101.50   |
| 8   | CB    | 2848 | G    | N1-C6-O6    | 7.28  | 124.27      | 119.90   |
| 7   | AA    | 5    | U    | O4'-C1'-N1  | 7.28  | 114.02      | 108.20   |
| 8   | CB    | 2512 | C    | P-O3'-C3'   | -7.28 | 110.97      | 119.70   |
| 8   | CB    | 573  | U    | N1-C1'-C2'  | 7.27  | 123.45      | 114.00   |
| 8   | AB    | 573  | U    | N1-C1'-C2'  | 7.26  | 123.44      | 114.00   |
| 8   | CB    | 2543 | G    | P-O3'-C3'   | -7.26 | 110.99      | 119.70   |
| 33  | DA    | 872  | A    | C3'-C2'-C1' | -7.26 | 95.69       | 101.50   |
| 8   | AB    | 659  | G    | P-O3'-C3'   | -7.26 | 110.99      | 119.70   |
| 8   | AB    | 1819 | A    | C1'-O4'-C4' | -7.26 | 104.09      | 109.90   |
| 8   | CB    | 2585 | U    | P-O3'-C3'   | 7.25  | 128.40      | 119.70   |
| 8   | CB    | 2616 | C    | P-O3'-C3'   | -7.25 | 111.00      | 119.70   |
| 8   | CB    | 1296 | G    | C4'-C3'-C2' | -7.25 | 95.35       | 102.60   |
| 8   | AB    | 1021 | A    | C3'-C2'-C1' | -7.24 | 95.71       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 465  | G    | C8-N9-C4    | -7.24 | 103.50      | 106.40   |
| 8   | CB    | 445  | C    | C1'-O4'-C4' | -7.24 | 104.11      | 109.90   |
| 8   | CB    | 1395 | A    | C1'-O4'-C4' | -7.24 | 104.11      | 109.90   |
| 8   | CB    | 2697 | G    | C4'-C3'-C2' | -7.24 | 95.36       | 102.60   |
| 8   | CB    | 2445 | G    | O4'-C1'-N9  | 7.24  | 113.99      | 108.20   |
| 33  | BA    | 670  | G    | C4'-C3'-C2' | -7.23 | 95.37       | 102.60   |
| 8   | AB    | 2442 | C    | C4'-C3'-C2' | -7.23 | 95.37       | 102.60   |
| 33  | DA    | 683  | G    | C8-N9-C4    | -7.23 | 103.51      | 106.40   |
| 33  | BA    | 836  | G    | C4'-C3'-C2' | -7.22 | 95.38       | 102.60   |
| 8   | CB    | 1616 | A    | C4'-C3'-C2' | -7.22 | 95.38       | 102.60   |
| 8   | CB    | 2800 | A    | C4'-C3'-C2' | -7.22 | 95.38       | 102.60   |
| 8   | AB    | 449  | A    | P-O3'-C3'   | 7.21  | 128.36      | 119.70   |
| 8   | CB    | 1933 | G    | O4'-C1'-N9  | -7.21 | 102.43      | 108.20   |
| 8   | AB    | 2016 | U    | C4'-C3'-C2' | -7.21 | 95.39       | 102.60   |
| 8   | AB    | 982  | C    | N3-C4-C5    | -7.21 | 119.02      | 121.90   |
| 33  | DA    | 13   | U    | O4'-C1'-N1  | -7.21 | 102.44      | 108.20   |
| 8   | AB    | 91   | A    | C5'-C4'-O4' | -7.20 | 100.45      | 109.10   |
| 8   | AB    | 571  | U    | C1'-O4'-C4' | -7.20 | 104.14      | 109.90   |
| 8   | CB    | 84   | A    | C1'-O4'-C4' | -7.20 | 104.14      | 109.90   |
| 8   | CB    | 259  | G    | C4'-C3'-C2' | -7.20 | 95.40       | 102.60   |
| 8   | AB    | 482  | A    | C1'-O4'-C4' | -7.20 | 104.14      | 109.90   |
| 33  | BA    | 1528 | U    | P-O3'-C3'   | 7.20  | 128.34      | 119.70   |
| 8   | CB    | 1793 | C    | C4'-C3'-C2' | -7.20 | 95.40       | 102.60   |
| 8   | CB    | 2206 | C    | P-O3'-C3'   | -7.20 | 111.06      | 119.70   |
| 33  | DA    | 60   | A    | O4'-C1'-N9  | -7.20 | 102.44      | 108.20   |
| 33  | DA    | 1487 | G    | P-O3'-C3'   | -7.19 | 111.07      | 119.70   |
| 8   | AB    | 203  | A    | O4'-C1'-N9  | 7.19  | 113.95      | 108.20   |
| 8   | AB    | 1327 | A    | P-O3'-C3'   | 7.19  | 128.33      | 119.70   |
| 8   | CB    | 2288 | A    | C5-C6-N1    | -7.18 | 114.11      | 117.70   |
| 7   | AA    | 56   | G    | C8-N9-C4    | -7.18 | 103.53      | 106.40   |
| 33  | BA    | 743  | A    | C3'-C2'-C1' | -7.18 | 95.76       | 101.50   |
| 8   | CB    | 250  | G    | O4'-C4'-C3' | -7.18 | 96.82       | 104.00   |
| 8   | CB    | 694  | U    | P-O3'-C3'   | -7.18 | 111.09      | 119.70   |
| 8   | AB    | 1367 | A    | P-O3'-C3'   | -7.17 | 111.09      | 119.70   |
| 8   | AB    | 1829 | A    | P-O5'-C5'   | -7.17 | 109.43      | 120.90   |
| 7   | CA    | 32   | U    | P-O3'-C3'   | -7.17 | 111.10      | 119.70   |
| 33  | DA    | 559  | A    | C1'-O4'-C4' | -7.17 | 104.17      | 109.90   |
| 8   | CB    | 1984 | G    | C4'-C3'-C2' | -7.17 | 95.44       | 102.60   |
| 33  | DA    | 388  | G    | O4'-C1'-N9  | -7.16 | 102.47      | 108.20   |
| 8   | AB    | 982  | C    | C1'-O4'-C4' | -7.16 | 104.17      | 109.90   |
| 8   | AB    | 1657 | U    | P-O3'-C3'   | -7.16 | 111.11      | 119.70   |
| 8   | AB    | 2480 | C    | O4'-C1'-N1  | 7.16  | 113.92      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2685 | G    | C8-N9-C4    | -7.16 | 103.54      | 106.40   |
| 8   | AB    | 994  | C    | O4'-C1'-N1  | -7.15 | 102.48      | 108.20   |
| 8   | CB    | 980  | A    | C3'-C2'-C1' | 7.15  | 107.22      | 101.50   |
| 8   | CB    | 1783 | A    | P-O3'-C3'   | -7.15 | 111.12      | 119.70   |
| 33  | DA    | 1235 | U    | C4'-C3'-C2' | -7.15 | 95.45       | 102.60   |
| 33  | DA    | 346  | G    | C1'-O4'-C4' | -7.14 | 104.19      | 109.90   |
| 8   | AB    | 2212 | A    | C3'-C2'-C1' | -7.14 | 95.79       | 101.50   |
| 7   | CA    | 101  | A    | P-O3'-C3'   | -7.14 | 111.13      | 119.70   |
| 33  | DA    | 71   | A    | C3'-C2'-C1' | -7.14 | 95.79       | 101.50   |
| 8   | AB    | 1261 | C    | O4'-C1'-N1  | -7.14 | 102.49      | 108.20   |
| 8   | CB    | 1968 | G    | C4'-C3'-C2' | -7.13 | 95.47       | 102.60   |
| 8   | CB    | 479  | A    | O4'-C1'-C2' | -7.13 | 98.67       | 105.80   |
| 33  | DA    | 765  | G    | C5-C6-N1    | 7.13  | 115.06      | 111.50   |
| 8   | AB    | 2630 | G    | O4'-C1'-N9  | 7.12  | 113.90      | 108.20   |
| 8   | CB    | 2362 | C    | P-O3'-C3'   | -7.12 | 111.15      | 119.70   |
| 33  | DA    | 434  | U    | C1'-O4'-C4' | -7.12 | 104.20      | 109.90   |
| 8   | CB    | 941  | A    | C1'-O4'-C4' | -7.12 | 104.20      | 109.90   |
| 33  | DA    | 837  | U    | C3'-C2'-C1' | -7.12 | 95.81       | 101.50   |
| 8   | CB    | 796  | C    | C4'-C3'-C2' | -7.11 | 95.49       | 102.60   |
| 33  | DA    | 545  | C    | P-O3'-C3'   | -7.11 | 111.17      | 119.70   |
| 33  | BA    | 815  | A    | O4'-C1'-N9  | -7.11 | 102.51      | 108.20   |
| 8   | CB    | 1633 | G    | O4'-C1'-N9  | -7.11 | 102.51      | 108.20   |
| 33  | DA    | 807  | A    | P-O3'-C3'   | -7.11 | 111.17      | 119.70   |
| 7   | AA    | 41   | G    | O4'-C1'-N9  | 7.10  | 113.88      | 108.20   |
| 33  | DA    | 108  | G    | C4'-C3'-C2' | -7.10 | 95.50       | 102.60   |
| 8   | AB    | 1818 | U    | O4'-C1'-N1  | 7.09  | 113.88      | 108.20   |
| 8   | AB    | 386  | G    | C4'-C3'-C2' | -7.09 | 95.51       | 102.60   |
| 8   | AB    | 2608 | G    | C4'-C3'-C2' | -7.09 | 95.51       | 102.60   |
| 33  | BA    | 732  | C    | C4'-C3'-C2' | -7.08 | 95.52       | 102.60   |
| 8   | CB    | 2095 | A    | C3'-C2'-C1' | -7.08 | 95.83       | 101.50   |
| 8   | AB    | 1996 | C    | O4'-C1'-C2' | -7.08 | 98.72       | 105.80   |
| 8   | CB    | 132  | G    | N1-C6-O6    | 7.08  | 124.15      | 119.90   |
| 33  | DA    | 773  | G    | O4'-C1'-N9  | -7.08 | 102.54      | 108.20   |
| 8   | CB    | 1297 | C    | C4'-C3'-C2' | -7.08 | 95.52       | 102.60   |
| 8   | CB    | 1684 | G    | C4'-C3'-C2' | -7.08 | 95.53       | 102.60   |
| 8   | CB    | 493  | G    | C4'-C3'-C2' | -7.07 | 95.53       | 102.60   |
| 33  | DA    | 502  | A    | P-O3'-C3'   | -7.07 | 111.21      | 119.70   |
| 33  | BA    | 368  | U    | C1'-O4'-C4' | -7.07 | 104.24      | 109.90   |
| 33  | DA    | 1049 | U    | P-O3'-C3'   | 7.07  | 128.19      | 119.70   |
| 33  | BA    | 416  | G    | C3'-C2'-C1' | -7.07 | 95.84       | 101.50   |
| 33  | DA    | 780  | A    | C3'-C2'-C1' | -7.07 | 95.84       | 101.50   |
| 8   | AB    | 277  | G    | C3'-C2'-C1' | -7.07 | 95.85       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 1125 | G    | P-O3'-C3'   | 7.06  | 128.17      | 119.70   |
| 8   | CB    | 2741 | A    | O4'-C1'-N9  | 7.06  | 113.85      | 108.20   |
| 8   | CB    | 63   | A    | O4'-C1'-N9  | 7.06  | 113.85      | 108.20   |
| 8   | CB    | 829  | A    | C4'-C3'-C2' | -7.05 | 95.55       | 102.60   |
| 8   | CB    | 2059 | A    | N9-C1'-C2'  | -7.05 | 104.25      | 112.00   |
| 33  | DA    | 600  | A    | O4'-C1'-N9  | -7.05 | 102.56      | 108.20   |
| 8   | AB    | 372  | G    | O4'-C1'-N9  | 7.04  | 113.84      | 108.20   |
| 8   | AB    | 1720 | U    | C4'-C3'-C2' | -7.04 | 95.56       | 102.60   |
| 33  | BA    | 890  | G    | C1'-O4'-C4' | -7.04 | 104.27      | 109.90   |
| 8   | AB    | 1793 | C    | C4'-C3'-C2' | -7.04 | 95.56       | 102.60   |
| 33  | BA    | 1049 | U    | P-O3'-C3'   | 7.04  | 128.15      | 119.70   |
| 8   | AB    | 852  | U    | P-O3'-C3'   | -7.04 | 111.26      | 119.70   |
| 8   | AB    | 101  | A    | C4'-C3'-C2' | -7.03 | 95.57       | 102.60   |
| 8   | AB    | 1914 | C    | C1'-O4'-C4' | -7.03 | 104.27      | 109.90   |
| 7   | AA    | 112  | G    | C1'-O4'-C4' | -7.03 | 104.28      | 109.90   |
| 33  | DA    | 1065 | U    | C1'-O4'-C4' | -7.03 | 104.28      | 109.90   |
| 8   | CB    | 2740 | A    | P-O3'-C3'   | 7.03  | 128.13      | 119.70   |
| 8   | AB    | 1818 | U    | C1'-O4'-C4' | -7.02 | 104.28      | 109.90   |
| 8   | CB    | 2732 | G    | C6-C5-N7    | -7.02 | 126.19      | 130.40   |
| 8   | AB    | 245  | G    | C3'-C2'-C1' | -7.01 | 95.89       | 101.50   |
| 8   | CB    | 1914 | C    | C1'-O4'-C4' | -7.01 | 104.29      | 109.90   |
| 33  | DA    | 51   | A    | P-O3'-C3'   | 7.01  | 128.11      | 119.70   |
| 33  | DA    | 649  | A    | O4'-C1'-N9  | 7.01  | 113.81      | 108.20   |
| 33  | DA    | 734  | G    | N9-C1'-C2'  | -7.01 | 104.29      | 112.00   |
| 8   | CB    | 1360 | G    | O4'-C1'-N9  | 7.00  | 113.80      | 108.20   |
| 8   | CB    | 482  | A    | C1'-O4'-C4' | -7.00 | 104.30      | 109.90   |
| 33  | DA    | 886  | G    | P-O3'-C3'   | 7.00  | 128.09      | 119.70   |
| 8   | AB    | 2320 | U    | C3'-C2'-C1' | -6.99 | 95.91       | 101.50   |
| 8   | CB    | 1828 | G    | O4'-C1'-N9  | -6.99 | 102.61      | 108.20   |
| 8   | CB    | 321  | U    | O4'-C1'-N1  | 6.99  | 113.79      | 108.20   |
| 8   | CB    | 972  | A    | N1-C6-N6    | -6.99 | 114.41      | 118.60   |
| 8   | AB    | 2686 | G    | C8-N9-C4    | -6.98 | 103.61      | 106.40   |
| 33  | BA    | 916  | U    | P-O3'-C3'   | -6.98 | 111.32      | 119.70   |
| 8   | CB    | 962  | G    | C4'-C3'-C2' | -6.98 | 95.62       | 102.60   |
| 8   | CB    | 2076 | U    | P-O3'-C3'   | 6.98  | 128.08      | 119.70   |
| 7   | AA    | 66   | A    | P-O3'-C3'   | 6.98  | 128.08      | 119.70   |
| 8   | AB    | 246  | C    | C4'-C3'-C2' | -6.98 | 95.62       | 102.60   |
| 8   | CB    | 2296 | U    | P-O3'-C3'   | 6.98  | 128.07      | 119.70   |
| 8   | CB    | 2620 | C    | C1'-O4'-C4' | -6.98 | 104.32      | 109.90   |
| 33  | DA    | 368  | U    | C1'-O4'-C4' | -6.98 | 104.32      | 109.90   |
| 8   | AB    | 323  | C    | P-O3'-C3'   | 6.97  | 128.07      | 119.70   |
| 8   | AB    | 1010 | A    | C3'-C2'-C1' | -6.97 | 95.92       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2320 | U    | C3'-C2'-C1' | -6.97 | 95.92       | 101.50   |
| 8   | AB    | 683  | U    | C4'-C3'-C2' | -6.97 | 95.63       | 102.60   |
| 8   | AB    | 1201 | U    | C4'-C3'-C2' | -6.97 | 95.63       | 102.60   |
| 8   | CB    | 1241 | A    | C4'-C3'-C2' | -6.97 | 95.63       | 102.60   |
| 33  | DA    | 1025 | U    | C1'-O4'-C4' | -6.97 | 104.33      | 109.90   |
| 8   | AB    | 205  | G    | C3'-C2'-C1' | -6.96 | 95.93       | 101.50   |
| 33  | BA    | 791  | G    | C1'-O4'-C4' | -6.96 | 104.33      | 109.90   |
| 8   | CB    | 2448 | A    | O4'-C1'-N9  | -6.96 | 102.63      | 108.20   |
| 33  | BA    | 863  | U    | C1'-O4'-C4' | -6.96 | 104.33      | 109.90   |
| 8   | CB    | 752  | A    | C1'-O4'-C4' | -6.96 | 104.33      | 109.90   |
| 8   | CB    | 96   | C    | C4'-C3'-C2' | -6.95 | 95.65       | 102.60   |
| 8   | CB    | 2740 | A    | C3'-C2'-C1' | 6.95  | 107.06      | 101.50   |
| 8   | CB    | 386  | G    | C4'-C3'-C2' | -6.95 | 95.65       | 102.60   |
| 33  | DA    | 1249 | C    | C3'-C2'-C1' | -6.95 | 95.94       | 101.50   |
| 8   | CB    | 183  | C    | P-O3'-C3'   | -6.94 | 111.37      | 119.70   |
| 8   | CB    | 1378 | A    | N9-C1'-C2'  | -6.94 | 104.36      | 112.00   |
| 8   | CB    | 1699 | G    | P-O3'-C3'   | 6.94  | 128.03      | 119.70   |
| 8   | CB    | 2083 | G    | O4'-C1'-N9  | -6.94 | 102.65      | 108.20   |
| 8   | AB    | 2296 | U    | P-O3'-C3'   | 6.94  | 128.03      | 119.70   |
| 8   | CB    | 1831 | G    | N3-C4-C5    | -6.94 | 125.13      | 128.60   |
| 8   | CB    | 2250 | G    | N3-C4-N9    | -6.94 | 121.84      | 126.00   |
| 8   | AB    | 84   | A    | C1'-O4'-C4' | -6.94 | 104.35      | 109.90   |
| 33  | BA    | 803  | G    | P-O3'-C3'   | 6.94  | 128.02      | 119.70   |
| 8   | AB    | 1241 | A    | C4'-C3'-C2' | -6.93 | 95.67       | 102.60   |
| 33  | BA    | 815  | A    | P-O3'-C3'   | -6.93 | 111.38      | 119.70   |
| 33  | BA    | 502  | A    | C4'-C3'-C2' | -6.93 | 95.67       | 102.60   |
| 8   | CB    | 563  | A    | P-O3'-C3'   | -6.93 | 111.38      | 119.70   |
| 33  | DA    | 527  | G    | N3-C4-C5    | 6.93  | 132.07      | 128.60   |
| 8   | AB    | 458  | G    | O4'-C1'-N9  | 6.93  | 113.75      | 108.20   |
| 33  | DA    | 124  | C    | P-O3'-C3'   | -6.93 | 111.38      | 119.70   |
| 33  | DA    | 914  | A    | N9-C1'-C2'  | -6.93 | 104.38      | 112.00   |
| 8   | AB    | 2095 | A    | N9-C1'-C2'  | -6.93 | 104.38      | 112.00   |
| 8   | CB    | 2679 | A    | O4'-C1'-N9  | -6.92 | 102.66      | 108.20   |
| 33  | DA    | 778  | G    | C4'-C3'-C2' | -6.92 | 95.68       | 102.60   |
| 8   | AB    | 1786 | A    | P-O3'-C3'   | 6.92  | 128.00      | 119.70   |
| 8   | CB    | 1418 | G    | P-O3'-C3'   | -6.92 | 111.40      | 119.70   |
| 33  | DA    | 482  | A    | P-O3'-C3'   | 6.91  | 128.00      | 119.70   |
| 8   | AB    | 2609 | U    | P-O3'-C3'   | 6.91  | 127.99      | 119.70   |
| 8   | CB    | 1601 | G    | C4'-C3'-C2' | -6.91 | 95.69       | 102.60   |
| 33  | DA    | 485  | U    | P-O3'-C3'   | 6.91  | 127.99      | 119.70   |
| 8   | AB    | 247  | G    | C4'-C3'-C2' | -6.91 | 95.69       | 102.60   |
| 8   | CB    | 1758 | U    | O4'-C1'-N1  | -6.90 | 102.68      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 519  | C    | N3-C2-O2    | -6.90 | 117.07      | 121.90   |
| 8   | AB    | 2288 | A    | O4'-C1'-N9  | 6.90  | 113.72      | 108.20   |
| 8   | CB    | 142  | A    | O4'-C1'-N9  | -6.90 | 102.68      | 108.20   |
| 8   | AB    | 811  | U    | C4'-C3'-C2' | -6.89 | 95.71       | 102.60   |
| 8   | CB    | 260  | G    | C4'-C3'-C2' | -6.89 | 95.70       | 102.60   |
| 8   | AB    | 2821 | A    | C4'-C3'-C2' | -6.89 | 95.71       | 102.60   |
| 33  | DA    | 971  | G    | N9-C1'-C2'  | 6.89  | 122.95      | 114.00   |
| 8   | AB    | 528  | A    | C5'-C4'-O4' | -6.88 | 100.84      | 109.10   |
| 8   | AB    | 1058 | U    | C4'-C3'-C2' | -6.88 | 95.72       | 102.60   |
| 33  | DA    | 899  | C    | N1-C2-O2    | 6.88  | 123.03      | 118.90   |
| 8   | CB    | 2694 | G    | C8-N9-C4    | -6.88 | 103.65      | 106.40   |
| 8   | CB    | 141  | G    | C3'-C2'-C1' | 6.88  | 107.00      | 101.50   |
| 8   | AB    | 1354 | A    | P-O3'-C3'   | -6.87 | 111.45      | 119.70   |
| 33  | DA    | 353  | A    | O4'-C1'-N9  | 6.87  | 113.70      | 108.20   |
| 8   | CB    | 2477 | U    | C1'-O4'-C4' | -6.87 | 104.40      | 109.90   |
| 8   | CB    | 2106 | U    | C3'-C2'-C1' | -6.87 | 96.01       | 101.50   |
| 8   | CB    | 1818 | U    | O4'-C1'-N1  | 6.87  | 113.69      | 108.20   |
| 33  | DA    | 1139 | G    | C3'-C2'-C1' | -6.87 | 96.01       | 101.50   |
| 8   | AB    | 1054 | A    | C4'-C3'-C2' | -6.86 | 95.74       | 102.60   |
| 8   | AB    | 1980 | G    | O4'-C1'-N9  | 6.86  | 113.69      | 108.20   |
| 8   | CB    | 2259 | U    | O4'-C1'-N1  | 6.86  | 113.69      | 108.20   |
| 33  | DA    | 731  | G    | O4'-C1'-N9  | -6.86 | 102.71      | 108.20   |
| 8   | AB    | 493  | G    | C4'-C3'-C2' | -6.86 | 95.74       | 102.60   |
| 8   | CB    | 2223 | G    | P-O3'-C3'   | -6.86 | 111.47      | 119.70   |
| 33  | DA    | 971  | G    | P-O3'-C3'   | 6.86  | 127.93      | 119.70   |
| 8   | AB    | 876  | C    | C4'-C3'-C2' | -6.86 | 95.75       | 102.60   |
| 8   | CB    | 2370 | G    | C4'-C3'-C2' | -6.85 | 95.75       | 102.60   |
| 33  | DA    | 1514 | G    | N9-C1'-C2'  | -6.85 | 104.47      | 112.00   |
| 8   | AB    | 561  | G    | N1-C6-O6    | 6.84  | 124.00      | 119.90   |
| 8   | CB    | 2024 | G    | C3'-C2'-C1' | -6.84 | 96.03       | 101.50   |
| 8   | CB    | 573  | U    | C1'-O4'-C4' | -6.84 | 104.43      | 109.90   |
| 33  | DA    | 629  | A    | C3'-C2'-C1' | -6.84 | 96.03       | 101.50   |
| 8   | AB    | 2445 | G    | O4'-C1'-N9  | 6.83  | 113.67      | 108.20   |
| 8   | CB    | 2821 | A    | C4'-C3'-C2' | -6.83 | 95.77       | 102.60   |
| 33  | DA    | 806  | C    | C2-N1-C1'   | 6.83  | 126.32      | 118.80   |
| 33  | BA    | 634  | C    | O4'-C1'-N1  | 6.83  | 113.67      | 108.20   |
| 8   | CB    | 921  | C    | C4'-C3'-C2' | -6.83 | 95.77       | 102.60   |
| 8   | CB    | 1440 | U    | N1-C1'-C2'  | 6.82  | 122.87      | 114.00   |
| 8   | CB    | 1792 | G    | C4'-C3'-C2' | -6.82 | 95.78       | 102.60   |
| 8   | AB    | 1913 | A    | C1'-O4'-C4' | -6.82 | 104.44      | 109.90   |
| 8   | AB    | 2430 | A    | O4'-C1'-N9  | -6.82 | 102.75      | 108.20   |
| 8   | CB    | 1797 | G    | N9-C1'-C2'  | -6.82 | 104.50      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 795  | C    | C4'-C3'-C2' | -6.81 | 95.79       | 102.60   |
| 8   | CB    | 683  | U    | C4'-C3'-C2' | -6.81 | 95.79       | 102.60   |
| 8   | CB    | 1187 | G    | O4'-C1'-N9  | -6.81 | 102.75      | 108.20   |
| 33  | BA    | 1065 | U    | C3'-C2'-C1' | -6.80 | 96.06       | 101.50   |
| 8   | AB    | 603  | A    | C3'-C2'-C1' | -6.80 | 96.06       | 101.50   |
| 8   | CB    | 571  | U    | C1'-O4'-C4' | -6.80 | 104.46      | 109.90   |
| 8   | CB    | 1040 | A    | P-O3'-C3'   | -6.80 | 111.54      | 119.70   |
| 33  | DA    | 774  | G    | P-O3'-C3'   | 6.80  | 127.86      | 119.70   |
| 8   | AB    | 673  | C    | C4'-C3'-C2' | -6.80 | 95.80       | 102.60   |
| 7   | CA    | 95   | U    | C4'-C3'-C2' | -6.79 | 95.81       | 102.60   |
| 8   | CB    | 2685 | G    | N3-C4-C5    | -6.79 | 125.20      | 128.60   |
| 8   | AB    | 2690 | U    | C1'-O4'-C4' | -6.79 | 104.47      | 109.90   |
| 8   | CB    | 321  | U    | P-O3'-C3'   | 6.79  | 127.84      | 119.70   |
| 8   | CB    | 670  | A    | P-O3'-C3'   | 6.79  | 127.84      | 119.70   |
| 33  | DA    | 652  | U    | C3'-C2'-C1' | -6.79 | 96.07       | 101.50   |
| 33  | DA    | 994  | A    | C3'-C2'-C1' | -6.78 | 96.08       | 101.50   |
| 8   | CB    | 2480 | C    | O4'-C1'-N1  | 6.78  | 113.62      | 108.20   |
| 8   | CB    | 2734 | A    | N1-C6-N6    | 6.77  | 122.67      | 118.60   |
| 8   | CB    | 2880 | C    | N1-C1'-C2'  | 6.77  | 122.81      | 114.00   |
| 8   | CB    | 544  | C    | C5'-C4'-O4' | 6.77  | 117.22      | 109.10   |
| 33  | BA    | 407  | U    | C4'-C3'-C2' | -6.77 | 95.83       | 102.60   |
| 8   | CB    | 2016 | U    | C4'-C3'-C2' | -6.77 | 95.83       | 102.60   |
| 33  | DA    | 91   | U    | C3'-C2'-C1' | -6.76 | 96.09       | 101.50   |
| 8   | CB    | 346  | A    | O4'-C1'-N9  | 6.76  | 113.61      | 108.20   |
| 33  | DA    | 1043 | G    | C1'-O4'-C4' | -6.76 | 104.49      | 109.90   |
| 33  | DA    | 411  | A    | P-O3'-C3'   | 6.75  | 127.81      | 119.70   |
| 8   | AB    | 1250 | G    | P-O3'-C3'   | 6.75  | 127.80      | 119.70   |
| 8   | CB    | 50   | U    | O4'-C1'-N1  | 6.75  | 113.60      | 108.20   |
| 8   | AB    | 1009 | A    | P-O3'-C3'   | -6.75 | 111.60      | 119.70   |
| 33  | DA    | 769  | G    | P-O3'-C3'   | 6.75  | 127.80      | 119.70   |
| 8   | AB    | 2550 | G    | O4'-C1'-N9  | -6.75 | 102.80      | 108.20   |
| 33  | DA    | 863  | U    | C1'-O4'-C4' | -6.75 | 104.50      | 109.90   |
| 8   | CB    | 1829 | A    | P-O5'-C5'   | -6.74 | 110.11      | 120.90   |
| 8   | CB    | 2608 | G    | C4'-C3'-C2' | -6.74 | 95.86       | 102.60   |
| 33  | DA    | 765  | G    | C5'-C4'-O4' | 6.74  | 117.19      | 109.10   |
| 8   | CB    | 1204 | A    | O4'-C1'-N9  | 6.74  | 113.59      | 108.20   |
| 8   | CB    | 1441 | G    | C4'-C3'-C2' | -6.74 | 95.86       | 102.60   |
| 8   | CB    | 2015 | A    | N9-C1'-C2'  | 6.74  | 122.76      | 114.00   |
| 33  | DA    | 495  | A    | P-O3'-C3'   | 6.74  | 127.78      | 119.70   |
| 8   | AB    | 1475 | G    | C3'-C2'-C1' | -6.74 | 96.11       | 101.50   |
| 8   | CB    | 1850 | G    | N1-C6-O6    | 6.73  | 123.94      | 119.90   |
| 8   | AB    | 2697 | G    | C4'-C3'-C2' | -6.73 | 95.87       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | BA    | 960  | U    | P-O3'-C3'   | 6.73  | 127.78      | 119.70   |
| 8   | CB    | 1720 | U    | C4'-C3'-C2' | -6.73 | 95.87       | 102.60   |
| 33  | DA    | 1347 | G    | C3'-C2'-C1' | -6.73 | 96.11       | 101.50   |
| 8   | AB    | 1959 | G    | C4'-C3'-C2' | -6.73 | 95.87       | 102.60   |
| 8   | AB    | 2067 | G    | C1'-O4'-C4' | -6.73 | 104.52      | 109.90   |
| 8   | AB    | 1988 | G    | C3'-C2'-C1' | -6.72 | 96.12       | 101.50   |
| 8   | CB    | 2105 | U    | C3'-C2'-C1' | 6.72  | 106.88      | 101.50   |
| 8   | AB    | 323  | C    | O4'-C1'-N1  | 6.72  | 113.58      | 108.20   |
| 8   | CB    | 90   | U    | C4'-C3'-C2' | -6.72 | 95.88       | 102.60   |
| 8   | AB    | 2597 | G    | N9-C1'-C2'  | 6.72  | 122.73      | 114.00   |
| 33  | DA    | 971  | G    | O4'-C1'-C2' | -6.72 | 99.08       | 105.80   |
| 8   | CB    | 2201 | G    | C3'-C2'-C1' | -6.71 | 96.13       | 101.50   |
| 33  | DA    | 457  | G    | O4'-C1'-N9  | 6.71  | 113.57      | 108.20   |
| 8   | AB    | 1888 | G    | C4'-C3'-C2' | -6.71 | 95.89       | 102.60   |
| 8   | AB    | 2726 | A    | C1'-O4'-C4' | -6.71 | 104.53      | 109.90   |
| 33  | DA    | 1248 | A    | O4'-C1'-N9  | 6.70  | 113.56      | 108.20   |
| 33  | DA    | 1504 | G    | O4'-C1'-N9  | 6.70  | 113.56      | 108.20   |
| 8   | CB    | 1294 | U    | C3'-C2'-C1' | -6.70 | 96.14       | 101.50   |
| 8   | AB    | 1684 | G    | C4'-C3'-C2' | -6.70 | 95.90       | 102.60   |
| 8   | AB    | 1889 | A    | C3'-C2'-C1' | -6.70 | 96.14       | 101.50   |
| 8   | CB    | 553  | G    | C3'-C2'-C1' | -6.70 | 96.14       | 101.50   |
| 8   | AB    | 553  | G    | C4'-C3'-C2' | -6.70 | 95.90       | 102.60   |
| 8   | AB    | 2133 | G    | C3'-C2'-C1' | -6.70 | 96.14       | 101.50   |
| 8   | CB    | 2230 | G    | O4'-C1'-N9  | 6.69  | 113.56      | 108.20   |
| 8   | CB    | 1680 | U    | O4'-C1'-N1  | 6.69  | 113.55      | 108.20   |
| 8   | AB    | 2288 | A    | C5-C6-N1    | -6.69 | 114.36      | 117.70   |
| 8   | CB    | 2697 | G    | C8-N9-C4    | -6.69 | 103.72      | 106.40   |
| 8   | AB    | 1938 | A    | C1'-O4'-C4' | -6.69 | 104.55      | 109.90   |
| 8   | CB    | 871  | U    | N1-C1'-C2'  | -6.69 | 104.64      | 112.00   |
| 8   | CB    | 1124 | G    | O4'-C1'-N9  | -6.69 | 102.85      | 108.20   |
| 33  | BA    | 1392 | G    | N9-C1'-C2'  | -6.69 | 104.64      | 112.00   |
| 8   | AB    | 794  | A    | P-O3'-C3'   | 6.68  | 127.72      | 119.70   |
| 8   | AB    | 2075 | U    | P-O3'-C3'   | -6.68 | 111.68      | 119.70   |
| 33  | BA    | 502  | A    | O4'-C1'-N9  | 6.68  | 113.54      | 108.20   |
| 8   | AB    | 2206 | C    | P-O3'-C3'   | -6.68 | 111.69      | 119.70   |
| 8   | AB    | 2607 | G    | C4'-C3'-C2' | -6.68 | 95.92       | 102.60   |
| 8   | AB    | 1093 | G    | C3'-C2'-C1' | -6.68 | 96.16       | 101.50   |
| 33  | BA    | 778  | G    | C4'-C3'-C2' | -6.68 | 95.92       | 102.60   |
| 8   | CB    | 1750 | G    | C4'-C3'-C2' | -6.68 | 95.92       | 102.60   |
| 8   | CB    | 1807 | G    | P-O3'-C3'   | -6.68 | 111.69      | 119.70   |
| 8   | AB    | 2738 | A    | P-O3'-C3'   | -6.67 | 111.69      | 119.70   |
| 8   | AB    | 753  | A    | O4'-C1'-N9  | -6.67 | 102.87      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | BA    | 615  | G    | O4'-C1'-N9  | 6.67  | 113.53      | 108.20   |
| 8   | CB    | 444  | C    | C1'-O4'-C4' | -6.67 | 104.57      | 109.90   |
| 33  | DA    | 519  | C    | C4'-C3'-C2' | -6.67 | 95.93       | 102.60   |
| 33  | BA    | 582  | C    | C4'-C3'-C2' | -6.67 | 95.93       | 102.60   |
| 8   | CB    | 1695 | G    | C4'-C3'-C2' | -6.67 | 95.93       | 102.60   |
| 33  | DA    | 1178 | G    | C8-N9-C4    | -6.67 | 103.73      | 106.40   |
| 33  | BA    | 795  | C    | N1-C1'-C2'  | -6.66 | 104.67      | 112.00   |
| 8   | CB    | 2512 | C    | O4'-C1'-N1  | 6.66  | 113.53      | 108.20   |
| 33  | DA    | 911  | U    | P-O3'-C3'   | -6.66 | 111.70      | 119.70   |
| 8   | AB    | 974  | G    | N9-C1'-C2'  | 6.66  | 122.66      | 114.00   |
| 8   | CB    | 215  | G    | C3'-C2'-C1' | -6.66 | 96.17       | 101.50   |
| 8   | AB    | 2223 | G    | P-O3'-C3'   | -6.66 | 111.71      | 119.70   |
| 33  | BA    | 653  | U    | O4'-C1'-N1  | 6.66  | 113.53      | 108.20   |
| 8   | AB    | 1046 | A    | C3'-C2'-C1' | -6.66 | 96.17       | 101.50   |
| 33  | DA    | 1331 | G    | P-O3'-C3'   | 6.66  | 127.69      | 119.70   |
| 33  | BA    | 816  | A    | O3'-P-O5'   | -6.65 | 91.36       | 104.00   |
| 8   | AB    | 38   | A    | O4'-C1'-N9  | -6.65 | 102.88      | 108.20   |
| 8   | CB    | 1283 | G    | C3'-C2'-C1' | -6.64 | 96.18       | 101.50   |
| 8   | AB    | 1914 | C    | O4'-C1'-N1  | 6.64  | 113.51      | 108.20   |
| 33  | DA    | 1158 | C    | C1'-O4'-C4' | -6.64 | 104.59      | 109.90   |
| 8   | AB    | 505  | A    | C1'-O4'-C4' | -6.64 | 104.59      | 109.90   |
| 7   | CA    | 52   | A    | O4'-C1'-N9  | 6.63  | 113.51      | 108.20   |
| 8   | AB    | 968  | C    | C4'-C3'-C2' | -6.63 | 95.97       | 102.60   |
| 8   | AB    | 945  | A    | C1'-O4'-C4' | -6.63 | 104.60      | 109.90   |
| 8   | AB    | 1251 | C    | N1-C2-O2    | 6.63  | 122.88      | 118.90   |
| 8   | AB    | 1976 | U    | C2-N1-C1'   | 6.63  | 125.65      | 117.70   |
| 8   | AB    | 2648 | G    | O4'-C1'-N9  | -6.63 | 102.90      | 108.20   |
| 8   | CB    | 449  | A    | C4'-C3'-C2' | -6.63 | 95.97       | 102.60   |
| 33  | DA    | 1408 | A    | C3'-C2'-C1' | -6.63 | 96.20       | 101.50   |
| 7   | AA    | 109  | A    | C4'-C3'-C2' | -6.62 | 95.98       | 102.60   |
| 8   | CB    | 307  | G    | C4'-C3'-C2' | -6.62 | 95.98       | 102.60   |
| 8   | CB    | 1982 | U    | P-O3'-C3'   | -6.62 | 111.75      | 119.70   |
| 8   | CB    | 2629 | U    | C1'-O4'-C4' | -6.62 | 104.60      | 109.90   |
| 8   | CB    | 615  | U    | C3'-C2'-C1' | -6.62 | 96.20       | 101.50   |
| 33  | DA    | 1432 | G    | C8-N9-C4    | -6.62 | 103.75      | 106.40   |
| 8   | CB    | 1161 | C    | C4'-C3'-C2' | -6.62 | 95.98       | 102.60   |
| 8   | CB    | 465  | G    | C3'-C2'-C1' | 6.62  | 106.79      | 101.50   |
| 8   | CB    | 2718 | G    | O4'-C1'-N9  | 6.62  | 113.49      | 108.20   |
| 8   | CB    | 408  | G    | C3'-C2'-C1' | -6.61 | 96.21       | 101.50   |
| 8   | AB    | 2224 | G    | O4'-C1'-N9  | -6.61 | 102.91      | 108.20   |
| 33  | DA    | 1501 | C    | C6-N1-C2    | 6.61  | 122.94      | 120.30   |
| 33  | BA    | 759  | A    | O4'-C1'-N9  | -6.61 | 102.92      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 783  | A    | N9-C1'-C2'  | -6.61 | 104.73      | 112.00   |
| 33  | DA    | 1345 | U    | C1'-O4'-C4' | -6.61 | 104.61      | 109.90   |
| 8   | AB    | 1633 | G    | O4'-C1'-N9  | -6.60 | 102.92      | 108.20   |
| 33  | DA    | 1464 | U    | O4'-C1'-N1  | 6.60  | 113.48      | 108.20   |
| 8   | CB    | 276  | U    | O4'-C1'-N1  | 6.60  | 113.48      | 108.20   |
| 8   | AB    | 2729 | G    | O4'-C1'-N9  | 6.60  | 113.48      | 108.20   |
| 33  | BA    | 798  | U    | C4'-C3'-C2' | -6.60 | 96.00       | 102.60   |
| 8   | AB    | 250  | G    | O4'-C4'-C3' | -6.60 | 97.40       | 104.00   |
| 8   | AB    | 745  | G    | C4'-C3'-C2' | -6.60 | 96.00       | 102.60   |
| 8   | CB    | 982  | C    | N3-C4-C5    | -6.59 | 119.26      | 121.90   |
| 8   | CB    | 2631 | G    | C3'-C2'-C1' | -6.59 | 96.22       | 101.50   |
| 8   | AB    | 479  | A    | O4'-C1'-C2' | -6.59 | 99.21       | 105.80   |
| 8   | AB    | 2750 | A    | C1'-O4'-C4' | -6.59 | 104.63      | 109.90   |
| 8   | CB    | 571  | U    | P-O3'-C3'   | 6.59  | 127.61      | 119.70   |
| 33  | DA    | 1248 | A    | C1'-O4'-C4' | -6.59 | 104.63      | 109.90   |
| 8   | AB    | 1695 | G    | C4'-C3'-C2' | -6.59 | 96.01       | 102.60   |
| 8   | CB    | 559  | G    | N1-C6-O6    | 6.59  | 123.85      | 119.90   |
| 8   | CB    | 2456 | C    | P-O3'-C3'   | -6.59 | 111.79      | 119.70   |
| 33  | DA    | 1293 | C    | C3'-C2'-C1' | -6.59 | 96.23       | 101.50   |
| 8   | AB    | 260  | G    | C4'-C3'-C2' | -6.59 | 96.01       | 102.60   |
| 8   | AB    | 1369 | G    | N1-C6-O6    | 6.59  | 123.85      | 119.90   |
| 8   | AB    | 2543 | G    | P-O3'-C3'   | -6.59 | 111.80      | 119.70   |
| 8   | CB    | 2156 | G    | O4'-C1'-N9  | 6.59  | 113.47      | 108.20   |
| 33  | DA    | 306  | A    | C1'-O4'-C4' | -6.59 | 104.63      | 109.90   |
| 33  | BA    | 1001 | C    | C3'-C2'-C1' | -6.58 | 96.23       | 101.50   |
| 8   | AB    | 1945 | G    | P-O3'-C3'   | 6.58  | 127.60      | 119.70   |
| 8   | AB    | 2800 | A    | C4'-C3'-C2' | -6.58 | 96.02       | 102.60   |
| 8   | CB    | 307  | G    | P-O3'-C3'   | 6.58  | 127.60      | 119.70   |
| 8   | CB    | 675  | A    | C3'-C2'-C1' | 6.58  | 106.76      | 101.50   |
| 33  | DA    | 223  | A    | O4'-C1'-N9  | 6.58  | 113.46      | 108.20   |
| 8   | AB    | 748  | G    | O4'-C1'-N9  | 6.58  | 113.46      | 108.20   |
| 8   | CB    | 1657 | U    | P-O3'-C3'   | -6.58 | 111.81      | 119.70   |
| 8   | AB    | 571  | U    | N1-C1'-C2'  | 6.57  | 122.54      | 114.00   |
| 8   | AB    | 1378 | A    | N9-C1'-C2'  | -6.57 | 104.77      | 112.00   |
| 33  | DA    | 640  | A    | O4'-C1'-N9  | 6.57  | 113.46      | 108.20   |
| 8   | AB    | 1283 | G    | C3'-C2'-C1' | -6.57 | 96.24       | 101.50   |
| 8   | CB    | 64   | A    | O4'-C1'-N9  | 6.57  | 113.46      | 108.20   |
| 33  | BA    | 501  | C    | O4'-C1'-N1  | 6.57  | 113.45      | 108.20   |
| 8   | AB    | 1997 | C    | O4'-C1'-N1  | 6.57  | 113.45      | 108.20   |
| 8   | AB    | 2762 | C    | O4'-C1'-N1  | -6.57 | 102.95      | 108.20   |
| 8   | CB    | 940  | G    | C4'-C3'-C2' | -6.57 | 96.03       | 102.60   |
| 33  | DA    | 861  | G    | C4'-C3'-C2' | -6.57 | 96.03       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 579  | G    | O4'-C1'-N9  | -6.56 | 102.95      | 108.20   |
| 8   | AB    | 796  | C    | C4'-C3'-C2' | -6.56 | 96.04       | 102.60   |
| 8   | AB    | 1819 | A    | P-O3'-C3'   | 6.56  | 127.57      | 119.70   |
| 8   | CB    | 458  | G    | N3-C4-N9    | -6.56 | 122.06      | 126.00   |
| 8   | CB    | 863  | A    | O4'-C1'-N9  | -6.56 | 102.95      | 108.20   |
| 33  | BA    | 733  | G    | C3'-C2'-C1' | -6.56 | 96.25       | 101.50   |
| 8   | CB    | 1035 | U    | C3'-C2'-C1' | -6.56 | 96.25       | 101.50   |
| 33  | DA    | 519  | C    | N1-C2-O2    | 6.56  | 122.83      | 118.90   |
| 8   | CB    | 2297 | A    | O4'-C1'-N9  | 6.55  | 113.44      | 108.20   |
| 8   | AB    | 265  | A    | C4'-C3'-C2' | -6.55 | 96.05       | 102.60   |
| 8   | AB    | 1204 | A    | C1'-O4'-C4' | -6.55 | 104.66      | 109.90   |
| 8   | AB    | 1807 | G    | P-O3'-C3'   | -6.55 | 111.84      | 119.70   |
| 8   | AB    | 2757 | A    | O4'-C1'-N9  | -6.55 | 102.96      | 108.20   |
| 33  | BA    | 773  | G    | C1'-O4'-C4' | -6.55 | 104.66      | 109.90   |
| 8   | CB    | 278  | A    | C3'-C2'-C1' | -6.55 | 96.26       | 101.50   |
| 8   | CB    | 748  | G    | C3'-C2'-C1' | 6.54  | 106.73      | 101.50   |
| 8   | AB    | 592  | A    | P-O3'-C3'   | -6.54 | 111.85      | 119.70   |
| 33  | DA    | 52   | C    | C6-N1-C2    | -6.54 | 117.68      | 120.30   |
| 33  | DA    | 886  | G    | N3-C4-C5    | -6.54 | 125.33      | 128.60   |
| 8   | AB    | 1598 | A    | N1-C2-N3    | 6.54  | 132.57      | 129.30   |
| 8   | CB    | 1162 | G    | N1-C6-O6    | 6.54  | 123.82      | 119.90   |
| 33  | DA    | 702  | A    | C3'-C2'-C1' | -6.54 | 96.27       | 101.50   |
| 33  | DA    | 1414 | U    | P-O3'-C3'   | -6.54 | 111.86      | 119.70   |
| 33  | DA    | 1529 | G    | C5'-C4'-O4' | 6.53  | 116.94      | 109.10   |
| 8   | AB    | 1199 | U    | P-O3'-C3'   | 6.53  | 127.54      | 119.70   |
| 33  | DA    | 792  | A    | C3'-C2'-C1' | -6.53 | 96.28       | 101.50   |
| 33  | DA    | 1421 | G    | N3-C4-C5    | -6.53 | 125.33      | 128.60   |
| 8   | AB    | 974  | G    | C4-C5-N7    | 6.53  | 113.41      | 110.80   |
| 33  | BA    | 1490 | U    | C3'-C2'-C1' | -6.53 | 96.28       | 101.50   |
| 33  | DA    | 682  | G    | P-O3'-C3'   | -6.52 | 111.87      | 119.70   |
| 8   | CB    | 141  | G    | P-O3'-C3'   | 6.52  | 127.53      | 119.70   |
| 8   | CB    | 797  | G    | O4'-C1'-N9  | 6.52  | 113.42      | 108.20   |
| 8   | AB    | 2012 | G    | P-O3'-C3'   | -6.52 | 111.88      | 119.70   |
| 33  | BA    | 306  | A    | C1'-O4'-C4' | -6.52 | 104.68      | 109.90   |
| 8   | AB    | 2351 | G    | C4'-C3'-C2' | -6.52 | 96.08       | 102.60   |
| 33  | BA    | 40   | C    | P-O3'-C3'   | -6.52 | 111.88      | 119.70   |
| 33  | DA    | 266  | G    | P-O3'-C3'   | 6.52  | 127.52      | 119.70   |
| 33  | DA    | 900  | A    | O4'-C1'-N9  | -6.52 | 102.98      | 108.20   |
| 8   | AB    | 222  | A    | O4'-C1'-N9  | 6.52  | 113.41      | 108.20   |
| 8   | AB    | 658  | U    | P-O3'-C3'   | -6.51 | 111.88      | 119.70   |
| 8   | CB    | 465  | G    | N3-C4-C5    | -6.51 | 125.34      | 128.60   |
| 8   | CB    | 2687 | U    | C6-N1-C2    | -6.51 | 117.09      | 121.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2685 | G    | C8-N9-C4    | -6.51 | 103.80      | 106.40   |
| 33  | BA    | 1117 | A    | C1'-O4'-C4' | -6.51 | 104.69      | 109.90   |
| 8   | CB    | 2032 | G    | O4'-C1'-N9  | -6.51 | 102.99      | 108.20   |
| 8   | CB    | 2692 | G    | C3'-C2'-C1' | 6.51  | 106.71      | 101.50   |
| 8   | CB    | 2849 | U    | O4'-C1'-N1  | -6.51 | 102.99      | 108.20   |
| 33  | DA    | 1250 | A    | C5'-C4'-O4' | 6.51  | 116.91      | 109.10   |
| 8   | CB    | 370  | G    | C4'-C3'-C2' | -6.51 | 96.09       | 102.60   |
| 8   | CB    | 468  | G    | C4'-C3'-C2' | -6.51 | 96.09       | 102.60   |
| 8   | CB    | 2630 | G    | O4'-C1'-N9  | 6.51  | 113.41      | 108.20   |
| 8   | CB    | 2776 | A    | C4'-C3'-C2' | -6.51 | 96.09       | 102.60   |
| 8   | AB    | 1830 | C    | O4'-C1'-N1  | -6.50 | 103.00      | 108.20   |
| 8   | AB    | 2073 | C    | C4'-C3'-C2' | -6.50 | 96.10       | 102.60   |
| 8   | CB    | 614  | A    | N9-C1'-C2'  | 6.50  | 122.45      | 114.00   |
| 33  | DA    | 859  | G    | C1'-O4'-C4' | -6.50 | 104.70      | 109.90   |
| 8   | CB    | 1819 | A    | O5'-C5'-C4' | -6.50 | 99.35       | 111.70   |
| 8   | CB    | 2880 | C    | C4'-C3'-C2' | -6.50 | 96.10       | 102.60   |
| 8   | AB    | 546  | U    | O4'-C1'-N1  | 6.50  | 113.40      | 108.20   |
| 33  | BA    | 1107 | C    | C4'-C3'-C2' | -6.49 | 96.11       | 102.60   |
| 8   | CB    | 1010 | A    | C3'-C2'-C1' | -6.49 | 96.31       | 101.50   |
| 8   | CB    | 2876 | G    | C1'-O4'-C4' | -6.49 | 104.71      | 109.90   |
| 8   | AB    | 2604 | U    | C4'-C3'-C2' | -6.49 | 96.11       | 102.60   |
| 8   | CB    | 1659 | G    | O4'-C1'-N9  | 6.49  | 113.39      | 108.20   |
| 8   | AB    | 458  | G    | N3-C4-N9    | -6.49 | 122.11      | 126.00   |
| 8   | CB    | 1199 | U    | N1-C2-O2    | -6.49 | 118.26      | 122.80   |
| 8   | CB    | 1266 | G    | O4'-C1'-C2' | -6.49 | 99.31       | 105.80   |
| 8   | AB    | 2207 | C    | P-O3'-C3'   | -6.49 | 111.92      | 119.70   |
| 33  | DA    | 895  | G    | C4-N9-C1'   | 6.49  | 134.93      | 126.50   |
| 8   | AB    | 1955 | U    | O4'-C1'-N1  | 6.48  | 113.39      | 108.20   |
| 8   | AB    | 1975 | G    | P-O3'-C3'   | -6.48 | 111.92      | 119.70   |
| 33  | BA    | 1085 | U    | C4'-C3'-C2' | -6.48 | 96.12       | 102.60   |
| 8   | CB    | 1204 | A    | C1'-O4'-C4' | -6.48 | 104.72      | 109.90   |
| 8   | AB    | 670  | A    | P-O3'-C3'   | 6.48  | 127.47      | 119.70   |
| 8   | CB    | 2653 | U    | O4'-C1'-N1  | 6.48  | 113.38      | 108.20   |
| 8   | AB    | 207  | A    | O4'-C1'-N9  | 6.48  | 113.38      | 108.20   |
| 33  | DA    | 895  | G    | O4'-C1'-N9  | -6.47 | 103.02      | 108.20   |
| 33  | BA    | 1035 | A    | C4'-C3'-C2' | -6.47 | 96.13       | 102.60   |
| 8   | AB    | 941  | A    | C1'-O4'-C4' | -6.47 | 104.72      | 109.90   |
| 8   | AB    | 2363 | G    | P-O3'-C3'   | -6.47 | 111.94      | 119.70   |
| 33  | DA    | 1075 | U    | C3'-C2'-C1' | 6.47  | 106.67      | 101.50   |
| 33  | DA    | 52   | C    | O4'-C1'-N1  | 6.47  | 113.37      | 108.20   |
| 33  | DA    | 396  | C    | P-O3'-C3'   | -6.47 | 111.94      | 119.70   |
| 8   | AB    | 871  | U    | C4'-C3'-C2' | -6.46 | 96.14       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2011 | U    | P-O3'-C3'   | -6.46 | 111.94      | 119.70   |
| 8   | AB    | 408  | G    | P-O3'-C3'   | 6.46  | 127.45      | 119.70   |
| 8   | AB    | 444  | C    | C1'-O4'-C4' | -6.46 | 104.73      | 109.90   |
| 8   | CB    | 2832 | U    | O4'-C1'-N1  | 6.46  | 113.37      | 108.20   |
| 33  | DA    | 902  | G    | C1'-O4'-C4' | -6.46 | 104.73      | 109.90   |
| 8   | AB    | 2408 | U    | O4'-C1'-N1  | -6.46 | 103.03      | 108.20   |
| 33  | DA    | 622  | A    | N9-C1'-C2'  | -6.46 | 104.90      | 112.00   |
| 8   | CB    | 1306 | C    | C4'-C3'-C2' | -6.45 | 96.15       | 102.60   |
| 8   | AB    | 2370 | G    | C4'-C3'-C2' | -6.45 | 96.15       | 102.60   |
| 8   | CB    | 1763 | G    | C8-N9-C4    | -6.45 | 103.82      | 106.40   |
| 8   | CB    | 195  | A    | C3'-C2'-C1' | 6.45  | 106.66      | 101.50   |
| 8   | AB    | 2460 | U    | O4'-C1'-N1  | -6.45 | 103.04      | 108.20   |
| 8   | CB    | 2092 | U    | C1'-O4'-C4' | -6.45 | 104.74      | 109.90   |
| 8   | CB    | 1975 | G    | P-O3'-C3'   | -6.45 | 111.96      | 119.70   |
| 33  | DA    | 609  | A    | C4'-C3'-C2' | -6.45 | 96.15       | 102.60   |
| 8   | AB    | 1271 | G    | C4'-C3'-C2' | -6.44 | 96.16       | 102.60   |
| 33  | DA    | 902  | G    | N3-C4-N9    | -6.44 | 122.14      | 126.00   |
| 33  | DA    | 1397 | C    | O4'-C1'-N1  | -6.44 | 103.05      | 108.20   |
| 33  | BA    | 1059 | C    | C3'-C2'-C1' | -6.44 | 96.35       | 101.50   |
| 8   | CB    | 1261 | C    | O4'-C1'-N1  | -6.44 | 103.05      | 108.20   |
| 8   | AB    | 2011 | U    | N1-C1'-C2'  | -6.44 | 104.92      | 112.00   |
| 33  | DA    | 1528 | U    | C1'-O4'-C4' | -6.44 | 104.75      | 109.90   |
| 8   | CB    | 544  | C    | O4'-C1'-N1  | 6.44  | 113.35      | 108.20   |
| 8   | CB    | 1191 | G    | N9-C1'-C2'  | -6.44 | 104.92      | 112.00   |
| 33  | DA    | 765  | G    | C8-N9-C4    | -6.44 | 103.83      | 106.40   |
| 33  | DA    | 1435 | G    | C8-N9-C4    | -6.44 | 103.83      | 106.40   |
| 8   | CB    | 2044 | C    | C3'-C2'-C1' | -6.44 | 96.35       | 101.50   |
| 8   | AB    | 2310 | C    | C3'-C2'-C1' | -6.43 | 96.35       | 101.50   |
| 8   | AB    | 1768 | C    | C4'-C3'-C2' | -6.43 | 96.17       | 102.60   |
| 8   | AB    | 2469 | A    | C4'-C3'-C2' | -6.43 | 96.17       | 102.60   |
| 33  | BA    | 513  | C    | C1'-O4'-C4' | -6.43 | 104.75      | 109.90   |
| 8   | CB    | 1156 | A    | C3'-C2'-C1' | -6.43 | 96.35       | 101.50   |
| 33  | DA    | 710  | G    | N9-C1'-C2'  | -6.43 | 104.92      | 112.00   |
| 8   | CB    | 1327 | A    | C3'-C2'-C1' | 6.43  | 106.64      | 101.50   |
| 33  | BA    | 108  | G    | C4'-C3'-C2' | -6.43 | 96.17       | 102.60   |
| 8   | AB    | 1973 | G    | P-O3'-C3'   | 6.42  | 127.41      | 119.70   |
| 8   | CB    | 2893 | A    | C1'-O4'-C4' | -6.42 | 104.76      | 109.90   |
| 33  | DA    | 527  | G    | N3-C4-N9    | -6.42 | 122.15      | 126.00   |
| 8   | CB    | 687  | C    | N1-C2-O2    | -6.42 | 115.05      | 118.90   |
| 8   | CB    | 2233 | U    | C4'-C3'-C2' | -6.42 | 96.18       | 102.60   |
| 8   | CB    | 1988 | G    | C4'-C3'-C2' | -6.42 | 96.18       | 102.60   |
| 33  | DA    | 1421 | G    | C4'-C3'-C2' | -6.42 | 96.18       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 658  | U    | P-O3'-C3'   | -6.42 | 112.00      | 119.70   |
| 8   | CB    | 2045 | C    | C6-N1-C2    | 6.42  | 122.87      | 120.30   |
| 33  | DA    | 128  | G    | C3'-C2'-C1' | 6.42  | 106.63      | 101.50   |
| 33  | DA    | 1425 | U    | C5-C4-O4    | -6.42 | 122.05      | 125.90   |
| 33  | BA    | 165  | G    | P-O3'-C3'   | 6.42  | 127.40      | 119.70   |
| 33  | DA    | 1426 | G    | N9-C1'-C2'  | -6.41 | 104.95      | 112.00   |
| 8   | AB    | 711  | G    | C4'-C3'-C2' | -6.41 | 96.19       | 102.60   |
| 33  | BA    | 1266 | G    | C3'-C2'-C1' | -6.41 | 96.37       | 101.50   |
| 8   | CB    | 42   | A    | C3'-C2'-C1' | -6.41 | 96.37       | 101.50   |
| 33  | DA    | 1517 | G    | P-O3'-C3'   | -6.41 | 112.01      | 119.70   |
| 8   | AB    | 258  | G    | C3'-C2'-C1' | -6.41 | 96.37       | 101.50   |
| 8   | AB    | 1828 | G    | O4'-C1'-N9  | -6.41 | 103.08      | 108.20   |
| 33  | DA    | 165  | G    | P-O3'-C3'   | 6.41  | 127.39      | 119.70   |
| 8   | AB    | 1352 | U    | C4'-C3'-C2' | -6.40 | 96.20       | 102.60   |
| 8   | CB    | 782  | A    | O4'-C1'-N9  | 6.40  | 113.32      | 108.20   |
| 8   | CB    | 1092 | C    | C4'-C3'-C2' | -6.40 | 96.20       | 102.60   |
| 8   | AB    | 286  | U    | O4'-C1'-N1  | 6.40  | 113.32      | 108.20   |
| 33  | BA    | 1269 | A    | C1'-O4'-C4' | -6.40 | 104.78      | 109.90   |
| 8   | CB    | 509  | C    | C1'-O4'-C4' | -6.40 | 104.78      | 109.90   |
| 33  | DA    | 528  | C    | C1'-O4'-C4' | -6.40 | 104.78      | 109.90   |
| 8   | CB    | 587  | C    | C2-N1-C1'   | 6.40  | 125.84      | 118.80   |
| 8   | CB    | 1914 | C    | O4'-C1'-N1  | 6.39  | 113.31      | 108.20   |
| 8   | AB    | 250  | G    | O4'-C1'-N9  | 6.39  | 113.31      | 108.20   |
| 8   | CB    | 1913 | A    | C1'-O4'-C4' | -6.39 | 104.78      | 109.90   |
| 8   | CB    | 994  | C    | O4'-C1'-N1  | -6.39 | 103.09      | 108.20   |
| 8   | CB    | 2550 | G    | O4'-C1'-N9  | -6.39 | 103.09      | 108.20   |
| 8   | CB    | 2553 | G    | C4'-C3'-C2' | -6.39 | 96.21       | 102.60   |
| 7   | CA    | 40   | U    | O4'-C1'-N1  | 6.39  | 113.31      | 108.20   |
| 8   | CB    | 575  | A    | C3'-C2'-C1' | 6.39  | 106.61      | 101.50   |
| 33  | DA    | 902  | G    | N1-C6-O6    | -6.38 | 116.07      | 119.90   |
| 8   | AB    | 1758 | U    | O4'-C1'-N1  | -6.38 | 103.09      | 108.20   |
| 7   | CA    | 55   | U    | C4'-C3'-C2' | -6.38 | 96.22       | 102.60   |
| 33  | BA    | 765  | G    | C4-N9-C1'   | 6.38  | 134.79      | 126.50   |
| 33  | DA    | 690  | G    | N9-C1'-C2'  | -6.38 | 104.98      | 112.00   |
| 8   | AB    | 1378 | A    | O4'-C1'-N9  | 6.38  | 113.30      | 108.20   |
| 8   | AB    | 2732 | G    | C6-C5-N7    | -6.38 | 126.57      | 130.40   |
| 33  | BA    | 807  | A    | O4'-C4'-C3' | -6.38 | 97.62       | 104.00   |
| 8   | CB    | 1658 | C    | C3'-C2'-C1' | -6.38 | 96.40       | 101.50   |
| 8   | CB    | 1699 | G    | O4'-C1'-C2' | -6.37 | 99.43       | 105.80   |
| 8   | CB    | 105  | C    | C4'-C3'-C2' | -6.37 | 96.23       | 102.60   |
| 33  | DA    | 669  | G    | C6-C5-N7    | -6.37 | 126.58      | 130.40   |
| 8   | CB    | 2581 | G    | C8-N9-C4    | -6.37 | 103.85      | 106.40   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 458  | G    | N3-C4-C5    | 6.37  | 131.78      | 128.60   |
| 8   | CB    | 571  | U    | N1-C1'-C2'  | 6.37  | 122.28      | 114.00   |
| 8   | CB    | 1322 | A    | C4'-C3'-C2' | -6.37 | 96.23       | 102.60   |
| 8   | CB    | 1815 | A    | C4'-C3'-C2' | -6.37 | 96.23       | 102.60   |
| 8   | CB    | 101  | A    | P-O3'-C3'   | 6.37  | 127.34      | 119.70   |
| 8   | CB    | 2022 | U    | P-O3'-C3'   | -6.37 | 112.06      | 119.70   |
| 33  | BA    | 1346 | A    | C1'-O4'-C4' | -6.36 | 104.81      | 109.90   |
| 33  | DA    | 135  | C    | C3'-C2'-C1' | -6.36 | 96.41       | 101.50   |
| 8   | AB    | 509  | C    | C1'-O4'-C4' | -6.36 | 104.81      | 109.90   |
| 33  | BA    | 451  | A    | P-O3'-C3'   | 6.36  | 127.33      | 119.70   |
| 8   | AB    | 546  | U    | C1'-O4'-C4' | -6.36 | 104.81      | 109.90   |
| 8   | CB    | 410  | G    | C8-N9-C4    | -6.36 | 103.86      | 106.40   |
| 8   | AB    | 2776 | A    | C3'-C2'-C1' | -6.36 | 96.41       | 101.50   |
| 8   | CB    | 1824 | G    | O4'-C1'-N9  | 6.36  | 113.29      | 108.20   |
| 33  | DA    | 1483 | A    | O4'-C1'-N9  | -6.36 | 103.12      | 108.20   |
| 8   | CB    | 974  | G    | N9-C1'-C2'  | 6.35  | 122.26      | 114.00   |
| 8   | CB    | 1606 | C    | P-O3'-C3'   | 6.35  | 127.33      | 119.70   |
| 8   | AB    | 571  | U    | P-O3'-C3'   | 6.35  | 127.32      | 119.70   |
| 33  | BA    | 972  | C    | C4'-C3'-C2' | -6.35 | 96.25       | 102.60   |
| 8   | AB    | 1348 | C    | C6-N1-C2    | 6.35  | 122.84      | 120.30   |
| 8   | AB    | 2221 | G    | P-O3'-C3'   | -6.34 | 112.09      | 119.70   |
| 8   | CB    | 204  | A    | C1'-O4'-C4' | -6.34 | 104.83      | 109.90   |
| 8   | AB    | 50   | U    | O4'-C1'-N1  | 6.34  | 113.28      | 108.20   |
| 8   | CB    | 2213 | U    | C2-N1-C1'   | 6.34  | 125.31      | 117.70   |
| 33  | BA    | 644  | U    | C4'-C3'-C2' | -6.34 | 96.26       | 102.60   |
| 8   | AB    | 123  | G    | C3'-C2'-C1' | -6.34 | 96.43       | 101.50   |
| 8   | AB    | 1566 | A    | N9-C1'-C2'  | 6.34  | 122.24      | 114.00   |
| 8   | CB    | 445  | C    | C6-N1-C2    | 6.34  | 122.84      | 120.30   |
| 33  | BA    | 1124 | G    | C1'-O4'-C4' | -6.34 | 104.83      | 109.90   |
| 33  | DA    | 1239 | A    | C1'-O4'-C4' | -6.34 | 104.83      | 109.90   |
| 33  | DA    | 1416 | G    | C8-N9-C4    | -6.34 | 103.86      | 106.40   |
| 33  | DA    | 1250 | A    | O4'-C1'-N9  | 6.33  | 113.27      | 108.20   |
| 33  | BA    | 346  | G    | O4'-C1'-N9  | 6.33  | 113.27      | 108.20   |
| 33  | BA    | 1466 | C    | P-O3'-C3'   | -6.33 | 112.10      | 119.70   |
| 8   | CB    | 1818 | U    | C1'-O4'-C4' | -6.33 | 104.83      | 109.90   |
| 33  | DA    | 614  | C    | P-O3'-C3'   | -6.33 | 112.10      | 119.70   |
| 33  | DA    | 859  | G    | P-O3'-C3'   | -6.33 | 112.10      | 119.70   |
| 8   | AB    | 701  | G    | C4'-C3'-C2' | -6.33 | 96.27       | 102.60   |
| 8   | AB    | 1091 | G    | C4'-C3'-C2' | -6.33 | 96.27       | 102.60   |
| 33  | DA    | 1335 | U    | C4'-C3'-C2' | -6.33 | 96.27       | 102.60   |
| 8   | AB    | 291  | G    | C3'-C2'-C1' | -6.33 | 96.44       | 101.50   |
| 33  | BA    | 675  | A    | C4'-C3'-C2' | -6.33 | 96.28       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | BA    | 266  | G    | P-O3'-C3'   | 6.32  | 127.29      | 119.70   |
| 33  | BA    | 797  | C    | C4'-C3'-C2' | -6.32 | 96.28       | 102.60   |
| 8   | CB    | 2642 | G    | C8-N9-C4    | -6.32 | 103.87      | 106.40   |
| 8   | AB    | 528  | A    | P-O5'-C5'   | -6.32 | 110.78      | 120.90   |
| 7   | CA    | 116  | G    | C4'-C3'-C2' | -6.32 | 96.28       | 102.60   |
| 8   | CB    | 1989 | G    | C8-N9-C4    | -6.32 | 103.87      | 106.40   |
| 33  | DA    | 1021 | A    | C4'-C3'-C2' | -6.32 | 96.28       | 102.60   |
| 33  | DA    | 861  | G    | C3'-C2'-C1' | -6.32 | 96.45       | 101.50   |
| 8   | AB    | 1601 | G    | C4'-C3'-C2' | -6.32 | 96.28       | 102.60   |
| 8   | AB    | 2250 | G    | N3-C4-N9    | -6.32 | 122.21      | 126.00   |
| 8   | CB    | 2251 | G    | C4'-C3'-C2' | -6.32 | 96.28       | 102.60   |
| 8   | AB    | 8    | C    | P-O3'-C3'   | -6.31 | 112.13      | 119.70   |
| 33  | BA    | 429  | U    | C3'-C2'-C1' | -6.31 | 96.45       | 101.50   |
| 8   | CB    | 551  | G    | C3'-C2'-C1' | -6.31 | 96.45       | 101.50   |
| 8   | CB    | 2576 | G    | N3-C4-N9    | 6.31  | 129.79      | 126.00   |
| 8   | AB    | 2372 | U    | C3'-C2'-C1' | -6.30 | 96.46       | 101.50   |
| 8   | AB    | 2576 | G    | O4'-C1'-N9  | 6.30  | 113.24      | 108.20   |
| 33  | BA    | 986  | U    | C4'-C3'-C2' | -6.30 | 96.30       | 102.60   |
| 8   | AB    | 1820 | U    | N3-C2-O2    | -6.30 | 117.79      | 122.20   |
| 33  | BA    | 239  | U    | P-O3'-C3'   | 6.30  | 127.26      | 119.70   |
| 8   | CB    | 2017 | U    | O4'-C4'-C3' | -6.30 | 97.70       | 104.00   |
| 33  | DA    | 702  | A    | C4'-C3'-C2' | -6.30 | 96.30       | 102.60   |
| 8   | AB    | 614  | A    | N9-C1'-C2'  | 6.30  | 122.19      | 114.00   |
| 8   | AB    | 2592 | G    | O4'-C1'-N9  | 6.30  | 113.24      | 108.20   |
| 8   | AB    | 2751 | G    | P-O3'-C3'   | 6.30  | 127.26      | 119.70   |
| 8   | CB    | 465  | G    | C4-C5-C6    | 6.30  | 122.58      | 118.80   |
| 8   | CB    | 599  | A    | C4'-C3'-C2' | -6.30 | 96.30       | 102.60   |
| 8   | CB    | 1273 | U    | O4'-C1'-N1  | -6.30 | 103.16      | 108.20   |
| 8   | CB    | 1610 | A    | C8-N9-C4    | -6.30 | 103.28      | 105.80   |
| 33  | DA    | 801  | U    | C3'-C2'-C1' | 6.29  | 106.54      | 101.50   |
| 8   | CB    | 1633 | G    | N3-C4-C5    | -6.29 | 125.45      | 128.60   |
| 33  | DA    | 713  | G    | N1-C6-O6    | 6.29  | 123.67      | 119.90   |
| 8   | AB    | 2011 | U    | P-O3'-C3'   | -6.29 | 112.15      | 119.70   |
| 33  | BA    | 809  | G    | P-O3'-C3'   | -6.29 | 112.16      | 119.70   |
| 33  | BA    | 1064 | G    | C1'-O4'-C4' | -6.29 | 104.87      | 109.90   |
| 8   | CB    | 718  | A    | O4'-C1'-N9  | 6.29  | 113.23      | 108.20   |
| 8   | CB    | 2288 | A    | N3-C4-C5    | -6.29 | 122.40      | 126.80   |
| 8   | CB    | 465  | G    | N9-C1'-C2'  | 6.29  | 122.17      | 114.00   |
| 33  | DA    | 1428 | A    | O4'-C1'-N9  | -6.29 | 103.17      | 108.20   |
| 33  | DA    | 1475 | G    | C4'-C3'-C2' | -6.29 | 96.31       | 102.60   |
| 8   | AB    | 2448 | A    | O4'-C1'-N9  | -6.28 | 103.17      | 108.20   |
| 8   | AB    | 2581 | G    | C3'-C2'-C1' | 6.28  | 106.53      | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 592  | A    | P-O3'-C3'   | -6.28 | 112.16      | 119.70   |
| 33  | BA    | 251  | G    | C3'-C2'-C1' | 6.28  | 106.53      | 101.50   |
| 33  | BA    | 563  | A    | O4'-C1'-N9  | 6.28  | 113.22      | 108.20   |
| 33  | BA    | 616  | G    | C3'-C2'-C1' | -6.28 | 96.48       | 101.50   |
| 8   | CB    | 1301 | A    | O4'-C1'-C2' | -6.28 | 99.52       | 105.80   |
| 33  | DA    | 784  | A    | O4'-C1'-N9  | 6.28  | 113.22      | 108.20   |
| 8   | AB    | 465  | G    | N9-C1'-C2'  | 6.28  | 122.16      | 114.00   |
| 33  | BA    | 430  | A    | P-O3'-C3'   | 6.28  | 127.23      | 119.70   |
| 33  | DA    | 765  | G    | C8-N9-C1'   | -6.28 | 118.84      | 127.00   |
| 8   | CB    | 1913 | A    | P-O3'-C3'   | 6.28  | 127.23      | 119.70   |
| 33  | DA    | 1422 | G    | P-O3'-C3'   | 6.28  | 127.23      | 119.70   |
| 8   | AB    | 1841 | U    | P-O3'-C3'   | -6.27 | 112.17      | 119.70   |
| 33  | DA    | 1226 | C    | C4'-C3'-C2' | -6.27 | 96.33       | 102.60   |
| 8   | AB    | 779  | U    | C4'-C3'-C2' | -6.27 | 96.33       | 102.60   |
| 8   | AB    | 2247 | A    | O4'-C1'-N9  | -6.27 | 103.18      | 108.20   |
| 8   | AB    | 2391 | G    | P-O3'-C3'   | 6.27  | 127.22      | 119.70   |
| 8   | AB    | 1440 | U    | N1-C1'-C2'  | 6.27  | 122.14      | 114.00   |
| 8   | AB    | 1968 | G    | C4'-C3'-C2' | -6.27 | 96.33       | 102.60   |
| 8   | CB    | 1768 | C    | C3'-C2'-C1' | -6.27 | 96.49       | 101.50   |
| 8   | AB    | 2282 | G    | P-O3'-C3'   | 6.26  | 127.22      | 119.70   |
| 33  | BA    | 1071 | C    | C4'-C3'-C2' | -6.26 | 96.33       | 102.60   |
| 8   | CB    | 322  | A    | C4'-C3'-C2' | -6.26 | 96.33       | 102.60   |
| 8   | CB    | 1451 | C    | C3'-C2'-C1' | 6.26  | 106.51      | 101.50   |
| 8   | AB    | 980  | A    | C3'-C2'-C1' | 6.26  | 106.51      | 101.50   |
| 8   | CB    | 119  | A    | N1-C6-N6    | 6.26  | 122.36      | 118.60   |
| 33  | DA    | 685  | G    | C6-C5-N7    | -6.26 | 126.64      | 130.40   |
| 33  | DA    | 776  | G    | N9-C4-C5    | 6.26  | 107.90      | 105.40   |
| 8   | CB    | 37   | C    | C4'-C3'-C2' | -6.25 | 96.34       | 102.60   |
| 8   | AB    | 940  | G    | C4'-C3'-C2' | -6.25 | 96.35       | 102.60   |
| 8   | CB    | 2465 | C    | C4'-C3'-C2' | -6.25 | 96.35       | 102.60   |
| 33  | DA    | 1421 | G    | P-O3'-C3'   | 6.25  | 127.20      | 119.70   |
| 8   | CB    | 1031 | G    | C3'-C2'-C1' | -6.25 | 96.50       | 101.50   |
| 8   | CB    | 1251 | C    | O4'-C1'-N1  | -6.25 | 103.20      | 108.20   |
| 8   | AB    | 2576 | G    | N3-C4-C5    | -6.25 | 125.48      | 128.60   |
| 8   | AB    | 101  | A    | O4'-C1'-N9  | 6.25  | 113.20      | 108.20   |
| 8   | AB    | 872  | U    | C4'-C3'-C2' | -6.25 | 96.35       | 102.60   |
| 8   | CB    | 701  | G    | C4'-C3'-C2' | -6.25 | 96.35       | 102.60   |
| 8   | CB    | 1789 | A    | P-O3'-C3'   | -6.25 | 112.20      | 119.70   |
| 8   | AB    | 1234 | U    | P-O3'-C3'   | 6.25  | 127.19      | 119.70   |
| 8   | CB    | 2310 | C    | C3'-C2'-C1' | -6.24 | 96.50       | 101.50   |
| 8   | CB    | 2598 | A    | O4'-C1'-N9  | -6.24 | 103.21      | 108.20   |
| 8   | AB    | 2512 | C    | P-O3'-C3'   | -6.24 | 112.21      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 408  | G    | P-O3'-C3'   | 6.24  | 127.19      | 119.70   |
| 8   | AB    | 2453 | A    | P-O3'-C3'   | 6.24  | 127.19      | 119.70   |
| 33  | DA    | 741  | G    | O4'-C1'-N9  | -6.24 | 103.21      | 108.20   |
| 33  | DA    | 913  | A    | P-O3'-C3'   | 6.24  | 127.19      | 119.70   |
| 8   | CB    | 184  | C    | C6-N1-C2    | 6.24  | 122.80      | 120.30   |
| 8   | CB    | 2717 | C    | C4'-C3'-C2' | -6.24 | 96.36       | 102.60   |
| 33  | DA    | 975  | A    | P-O3'-C3'   | 6.24  | 127.18      | 119.70   |
| 33  | DA    | 1393 | U    | C1'-O4'-C4' | -6.24 | 104.91      | 109.90   |
| 8   | AB    | 343  | C    | C3'-C2'-C1' | -6.24 | 96.51       | 101.50   |
| 8   | CB    | 1475 | G    | C3'-C2'-C1' | -6.24 | 96.51       | 101.50   |
| 8   | AB    | 2044 | C    | P-O3'-C3'   | -6.23 | 112.22      | 119.70   |
| 7   | CA    | 19   | C    | C3'-C2'-C1' | -6.23 | 96.51       | 101.50   |
| 33  | BA    | 803  | G    | N9-C1'-C2'  | -6.23 | 105.14      | 112.00   |
| 8   | CB    | 575  | A    | P-O3'-C3'   | 6.23  | 127.18      | 119.70   |
| 8   | CB    | 2585 | U    | C4'-C3'-C2' | -6.23 | 96.37       | 102.60   |
| 8   | AB    | 552  | U    | C3'-C2'-C1' | -6.23 | 96.52       | 101.50   |
| 8   | AB    | 1441 | G    | C4'-C3'-C2' | -6.23 | 96.37       | 102.60   |
| 7   | CA    | 66   | A    | P-O3'-C3'   | 6.23  | 127.18      | 119.70   |
| 8   | AB    | 600  | G    | N9-C1'-C2'  | -6.23 | 105.15      | 112.00   |
| 8   | CB    | 1888 | G    | O4'-C1'-N9  | 6.23  | 113.18      | 108.20   |
| 33  | DA    | 1285 | A    | C1'-O4'-C4' | -6.23 | 104.92      | 109.90   |
| 8   | AB    | 479  | A    | P-O3'-C3'   | 6.23  | 127.17      | 119.70   |
| 8   | CB    | 711  | G    | C4'-C3'-C2' | -6.23 | 96.37       | 102.60   |
| 33  | DA    | 779  | C    | N1-C2-O2    | -6.22 | 115.17      | 118.90   |
| 33  | BA    | 603  | U    | C5-C6-N1    | 6.22  | 125.81      | 122.70   |
| 33  | BA    | 1529 | G    | O4'-C1'-N9  | 6.22  | 113.18      | 108.20   |
| 8   | AB    | 346  | A    | O4'-C1'-N9  | 6.22  | 113.18      | 108.20   |
| 8   | AB    | 2092 | U    | P-O3'-C3'   | 6.22  | 127.17      | 119.70   |
| 8   | AB    | 675  | A    | C3'-C2'-C1' | 6.22  | 106.48      | 101.50   |
| 8   | AB    | 1251 | C    | O4'-C1'-N1  | -6.22 | 103.22      | 108.20   |
| 8   | AB    | 1369 | G    | C6-C5-N7    | -6.22 | 126.67      | 130.40   |
| 8   | AB    | 2201 | G    | C3'-C2'-C1' | -6.22 | 96.52       | 101.50   |
| 8   | CB    | 38   | A    | P-O3'-C3'   | -6.22 | 112.24      | 119.70   |
| 8   | AB    | 90   | U    | C4'-C3'-C2' | -6.22 | 96.38       | 102.60   |
| 8   | AB    | 2451 | A    | C4'-C3'-C2' | -6.22 | 96.38       | 102.60   |
| 8   | CB    | 2880 | C    | C2-N1-C1'   | 6.22  | 125.64      | 118.80   |
| 33  | DA    | 435  | A    | C3'-C2'-C1' | -6.22 | 96.53       | 101.50   |
| 8   | CB    | 920  | A    | C4'-C3'-C2' | -6.21 | 96.39       | 102.60   |
| 33  | DA    | 386  | C    | P-O3'-C3'   | -6.21 | 112.24      | 119.70   |
| 33  | DA    | 927  | G    | N9-C1'-C2'  | -6.21 | 105.17      | 112.00   |
| 33  | DA    | 1234 | C    | O4'-C1'-N1  | 6.21  | 113.17      | 108.20   |
| 8   | AB    | 2747 | G    | C4'-C3'-C2' | -6.21 | 96.39       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 184  | C    | C1'-O4'-C4' | -6.21 | 104.93      | 109.90   |
| 8   | AB    | 1381 | G    | O4'-C1'-N9  | -6.20 | 103.24      | 108.20   |
| 8   | AB    | 2321 | U    | O4'-C1'-N1  | 6.20  | 113.16      | 108.20   |
| 33  | BA    | 806  | C    | C3'-C2'-C1' | 6.20  | 106.46      | 101.50   |
| 8   | CB    | 1889 | A    | C4'-C3'-C2' | -6.20 | 96.40       | 102.60   |
| 33  | DA    | 944  | G    | O4'-C1'-N9  | 6.20  | 113.16      | 108.20   |
| 33  | BA    | 1513 | A    | N9-C1'-C2'  | -6.20 | 105.18      | 112.00   |
| 33  | DA    | 403  | C    | N1-C1'-C2'  | -6.20 | 105.18      | 112.00   |
| 8   | AB    | 2099 | U    | C4'-C3'-C2' | -6.20 | 96.41       | 102.60   |
| 8   | CB    | 462  | C    | C3'-C2'-C1' | -6.19 | 96.55       | 101.50   |
| 8   | AB    | 323  | C    | C1'-O4'-C4' | -6.19 | 104.95      | 109.90   |
| 33  | DA    | 241  | G    | N1-C6-O6    | 6.19  | 123.61      | 119.90   |
| 33  | DA    | 613  | C    | C6-N1-C2    | -6.19 | 117.82      | 120.30   |
| 33  | DA    | 247  | G    | C3'-C2'-C1' | -6.19 | 96.55       | 101.50   |
| 8   | CB    | 449  | A    | P-O3'-C3'   | 6.19  | 127.13      | 119.70   |
| 8   | AB    | 2051 | A    | O4'-C1'-N9  | -6.18 | 103.25      | 108.20   |
| 8   | AB    | 742  | A    | O4'-C1'-N9  | -6.18 | 103.25      | 108.20   |
| 33  | BA    | 1503 | A    | C1'-O4'-C4' | -6.18 | 104.96      | 109.90   |
| 8   | CB    | 2604 | U    | C4'-C3'-C2' | -6.18 | 96.42       | 102.60   |
| 8   | CB    | 2430 | A    | O4'-C1'-N9  | -6.18 | 103.26      | 108.20   |
| 33  | DA    | 233  | C    | C4'-C3'-C2' | -6.18 | 96.42       | 102.60   |
| 8   | AB    | 1825 | U    | P-O3'-C3'   | -6.17 | 112.29      | 119.70   |
| 8   | AB    | 2585 | U    | P-O3'-C3'   | 6.17  | 127.11      | 119.70   |
| 8   | CB    | 1831 | G    | C8-N9-C4    | -6.17 | 103.93      | 106.40   |
| 33  | DA    | 773  | G    | C1'-O4'-C4' | -6.17 | 104.96      | 109.90   |
| 8   | CB    | 2732 | G    | O4'-C1'-N9  | 6.17  | 113.14      | 108.20   |
| 33  | DA    | 494  | G    | C3'-C2'-C1' | 6.17  | 106.44      | 101.50   |
| 33  | DA    | 757  | U    | O4'-C1'-N1  | 6.17  | 113.14      | 108.20   |
| 33  | DA    | 1171 | A    | C3'-C2'-C1' | 6.17  | 106.44      | 101.50   |
| 8   | AB    | 2558 | C    | C6-N1-C2    | 6.17  | 122.77      | 120.30   |
| 8   | CB    | 958  | U    | P-O3'-C3'   | -6.17 | 112.30      | 119.70   |
| 33  | BA    | 1226 | C    | P-O3'-C3'   | 6.17  | 127.10      | 119.70   |
| 8   | CB    | 2097 | A    | P-O3'-C3'   | -6.17 | 112.30      | 119.70   |
| 8   | AB    | 603  | A    | C1'-O4'-C4' | -6.16 | 104.97      | 109.90   |
| 8   | AB    | 1658 | C    | C3'-C2'-C1' | -6.16 | 96.57       | 101.50   |
| 33  | BA    | 908  | A    | C3'-C2'-C1' | -6.16 | 96.57       | 101.50   |
| 33  | DA    | 382  | A    | C3'-C2'-C1' | 6.16  | 106.43      | 101.50   |
| 33  | DA    | 1047 | G    | P-O3'-C3'   | -6.16 | 112.30      | 119.70   |
| 33  | DA    | 705  | G    | C8-N9-C4    | -6.16 | 103.94      | 106.40   |
| 33  | DA    | 750  | C    | P-O3'-C3'   | -6.16 | 112.31      | 119.70   |
| 8   | AB    | 2631 | G    | C4'-C3'-C2' | -6.16 | 96.44       | 102.60   |
| 8   | CB    | 98   | G    | P-O3'-C3'   | 6.16  | 127.09      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 141  | G    | C4'-C3'-C2' | -6.16 | 96.44       | 102.60   |
| 33  | DA    | 77   | A    | C3'-C2'-C1' | -6.16 | 96.57       | 101.50   |
| 33  | BA    | 403  | C    | P-O3'-C3'   | -6.16 | 112.31      | 119.70   |
| 33  | BA    | 1522 | U    | C4'-C3'-C2' | -6.16 | 96.44       | 102.60   |
| 33  | DA    | 353  | A    | C4'-C3'-C2' | -6.16 | 96.44       | 102.60   |
| 8   | CB    | 673  | C    | C4'-C3'-C2' | -6.15 | 96.45       | 102.60   |
| 33  | DA    | 1436 | U    | C3'-C2'-C1' | 6.15  | 106.42      | 101.50   |
| 8   | AB    | 1417 | C    | O4'-C1'-N1  | 6.15  | 113.12      | 108.20   |
| 8   | CB    | 259  | G    | C3'-C2'-C1' | -6.15 | 96.58       | 101.50   |
| 8   | CB    | 910  | A    | P-O3'-C3'   | 6.15  | 127.08      | 119.70   |
| 8   | CB    | 2324 | U    | P-O3'-C3'   | 6.15  | 127.08      | 119.70   |
| 8   | AB    | 799  | G    | O4'-C1'-N9  | 6.15  | 113.12      | 108.20   |
| 33  | DA    | 569  | C    | C1'-O4'-C4' | -6.15 | 104.98      | 109.90   |
| 33  | DA    | 1249 | C    | O4'-C1'-C2' | -6.14 | 99.66       | 105.80   |
| 8   | AB    | 2324 | U    | P-O3'-C3'   | 6.14  | 127.07      | 119.70   |
| 8   | CB    | 1054 | A    | C3'-C2'-C1' | -6.14 | 96.59       | 101.50   |
| 33  | DA    | 706  | A    | P-O3'-C3'   | -6.14 | 112.33      | 119.70   |
| 8   | CB    | 39   | G    | C4'-C3'-C2' | -6.14 | 96.46       | 102.60   |
| 8   | CB    | 1288 | G    | C1'-O4'-C4' | -6.14 | 104.99      | 109.90   |
| 8   | AB    | 537  | G    | O4'-C1'-N9  | -6.14 | 103.29      | 108.20   |
| 8   | AB    | 2629 | U    | C3'-C2'-C1' | -6.14 | 96.59       | 101.50   |
| 8   | CB    | 559  | G    | C5-C6-O6    | -6.14 | 124.92      | 128.60   |
| 8   | CB    | 1122 | G    | P-O3'-C3'   | -6.13 | 112.34      | 119.70   |
| 8   | CB    | 2068 | U    | O4'-C1'-N1  | -6.13 | 103.29      | 108.20   |
| 8   | AB    | 1913 | A    | P-O3'-C3'   | 6.13  | 127.06      | 119.70   |
| 8   | AB    | 2631 | G    | C3'-C2'-C1' | -6.13 | 96.59       | 101.50   |
| 8   | AB    | 2831 | G    | P-O3'-C3'   | 6.13  | 127.06      | 119.70   |
| 33  | BA    | 77   | A    | C3'-C2'-C1' | -6.13 | 96.59       | 101.50   |
| 8   | CB    | 2262 | U    | C1'-O4'-C4' | -6.13 | 104.99      | 109.90   |
| 8   | CB    | 951  | C    | P-O3'-C3'   | -6.13 | 112.34      | 119.70   |
| 33  | DA    | 819  | A    | O5'-C5'-C4' | 6.13  | 123.35      | 111.70   |
| 8   | AB    | 1907 | G    | C3'-C2'-C1' | -6.13 | 96.60       | 101.50   |
| 33  | BA    | 1526 | G    | C4'-C3'-C2' | -6.13 | 96.47       | 102.60   |
| 33  | DA    | 456  | A    | C4'-C3'-C2' | -6.13 | 96.47       | 102.60   |
| 7   | AA    | 36   | C    | P-O3'-C3'   | 6.12  | 127.05      | 119.70   |
| 8   | AB    | 330  | A    | C1'-O4'-C4' | -6.12 | 105.00      | 109.90   |
| 8   | AB    | 1936 | A    | O4'-C1'-N9  | -6.12 | 103.30      | 108.20   |
| 33  | DA    | 102  | G    | C4'-C3'-C2' | -6.12 | 96.48       | 102.60   |
| 33  | DA    | 656  | G    | C4'-C3'-C2' | -6.12 | 96.48       | 102.60   |
| 33  | DA    | 914  | A    | C1'-O4'-C4' | -6.12 | 105.00      | 109.90   |
| 7   | AA    | 44   | G    | P-O3'-C3'   | 6.12  | 127.05      | 119.70   |
| 8   | AB    | 748  | G    | C3'-C2'-C1' | 6.12  | 106.40      | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 1066 | U    | C3'-C2'-C1' | -6.12 | 96.60       | 101.50   |
| 8   | CB    | 1782 | U    | C3'-C2'-C1' | 6.12  | 106.40      | 101.50   |
| 8   | CB    | 2253 | G    | P-O3'-C3'   | 6.12  | 127.05      | 119.70   |
| 33  | DA    | 614  | C    | N1-C1'-C2'  | -6.12 | 105.27      | 112.00   |
| 33  | DA    | 1174 | G    | C3'-C2'-C1' | -6.12 | 96.60       | 101.50   |
| 33  | DA    | 1285 | A    | O4'-C1'-N9  | 6.12  | 113.10      | 108.20   |
| 8   | AB    | 2453 | A    | C1'-O4'-C4' | -6.12 | 105.00      | 109.90   |
| 8   | CB    | 1854 | A    | O4'-C1'-N9  | -6.12 | 103.31      | 108.20   |
| 8   | CB    | 2519 | U    | C3'-C2'-C1' | 6.12  | 106.39      | 101.50   |
| 8   | AB    | 2288 | A    | N3-C4-C5    | -6.12 | 122.52      | 126.80   |
| 8   | AB    | 1699 | G    | N9-C1'-C2'  | 6.11  | 121.95      | 114.00   |
| 8   | AB    | 99   | U    | C4'-C3'-C2' | -6.11 | 96.49       | 102.60   |
| 33  | BA    | 91   | U    | C3'-C2'-C1' | -6.11 | 96.61       | 101.50   |
| 33  | BA    | 1523 | G    | P-O3'-C3'   | -6.11 | 112.37      | 119.70   |
| 33  | BA    | 223  | A    | O4'-C1'-N9  | 6.11  | 113.08      | 108.20   |
| 8   | CB    | 2030 | A    | O4'-C1'-N9  | 6.11  | 113.09      | 108.20   |
| 8   | CB    | 1610 | A    | N9-C1'-C2'  | 6.11  | 121.94      | 114.00   |
| 33  | BA    | 401  | C    | C4'-C3'-C2' | -6.10 | 96.50       | 102.60   |
| 33  | BA    | 1393 | U    | C1'-O4'-C4' | -6.10 | 105.02      | 109.90   |
| 8   | CB    | 458  | G    | N3-C4-C5    | 6.10  | 131.65      | 128.60   |
| 33  | DA    | 1477 | U    | O4'-C1'-N1  | 6.10  | 113.08      | 108.20   |
| 33  | DA    | 1513 | A    | P-O3'-C3'   | -6.10 | 112.38      | 119.70   |
| 8   | CB    | 1692 | U    | C4'-C3'-C2' | -6.10 | 96.50       | 102.60   |
| 8   | CB    | 2365 | G    | C1'-O4'-C4' | -6.10 | 105.02      | 109.90   |
| 33  | DA    | 928  | G    | C4'-C3'-C2' | -6.10 | 96.50       | 102.60   |
| 8   | CB    | 1975 | G    | C2-N3-C4    | 6.10  | 114.95      | 111.90   |
| 8   | AB    | 2344 | U    | O4'-C1'-N1  | -6.10 | 103.32      | 108.20   |
| 8   | CB    | 110  | G    | C3'-C2'-C1' | -6.10 | 96.62       | 101.50   |
| 8   | CB    | 994  | C    | C6-N1-C1'   | -6.10 | 113.48      | 120.80   |
| 8   | CB    | 2015 | A    | O4'-C1'-N9  | -6.10 | 103.32      | 108.20   |
| 8   | AB    | 2595 | G    | C4'-C3'-C2' | -6.10 | 96.50       | 102.60   |
| 8   | CB    | 562  | U    | C3'-C2'-C1' | 6.10  | 106.38      | 101.50   |
| 8   | AB    | 2021 | C    | C4'-C3'-C2' | -6.09 | 96.51       | 102.60   |
| 8   | CB    | 479  | A    | N9-C1'-C2'  | 6.09  | 121.92      | 114.00   |
| 33  | BA    | 71   | A    | C3'-C2'-C1' | -6.09 | 96.63       | 101.50   |
| 8   | CB    | 2011 | U    | N1-C1'-C2'  | -6.09 | 105.30      | 112.00   |
| 8   | CB    | 745  | G    | C4'-C3'-C2' | -6.09 | 96.51       | 102.60   |
| 33  | BA    | 1459 | G    | C3'-C2'-C1' | 6.09  | 106.37      | 101.50   |
| 8   | CB    | 2902 | C    | C3'-C2'-C1' | -6.09 | 96.63       | 101.50   |
| 33  | DA    | 1471 | U    | C1'-O4'-C4' | -6.09 | 105.03      | 109.90   |
| 8   | CB    | 1988 | G    | C3'-C2'-C1' | -6.09 | 96.63       | 101.50   |
| 8   | CB    | 2554 | U    | C1'-O4'-C4' | -6.09 | 105.03      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2697 | G    | O4'-C1'-N9  | 6.09  | 113.07      | 108.20   |
| 8   | AB    | 241  | A    | O4'-C1'-N9  | -6.08 | 103.33      | 108.20   |
| 8   | AB    | 1185 | G    | P-O3'-C3'   | 6.08  | 127.00      | 119.70   |
| 8   | CB    | 819  | A    | O4'-C1'-N9  | -6.08 | 103.33      | 108.20   |
| 7   | AA    | 107  | G    | C3'-C2'-C1' | 6.08  | 106.37      | 101.50   |
| 8   | CB    | 811  | U    | C3'-C2'-C1' | -6.08 | 96.63       | 101.50   |
| 8   | CB    | 1675 | C    | C6-N1-C2    | -6.08 | 117.87      | 120.30   |
| 33  | BA    | 419  | C    | C4'-C3'-C2' | -6.08 | 96.52       | 102.60   |
| 33  | DA    | 541  | G    | O4'-C1'-N9  | 6.08  | 113.06      | 108.20   |
| 33  | DA    | 940  | C    | C3'-C2'-C1' | -6.08 | 96.64       | 101.50   |
| 33  | DA    | 1415 | G    | C5'-C4'-O4' | -6.08 | 101.80      | 109.10   |
| 8   | CB    | 2571 | U    | C4'-C3'-C2' | -6.08 | 96.52       | 102.60   |
| 33  | BA    | 887  | G    | C4'-C3'-C2' | -6.08 | 96.52       | 102.60   |
| 8   | CB    | 909  | A    | P-O3'-C3'   | 6.08  | 126.99      | 119.70   |
| 8   | CB    | 1850 | G    | C5-C6-O6    | -6.08 | 124.95      | 128.60   |
| 33  | BA    | 485  | U    | P-O3'-C3'   | 6.08  | 126.99      | 119.70   |
| 33  | BA    | 572  | A    | P-O3'-C3'   | 6.08  | 126.99      | 119.70   |
| 8   | CB    | 2389 | G    | O4'-C1'-N9  | 6.07  | 113.06      | 108.20   |
| 33  | DA    | 1367 | C    | C4'-C3'-C2' | -6.07 | 96.53       | 102.60   |
| 33  | DA    | 1504 | G    | C4'-C3'-C2' | -6.07 | 96.53       | 102.60   |
| 33  | BA    | 678  | U    | C3'-C2'-C1' | 6.07  | 106.36      | 101.50   |
| 33  | DA    | 350  | G    | N7-C8-N9    | 6.07  | 116.14      | 113.10   |
| 8   | AB    | 731  | C    | O4'-C1'-N1  | -6.06 | 103.35      | 108.20   |
| 8   | AB    | 1441 | G    | O4'-C1'-N9  | 6.06  | 113.05      | 108.20   |
| 33  | DA    | 500  | G    | P-O3'-C3'   | -6.06 | 112.42      | 119.70   |
| 8   | CB    | 739  | A    | P-O3'-C3'   | -6.06 | 112.43      | 119.70   |
| 8   | CB    | 1720 | U    | C3'-C2'-C1' | -6.06 | 96.65       | 101.50   |
| 8   | CB    | 258  | G    | C3'-C2'-C1' | -6.05 | 96.66       | 101.50   |
| 8   | CB    | 544  | C    | C4'-C3'-C2' | -6.05 | 96.55       | 102.60   |
| 8   | AB    | 783  | A    | N1-C6-N6    | 6.05  | 122.23      | 118.60   |
| 8   | AB    | 2425 | A    | O4'-C1'-N9  | -6.05 | 103.36      | 108.20   |
| 8   | CB    | 1342 | A    | O4'-C1'-N9  | -6.05 | 103.36      | 108.20   |
| 33  | BA    | 619  | U    | O4'-C1'-N1  | -6.05 | 103.36      | 108.20   |
| 8   | CB    | 301  | G    | C3'-C2'-C1' | 6.05  | 106.34      | 101.50   |
| 8   | CB    | 2189 | U    | C3'-C2'-C1' | -6.05 | 96.66       | 101.50   |
| 33  | DA    | 753  | A    | C8-N9-C4    | 6.05  | 108.22      | 105.80   |
| 8   | AB    | 2779 | U    | P-O3'-C3'   | 6.04  | 126.95      | 119.70   |
| 33  | BA    | 24   | U    | C4'-C3'-C2' | -6.04 | 96.56       | 102.60   |
| 8   | CB    | 1205 | A    | C3'-C2'-C1' | -6.04 | 96.67       | 101.50   |
| 8   | CB    | 2560 | A    | C4'-C3'-C2' | -6.04 | 96.56       | 102.60   |
| 8   | AB    | 1781 | U    | C1'-O4'-C4' | -6.04 | 105.07      | 109.90   |
| 8   | AB    | 2820 | A    | P-O3'-C3'   | 6.04  | 126.95      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | BA    | 774  | G    | C4'-C3'-C2' | -6.04 | 96.56       | 102.60   |
| 33  | BA    | 1515 | G    | P-O3'-C3'   | -6.04 | 112.45      | 119.70   |
| 33  | BA    | 1198 | G    | C1'-O4'-C4' | -6.04 | 105.07      | 109.90   |
| 8   | CB    | 190  | A    | P-O3'-C3'   | -6.04 | 112.45      | 119.70   |
| 8   | CB    | 984  | A    | C2-N3-C4    | -6.04 | 107.58      | 110.60   |
| 8   | AB    | 830  | G    | O4'-C1'-N9  | -6.03 | 103.37      | 108.20   |
| 8   | AB    | 1306 | C    | C4'-C3'-C2' | -6.03 | 96.57       | 102.60   |
| 8   | CB    | 603  | A    | C3'-C2'-C1' | -6.03 | 96.67       | 101.50   |
| 33  | DA    | 40   | C    | P-O3'-C3'   | -6.03 | 112.46      | 119.70   |
| 8   | CB    | 731  | C    | C6-N1-C2    | 6.03  | 122.71      | 120.30   |
| 8   | CB    | 505  | A    | C1'-O4'-C4' | -6.03 | 105.08      | 109.90   |
| 33  | DA    | 465  | A    | O4'-C1'-N9  | 6.03  | 113.02      | 108.20   |
| 8   | AB    | 408  | G    | C3'-C2'-C1' | -6.03 | 96.68       | 101.50   |
| 8   | AB    | 463  | G    | C4'-C3'-C2' | -6.03 | 96.57       | 102.60   |
| 8   | AB    | 2072 | C    | C4'-C3'-C2' | -6.03 | 96.57       | 102.60   |
| 8   | AB    | 191  | A    | C8-N9-C4    | -6.02 | 103.39      | 105.80   |
| 33  | BA    | 1266 | G    | C4'-C3'-C2' | -6.02 | 96.58       | 102.60   |
| 8   | CB    | 89   | A    | P-O3'-C3'   | 6.02  | 126.92      | 119.70   |
| 8   | CB    | 1429 | G    | C3'-C2'-C1' | -6.02 | 96.69       | 101.50   |
| 33  | DA    | 1181 | G    | O4'-C1'-C2' | -6.02 | 99.78       | 105.80   |
| 8   | AB    | 974  | G    | N1-C6-O6    | 6.02  | 123.51      | 119.90   |
| 8   | CB    | 126  | A    | P-O3'-C3'   | -6.02 | 112.48      | 119.70   |
| 7   | AA    | 12   | C    | O4'-C1'-N1  | 6.01  | 113.01      | 108.20   |
| 8   | AB    | 106  | C    | C4'-C3'-C2' | -6.01 | 96.59       | 102.60   |
| 8   | AB    | 410  | G    | C8-N9-C4    | -6.01 | 103.99      | 106.40   |
| 8   | CB    | 2732 | G    | C3'-C2'-C1' | -6.01 | 96.69       | 101.50   |
| 33  | DA    | 914  | A    | O4'-C1'-N9  | 6.01  | 113.01      | 108.20   |
| 8   | AB    | 1750 | G    | C4'-C3'-C2' | -6.01 | 96.59       | 102.60   |
| 8   | CB    | 1633 | G    | N3-C4-N9    | 6.01  | 129.61      | 126.00   |
| 8   | CB    | 2236 | U    | C4'-C3'-C2' | -6.01 | 96.59       | 102.60   |
| 7   | AA    | 89   | U    | C4'-C3'-C2' | -6.01 | 96.59       | 102.60   |
| 8   | CB    | 1948 | G    | P-O3'-C3'   | -6.01 | 112.49      | 119.70   |
| 8   | CB    | 1996 | C    | C5'-C4'-O4' | 6.01  | 116.31      | 109.10   |
| 8   | CB    | 2221 | G    | P-O3'-C3'   | -6.01 | 112.49      | 119.70   |
| 33  | DA    | 401  | C    | C6-N1-C2    | -6.01 | 117.90      | 120.30   |
| 33  | DA    | 510  | A    | O4'-C1'-N9  | 6.01  | 113.00      | 108.20   |
| 33  | DA    | 774  | G    | C4'-C3'-C2' | -6.01 | 96.59       | 102.60   |
| 8   | CB    | 531  | C    | C4'-C3'-C2' | -6.00 | 96.60       | 102.60   |
| 8   | AB    | 260  | G    | C3'-C2'-C1' | -6.00 | 96.70       | 101.50   |
| 8   | CB    | 1114 | C    | C4'-C3'-C2' | -6.00 | 96.60       | 102.60   |
| 33  | DA    | 388  | G    | O5'-C5'-C4' | -6.00 | 100.30      | 111.70   |
| 33  | DA    | 617  | G    | P-O3'-C3'   | -6.00 | 112.50      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2213 | U    | C2-N1-C1'   | 6.00  | 124.90      | 117.70   |
| 33  | DA    | 696  | A    | C2-N3-C4    | 6.00  | 113.60      | 110.60   |
| 33  | DA    | 699  | C    | C4'-C3'-C2' | -6.00 | 96.60       | 102.60   |
| 8   | CB    | 559  | G    | O4'-C1'-N9  | -6.00 | 103.40      | 108.20   |
| 33  | BA    | 60   | A    | O4'-C1'-N9  | -6.00 | 103.40      | 108.20   |
| 8   | CB    | 2093 | G    | O4'-C1'-N9  | 6.00  | 113.00      | 108.20   |
| 8   | AB    | 1046 | A    | N9-C1'-C2'  | 6.00  | 121.79      | 114.00   |
| 8   | AB    | 2234 | G    | C4'-C3'-C2' | -6.00 | 96.61       | 102.60   |
| 8   | CB    | 554  | U    | C1'-O4'-C4' | -6.00 | 105.10      | 109.90   |
| 8   | AB    | 752  | A    | C1'-O4'-C4' | -5.99 | 105.11      | 109.90   |
| 33  | DA    | 731  | G    | C5'-C4'-O4' | 5.99  | 116.29      | 109.10   |
| 33  | DA    | 862  | C    | O4'-C1'-N1  | 5.99  | 112.99      | 108.20   |
| 8   | CB    | 2332 | C    | C4'-C3'-C2' | -5.99 | 96.61       | 102.60   |
| 33  | DA    | 671  | G    | C8-N9-C4    | -5.99 | 104.00      | 106.40   |
| 8   | AB    | 1616 | A    | C4'-C3'-C2' | -5.99 | 96.61       | 102.60   |
| 8   | CB    | 1817 | G    | N3-C4-C5    | 5.99  | 131.60      | 128.60   |
| 8   | CB    | 2034 | U    | N1-C1'-C2'  | -5.99 | 105.41      | 112.00   |
| 8   | CB    | 2391 | G    | P-O3'-C3'   | 5.99  | 126.89      | 119.70   |
| 8   | AB    | 524  | G    | O4'-C1'-N9  | 5.99  | 112.99      | 108.20   |
| 8   | CB    | 783  | A    | N1-C6-N6    | 5.99  | 122.19      | 118.60   |
| 8   | CB    | 2576 | G    | C4-N9-C1'   | 5.99  | 134.28      | 126.50   |
| 8   | CB    | 2641 | G    | N9-C1'-C2'  | -5.99 | 105.42      | 112.00   |
| 33  | BA    | 401  | C    | C6-N1-C2    | -5.98 | 117.91      | 120.30   |
| 33  | BA    | 576  | C    | O4'-C1'-N1  | 5.98  | 112.99      | 108.20   |
| 33  | BA    | 510  | A    | O4'-C1'-N9  | 5.98  | 112.99      | 108.20   |
| 33  | DA    | 12   | U    | C4'-C3'-C2' | -5.98 | 96.62       | 102.60   |
| 33  | DA    | 766  | A    | P-O3'-C3'   | -5.98 | 112.52      | 119.70   |
| 33  | BA    | 165  | G    | C4'-C3'-C2' | -5.98 | 96.62       | 102.60   |
| 8   | CB    | 811  | U    | C4'-C3'-C2' | -5.98 | 96.62       | 102.60   |
| 7   | CA    | 110  | C    | O4'-C1'-N1  | 5.98  | 112.98      | 108.20   |
| 33  | DA    | 713  | G    | C6-C5-N7    | -5.98 | 126.81      | 130.40   |
| 8   | AB    | 599  | A    | C4'-C3'-C2' | -5.97 | 96.62       | 102.60   |
| 8   | AB    | 2675 | A    | P-O3'-C3'   | -5.97 | 112.53      | 119.70   |
| 8   | CB    | 264  | C    | O4'-C1'-N1  | 5.97  | 112.98      | 108.20   |
| 8   | AB    | 324  | A    | C4'-C3'-C2' | -5.97 | 96.63       | 102.60   |
| 8   | AB    | 1440 | U    | O4'-C1'-N1  | 5.97  | 112.98      | 108.20   |
| 18  | AL    | 53   | GLY  | N-CA-C      | -5.97 | 98.17       | 113.10   |
| 33  | BA    | 666  | G    | C4'-C3'-C2' | -5.97 | 96.63       | 102.60   |
| 33  | BA    | 894  | G    | C3'-C2'-C1' | -5.97 | 96.72       | 101.50   |
| 8   | AB    | 242  | G    | O4'-C1'-C2' | -5.97 | 99.83       | 105.80   |
| 7   | AA    | 99   | A    | P-O3'-C3'   | 5.97  | 126.86      | 119.70   |
| 8   | CB    | 1369 | G    | N1-C6-O6    | 5.97  | 123.48      | 119.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 855  | U    | C3'-C2'-C1' | -5.97 | 96.72       | 101.50   |
| 8   | CB    | 132  | G    | C6-C5-N7    | -5.97 | 126.82      | 130.40   |
| 33  | BA    | 135  | C    | C3'-C2'-C1' | -5.96 | 96.73       | 101.50   |
| 7   | CA    | 55   | U    | O4'-C1'-N1  | 5.96  | 112.97      | 108.20   |
| 33  | DA    | 239  | U    | P-O3'-C3'   | 5.96  | 126.86      | 119.70   |
| 8   | AB    | 7    | G    | C4'-C3'-C2' | -5.96 | 96.64       | 102.60   |
| 33  | BA    | 1094 | G    | O4'-C1'-N9  | 5.96  | 112.97      | 108.20   |
| 33  | BA    | 1526 | G    | N3-C4-C5    | -5.96 | 125.62      | 128.60   |
| 8   | CB    | 974  | G    | C5-C6-O6    | -5.96 | 125.02      | 128.60   |
| 8   | CB    | 168  | G    | P-O3'-C3'   | -5.96 | 112.55      | 119.70   |
| 8   | AB    | 1247 | A    | O4'-C1'-C2' | -5.96 | 99.84       | 105.80   |
| 8   | AB    | 2798 | U    | C1'-O4'-C4' | -5.96 | 105.14      | 109.90   |
| 33  | BA    | 350  | G    | O4'-C1'-N9  | 5.96  | 112.97      | 108.20   |
| 33  | BA    | 691  | G    | O4'-C4'-C3' | -5.96 | 98.04       | 104.00   |
| 8   | CB    | 2094 | A    | C3'-C2'-C1' | -5.96 | 96.73       | 101.50   |
| 8   | AB    | 372  | G    | C8-N9-C4    | -5.96 | 104.02      | 106.40   |
| 8   | AB    | 2409 | G    | O4'-C1'-N9  | -5.96 | 103.44      | 108.20   |
| 8   | AB    | 2717 | C    | C4'-C3'-C2' | -5.96 | 96.64       | 102.60   |
| 8   | CB    | 1943 | U    | C3'-C2'-C1' | -5.96 | 96.74       | 101.50   |
| 8   | AB    | 1205 | A    | C3'-C2'-C1' | -5.95 | 96.74       | 101.50   |
| 33  | BA    | 1296 | C    | C4'-C3'-C2' | -5.95 | 96.65       | 102.60   |
| 8   | CB    | 2049 | G    | C5-C6-N1    | -5.95 | 108.52      | 111.50   |
| 33  | BA    | 658  | C    | C4'-C3'-C2' | -5.95 | 96.65       | 102.60   |
| 33  | DA    | 485  | U    | C1'-O4'-C4' | -5.95 | 105.14      | 109.90   |
| 33  | BA    | 692  | U    | C4'-C3'-C2' | -5.95 | 96.65       | 102.60   |
| 8   | AB    | 2093 | G    | C8-N9-C4    | -5.95 | 104.02      | 106.40   |
| 8   | CB    | 1280 | G    | C8-N9-C4    | -5.95 | 104.02      | 106.40   |
| 33  | DA    | 793  | U    | C3'-C2'-C1' | -5.95 | 96.74       | 101.50   |
| 8   | AB    | 215  | G    | C3'-C2'-C1' | -5.94 | 96.75       | 101.50   |
| 8   | CB    | 556  | A    | C3'-C2'-C1' | 5.94  | 106.25      | 101.50   |
| 8   | CB    | 2234 | G    | C4'-C3'-C2' | -5.94 | 96.66       | 102.60   |
| 33  | DA    | 1432 | G    | C6-C5-N7    | -5.94 | 126.83      | 130.40   |
| 8   | AB    | 370  | G    | C4'-C3'-C2' | -5.94 | 96.66       | 102.60   |
| 8   | AB    | 1040 | A    | C4'-C3'-C2' | -5.94 | 96.66       | 102.60   |
| 8   | AB    | 2016 | U    | O4'-C1'-N1  | -5.94 | 103.45      | 108.20   |
| 8   | CB    | 792  | A    | P-O3'-C3'   | 5.94  | 126.83      | 119.70   |
| 8   | CB    | 982  | C    | C5-C6-N1    | 5.94  | 123.97      | 121.00   |
| 8   | CB    | 1906 | G    | C4'-C3'-C2' | -5.94 | 96.66       | 102.60   |
| 8   | AB    | 2659 | G    | C4'-C3'-C2' | -5.94 | 96.66       | 102.60   |
| 8   | CB    | 1845 | G    | C4'-C3'-C2' | -5.94 | 96.66       | 102.60   |
| 33  | DA    | 281  | G    | N9-C1'-C2'  | -5.94 | 105.47      | 112.00   |
| 8   | CB    | 1552 | A    | O4'-C1'-N9  | 5.93  | 112.95      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2288 | A    | O4'-C1'-N9  | 5.93  | 112.95      | 108.20   |
| 8   | AB    | 2251 | G    | C4'-C3'-C2' | -5.93 | 96.67       | 102.60   |
| 33  | DA    | 1289 | A    | C4'-C3'-C2' | -5.93 | 96.67       | 102.60   |
| 8   | CB    | 1781 | U    | C1'-O4'-C4' | -5.93 | 105.16      | 109.90   |
| 33  | DA    | 721  | G    | C4'-C3'-C2' | -5.93 | 96.67       | 102.60   |
| 8   | AB    | 1889 | A    | C4'-C3'-C2' | -5.93 | 96.67       | 102.60   |
| 33  | BA    | 219  | U    | C3'-C2'-C1' | -5.93 | 96.76       | 101.50   |
| 8   | CB    | 2253 | G    | O4'-C1'-N9  | -5.93 | 103.46      | 108.20   |
| 33  | DA    | 427  | U    | O4'-C1'-N1  | -5.93 | 103.46      | 108.20   |
| 8   | AB    | 718  | A    | O4'-C1'-N9  | 5.92  | 112.94      | 108.20   |
| 8   | CB    | 479  | A    | P-O3'-C3'   | 5.92  | 126.81      | 119.70   |
| 33  | DA    | 252  | U    | O4'-C1'-N1  | -5.92 | 103.46      | 108.20   |
| 33  | DA    | 401  | C    | C3'-C2'-C1' | -5.92 | 96.76       | 101.50   |
| 33  | BA    | 145  | G    | C4'-C3'-C2' | -5.92 | 96.68       | 102.60   |
| 8   | CB    | 1606 | C    | N1-C2-O2    | 5.92  | 122.45      | 118.90   |
| 33  | DA    | 1394 | A    | N1-C6-N6    | 5.92  | 122.15      | 118.60   |
| 8   | AB    | 2492 | U    | O4'-C1'-N1  | -5.92 | 103.47      | 108.20   |
| 8   | AB    | 2831 | G    | N3-C4-C5    | -5.92 | 125.64      | 128.60   |
| 33  | BA    | 1526 | G    | C8-N9-C4    | -5.92 | 104.03      | 106.40   |
| 8   | CB    | 1251 | C    | N1-C2-O2    | 5.92  | 122.45      | 118.90   |
| 8   | CB    | 2016 | U    | O4'-C1'-N1  | -5.92 | 103.47      | 108.20   |
| 8   | AB    | 1322 | A    | C4'-C3'-C2' | -5.91 | 96.69       | 102.60   |
| 8   | AB    | 2233 | U    | C4'-C3'-C2' | -5.91 | 96.69       | 102.60   |
| 33  | BA    | 1168 | U    | C3'-C2'-C1' | -5.91 | 96.77       | 101.50   |
| 8   | CB    | 1554 | U    | C4'-C3'-C2' | -5.91 | 96.69       | 102.60   |
| 8   | AB    | 829  | A    | C4'-C3'-C2' | -5.91 | 96.69       | 102.60   |
| 33  | BA    | 765  | G    | C2-N3-C4    | 5.91  | 114.86      | 111.90   |
| 8   | CB    | 1749 | A    | O4'-C1'-N9  | 5.91  | 112.93      | 108.20   |
| 33  | DA    | 1328 | C    | C3'-C2'-C1' | -5.91 | 96.77       | 101.50   |
| 8   | AB    | 2281 | A    | C3'-C2'-C1' | -5.91 | 96.77       | 101.50   |
| 8   | AB    | 748  | G    | C1'-O4'-C4' | -5.91 | 105.17      | 109.90   |
| 8   | AB    | 1305 | C    | C3'-C2'-C1' | -5.91 | 96.77       | 101.50   |
| 8   | AB    | 1958 | C    | C4'-C3'-C2' | -5.91 | 96.69       | 102.60   |
| 33  | DA    | 646  | G    | C3'-C2'-C1' | -5.91 | 96.77       | 101.50   |
| 33  | DA    | 773  | G    | N3-C4-C5    | 5.91  | 131.55      | 128.60   |
| 33  | BA    | 699  | C    | C4'-C3'-C2' | -5.91 | 96.69       | 102.60   |
| 33  | BA    | 1186 | G    | O4'-C1'-N9  | 5.91  | 112.92      | 108.20   |
| 8   | CB    | 628  | G    | N1-C6-O6    | 5.91  | 123.44      | 119.90   |
| 8   | AB    | 1606 | C    | C4'-C3'-C2' | -5.90 | 96.70       | 102.60   |
| 33  | DA    | 700  | G    | C4'-C3'-C2' | -5.90 | 96.70       | 102.60   |
| 33  | DA    | 945  | G    | C4'-C3'-C2' | -5.90 | 96.70       | 102.60   |
| 8   | AB    | 926  | G    | C3'-C2'-C1' | -5.90 | 96.78       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2059 | A    | N9-C1'-C2'  | -5.90 | 105.51      | 112.00   |
| 8   | CB    | 1375 | U    | C3'-C2'-C1' | 5.90  | 106.22      | 101.50   |
| 8   | AB    | 804  | A    | O4'-C1'-N9  | -5.89 | 103.48      | 108.20   |
| 8   | AB    | 1440 | U    | C6-N1-C2    | -5.89 | 117.46      | 121.00   |
| 8   | CB    | 2385 | C    | P-O3'-C3'   | -5.89 | 112.63      | 119.70   |
| 33  | BA    | 640  | A    | C4'-C3'-C2' | -5.89 | 96.71       | 102.60   |
| 33  | BA    | 973  | G    | C3'-C2'-C1' | -5.89 | 96.79       | 101.50   |
| 8   | CB    | 860  | U    | O3'-P-O5'   | -5.89 | 92.81       | 104.00   |
| 33  | DA    | 527  | G    | N3-C2-N2    | -5.89 | 115.78      | 119.90   |
| 8   | CB    | 331  | C    | C1'-O4'-C4' | -5.89 | 105.19      | 109.90   |
| 8   | CB    | 2831 | G    | P-O3'-C3'   | 5.89  | 126.77      | 119.70   |
| 8   | AB    | 764  | A    | O4'-C1'-N9  | -5.89 | 103.49      | 108.20   |
| 33  | DA    | 251  | G    | C3'-C2'-C1' | 5.88  | 106.21      | 101.50   |
| 33  | DA    | 563  | A    | C3'-C2'-C1' | 5.88  | 106.21      | 101.50   |
| 8   | AB    | 1294 | U    | C3'-C2'-C1' | -5.88 | 96.79       | 101.50   |
| 33  | BA    | 18   | C    | P-O3'-C3'   | -5.88 | 112.64      | 119.70   |
| 8   | CB    | 2469 | A    | C4'-C3'-C2' | -5.88 | 96.72       | 102.60   |
| 8   | AB    | 1631 | G    | O4'-C1'-N9  | -5.88 | 103.49      | 108.20   |
| 33  | BA    | 353  | A    | C4'-C3'-C2' | -5.88 | 96.72       | 102.60   |
| 8   | CB    | 2820 | A    | P-O3'-C3'   | 5.88  | 126.76      | 119.70   |
| 33  | DA    | 26   | A    | C4'-C3'-C2' | -5.88 | 96.72       | 102.60   |
| 8   | CB    | 479  | A    | C1'-O4'-C4' | -5.88 | 105.20      | 109.90   |
| 8   | CB    | 1645 | G    | O4'-C1'-N9  | -5.88 | 103.50      | 108.20   |
| 8   | CB    | 2683 | C    | C4'-C3'-C2' | 5.88  | 108.48      | 102.60   |
| 33  | DA    | 550  | G    | C3'-C2'-C1' | 5.88  | 106.20      | 101.50   |
| 8   | AB    | 1273 | U    | C2-N1-C1'   | 5.88  | 124.75      | 117.70   |
| 8   | CB    | 982  | C    | N3-C4-N4    | 5.88  | 122.11      | 118.00   |
| 8   | CB    | 93   | G    | C4'-C3'-C2' | -5.87 | 96.73       | 102.60   |
| 7   | AA    | 95   | U    | C5-C6-N1    | 5.87  | 125.64      | 122.70   |
| 33  | BA    | 670  | G    | O4'-C4'-C3' | -5.87 | 98.13       | 104.00   |
| 8   | CB    | 1791 | A    | O4'-C1'-N9  | -5.87 | 103.50      | 108.20   |
| 33  | DA    | 683  | G    | O4'-C1'-N9  | 5.87  | 112.90      | 108.20   |
| 8   | AB    | 1815 | A    | C4'-C3'-C2' | -5.87 | 96.73       | 102.60   |
| 8   | AB    | 2581 | G    | C8-N9-C4    | -5.87 | 104.05      | 106.40   |
| 8   | CB    | 1440 | U    | C6-N1-C2    | -5.87 | 117.48      | 121.00   |
| 8   | CB    | 2469 | A    | C3'-C2'-C1' | -5.87 | 96.81       | 101.50   |
| 8   | AB    | 2718 | G    | O4'-C1'-N9  | 5.87  | 112.89      | 108.20   |
| 33  | DA    | 1432 | G    | C4-C5-C6    | 5.87  | 122.32      | 118.80   |
| 8   | CB    | 400  | G    | C4'-C3'-C2' | -5.87 | 96.73       | 102.60   |
| 8   | CB    | 847  | U    | C1'-O4'-C4' | -5.87 | 105.21      | 109.90   |
| 8   | CB    | 1973 | G    | P-O3'-C3'   | 5.86  | 126.73      | 119.70   |
| 33  | DA    | 183  | C    | C3'-C2'-C1' | 5.86  | 106.19      | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 519  | C    | C6-N1-C2    | -5.86 | 117.95      | 120.30   |
| 7   | AA    | 17   | C    | O4'-C1'-N1  | 5.86  | 112.89      | 108.20   |
| 8   | AB    | 405  | U    | C4'-C3'-C2' | -5.86 | 96.74       | 102.60   |
| 8   | AB    | 1360 | G    | O4'-C1'-N9  | 5.86  | 112.89      | 108.20   |
| 8   | CB    | 2726 | A    | O5'-C5'-C4' | -5.86 | 100.57      | 111.70   |
| 33  | DA    | 881  | G    | N9-C1'-C2'  | -5.86 | 105.56      | 112.00   |
| 33  | DA    | 1100 | C    | C1'-O4'-C4' | -5.85 | 105.22      | 109.90   |
| 8   | AB    | 2018 | G    | P-O5'-C5'   | -5.85 | 111.54      | 120.90   |
| 8   | AB    | 2385 | C    | P-O3'-C3'   | -5.85 | 112.68      | 119.70   |
| 33  | DA    | 1200 | C    | C1'-O4'-C4' | -5.85 | 105.22      | 109.90   |
| 8   | AB    | 105  | C    | O4'-C1'-N1  | 5.85  | 112.88      | 108.20   |
| 8   | CB    | 1920 | C    | O4'-C1'-N1  | -5.85 | 103.52      | 108.20   |
| 33  | DA    | 511  | C    | N1-C1'-C2'  | -5.85 | 105.57      | 112.00   |
| 33  | DA    | 1196 | A    | C3'-C2'-C1' | -5.85 | 96.82       | 101.50   |
| 8   | AB    | 62   | U    | O4'-C1'-N1  | 5.85  | 112.88      | 108.20   |
| 33  | BA    | 141  | G    | C4'-C3'-C2' | -5.85 | 96.75       | 102.60   |
| 8   | CB    | 984  | A    | O4'-C1'-N9  | -5.85 | 103.52      | 108.20   |
| 8   | AB    | 796  | C    | P-O3'-C3'   | 5.85  | 126.72      | 119.70   |
| 8   | AB    | 1798 | U    | C4'-C3'-C2' | -5.85 | 96.75       | 102.60   |
| 33  | DA    | 902  | G    | C5-C6-O6    | 5.85  | 132.11      | 128.60   |
| 8   | CB    | 1322 | A    | C3'-C2'-C1' | -5.84 | 96.82       | 101.50   |
| 8   | CB    | 2712 | C    | C5'-C4'-O4' | -5.84 | 102.09      | 109.10   |
| 33  | DA    | 349  | A    | P-O3'-C3'   | 5.84  | 126.71      | 119.70   |
| 8   | AB    | 2258 | C    | C4'-C3'-C2' | -5.84 | 96.76       | 102.60   |
| 8   | CB    | 1382 | G    | O4'-C1'-N9  | 5.84  | 112.88      | 108.20   |
| 8   | AB    | 1789 | A    | P-O3'-C3'   | -5.84 | 112.69      | 119.70   |
| 8   | CB    | 205  | G    | O4'-C1'-C2' | -5.84 | 99.96       | 105.80   |
| 8   | CB    | 1572 | A    | P-O3'-C3'   | -5.84 | 112.69      | 119.70   |
| 8   | CB    | 2321 | U    | O4'-C1'-N1  | 5.84  | 112.87      | 108.20   |
| 33  | BA    | 102  | G    | C4'-C3'-C2' | -5.84 | 96.76       | 102.60   |
| 8   | CB    | 905  | A    | C3'-C2'-C1' | -5.84 | 96.83       | 101.50   |
| 33  | BA    | 1432 | G    | N3-C4-N9    | -5.84 | 122.50      | 126.00   |
| 7   | CA    | 95   | U    | O4'-C1'-N1  | 5.84  | 112.87      | 108.20   |
| 8   | CB    | 1970 | A    | O4'-C1'-N9  | -5.84 | 103.53      | 108.20   |
| 8   | CB    | 2372 | U    | C3'-C2'-C1' | -5.84 | 96.83       | 101.50   |
| 33  | BA    | 225  | C    | C4'-C3'-C2' | -5.83 | 96.77       | 102.60   |
| 33  | DA    | 1484 | C    | N1-C2-O2    | -5.83 | 115.40      | 118.90   |
| 8   | CB    | 79   | C    | C4'-C3'-C2' | -5.83 | 96.77       | 102.60   |
| 8   | CB    | 2265 | U    | O4'-C1'-N1  | -5.83 | 103.53      | 108.20   |
| 33  | BA    | 970  | C    | O4'-C1'-N1  | 5.83  | 112.86      | 108.20   |
| 8   | CB    | 1125 | G    | C3'-C2'-C1' | -5.83 | 96.84       | 101.50   |
| 8   | CB    | 2742 | G    | C8-N9-C4    | -5.83 | 104.07      | 106.40   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 688  | G    | C4'-C3'-C2' | -5.83 | 96.77       | 102.60   |
| 8   | AB    | 187  | G    | C4'-C3'-C2' | -5.83 | 96.77       | 102.60   |
| 8   | AB    | 282  | A    | O4'-C1'-N9  | 5.83  | 112.86      | 108.20   |
| 33  | BA    | 1464 | U    | C5'-C4'-O4' | 5.83  | 116.09      | 109.10   |
| 8   | CB    | 2558 | C    | C6-N1-C2    | 5.83  | 122.63      | 120.30   |
| 8   | AB    | 1720 | U    | C3'-C2'-C1' | -5.83 | 96.84       | 101.50   |
| 33  | BA    | 592  | G    | C4'-C3'-C2' | -5.83 | 96.77       | 102.60   |
| 8   | AB    | 2653 | U    | O4'-C1'-N1  | 5.82  | 112.86      | 108.20   |
| 33  | DA    | 576  | C    | O4'-C1'-C2' | -5.82 | 99.98       | 105.80   |
| 8   | AB    | 2614 | A    | O4'-C1'-N9  | 5.82  | 112.86      | 108.20   |
| 33  | BA    | 575  | G    | C3'-C2'-C1' | -5.82 | 96.84       | 101.50   |
| 8   | CB    | 1382 | G    | C5'-C4'-O4' | 5.82  | 116.08      | 109.10   |
| 8   | AB    | 526  | A    | C3'-C2'-C1' | 5.82  | 106.16      | 101.50   |
| 33  | DA    | 884  | U    | C1'-O4'-C4' | -5.82 | 105.25      | 109.90   |
| 8   | AB    | 1973 | G    | O4'-C1'-C2' | -5.82 | 99.98       | 105.80   |
| 8   | AB    | 2776 | A    | C4'-C3'-C2' | -5.82 | 96.78       | 102.60   |
| 33  | BA    | 572  | A    | C3'-C2'-C1' | 5.82  | 106.15      | 101.50   |
| 8   | CB    | 1487 | U    | C3'-C2'-C1' | -5.82 | 96.85       | 101.50   |
| 33  | DA    | 165  | G    | C4'-C3'-C2' | -5.82 | 96.78       | 102.60   |
| 33  | BA    | 716  | A    | C4'-C3'-C2' | -5.82 | 96.78       | 102.60   |
| 8   | CB    | 2553 | G    | O4'-C1'-N9  | 5.82  | 112.85      | 108.20   |
| 8   | AB    | 80   | G    | C4'-C3'-C2' | -5.81 | 96.79       | 102.60   |
| 8   | AB    | 1996 | C    | C5'-C4'-O4' | 5.81  | 116.08      | 109.10   |
| 8   | AB    | 2800 | A    | O4'-C1'-N9  | 5.81  | 112.85      | 108.20   |
| 33  | DA    | 886  | G    | N3-C4-N9    | 5.81  | 129.49      | 126.00   |
| 8   | CB    | 2282 | G    | P-O3'-C3'   | 5.81  | 126.67      | 119.70   |
| 33  | DA    | 253  | A    | O4'-C1'-N9  | 5.81  | 112.85      | 108.20   |
| 8   | AB    | 2253 | G    | P-O3'-C3'   | 5.81  | 126.67      | 119.70   |
| 8   | CB    | 245  | G    | N1-C6-O6    | 5.81  | 123.39      | 119.90   |
| 8   | CB    | 369  | U    | P-O3'-C3'   | 5.81  | 126.67      | 119.70   |
| 8   | AB    | 941  | A    | C4'-C3'-C2' | -5.81 | 96.79       | 102.60   |
| 33  | BA    | 774  | G    | C3'-C2'-C1' | -5.81 | 96.85       | 101.50   |
| 8   | CB    | 528  | A    | C5'-C4'-O4' | -5.81 | 102.13      | 109.10   |
| 8   | CB    | 1199 | U    | P-O3'-C3'   | 5.81  | 126.67      | 119.70   |
| 8   | CB    | 1975 | G    | N3-C4-C5    | -5.81 | 125.70      | 128.60   |
| 8   | CB    | 2741 | A    | O4'-C4'-C3' | -5.81 | 98.19       | 104.00   |
| 8   | AB    | 1307 | A    | C3'-C2'-C1' | -5.81 | 96.86       | 101.50   |
| 33  | BA    | 183  | C    | C3'-C2'-C1' | 5.80  | 106.14      | 101.50   |
| 33  | DA    | 1198 | G    | N9-C1'-C2'  | -5.80 | 105.61      | 112.00   |
| 8   | CB    | 1767 | G    | N9-C1'-C2'  | -5.80 | 105.62      | 112.00   |
| 8   | CB    | 545  | U    | C3'-C2'-C1' | -5.80 | 96.86       | 101.50   |
| 8   | CB    | 796  | C    | P-O3'-C3'   | 5.80  | 126.66      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 974  | G    | C5-N7-C8    | -5.80 | 101.40      | 104.30   |
| 33  | DA    | 8    | A    | C3'-C2'-C1' | -5.80 | 96.86       | 101.50   |
| 8   | AB    | 552  | U    | O4'-C4'-C3' | -5.80 | 98.20       | 104.00   |
| 8   | CB    | 2059 | A    | C3'-C2'-C1' | 5.80  | 106.14      | 101.50   |
| 8   | AB    | 225  | C    | O4'-C1'-N1  | 5.79  | 112.83      | 108.20   |
| 8   | AB    | 1125 | G    | C3'-C2'-C1' | -5.79 | 96.86       | 101.50   |
| 8   | CB    | 616  | A    | P-O3'-C3'   | -5.79 | 112.75      | 119.70   |
| 8   | AB    | 184  | C    | C1'-O4'-C4' | -5.79 | 105.27      | 109.90   |
| 8   | AB    | 1210 | G    | C3'-C2'-C1' | 5.79  | 106.13      | 101.50   |
| 8   | CB    | 2153 | C    | C4'-C3'-C2' | -5.79 | 96.81       | 102.60   |
| 8   | CB    | 187  | G    | C4'-C3'-C2' | -5.79 | 96.81       | 102.60   |
| 8   | CB    | 200  | U    | P-O3'-C3'   | -5.79 | 112.75      | 119.70   |
| 7   | AA    | 73   | A    | C5'-C4'-O4' | 5.79  | 116.04      | 109.10   |
| 8   | AB    | 527  | C    | C2-N1-C1'   | 5.79  | 125.16      | 118.80   |
| 8   | AB    | 2831 | G    | C8-N9-C4    | -5.79 | 104.09      | 106.40   |
| 8   | CB    | 745  | G    | C4-C5-C6    | 5.79  | 122.27      | 118.80   |
| 33  | DA    | 1475 | G    | P-O3'-C3'   | 5.79  | 126.64      | 119.70   |
| 8   | AB    | 1792 | G    | C4'-C3'-C2' | -5.78 | 96.82       | 102.60   |
| 8   | CB    | 684  | G    | C6-C5-N7    | -5.78 | 126.93      | 130.40   |
| 8   | CB    | 1706 | C    | N1-C2-O2    | -5.78 | 115.43      | 118.90   |
| 8   | AB    | 1456 | G    | C4'-C3'-C2' | -5.78 | 96.82       | 102.60   |
| 8   | CB    | 168  | G    | C3'-C2'-C1' | -5.78 | 96.88       | 101.50   |
| 8   | CB    | 2780 | G    | N1-C6-O6    | -5.78 | 116.43      | 119.90   |
| 8   | CB    | 2880 | C    | C6-N1-C2    | -5.78 | 117.99      | 120.30   |
| 33  | DA    | 787  | A    | C3'-C2'-C1' | 5.78  | 106.12      | 101.50   |
| 33  | DA    | 1207 | G    | C3'-C2'-C1' | -5.78 | 96.88       | 101.50   |
| 7   | AA    | 19   | C    | C3'-C2'-C1' | -5.78 | 96.88       | 101.50   |
| 33  | DA    | 574  | A    | P-O3'-C3'   | -5.78 | 112.77      | 119.70   |
| 8   | CB    | 1456 | G    | C8-N9-C4    | -5.78 | 104.09      | 106.40   |
| 8   | CB    | 2038 | G    | C4'-C3'-C2' | -5.78 | 96.82       | 102.60   |
| 8   | AB    | 344  | A    | P-O3'-C3'   | -5.78 | 112.77      | 119.70   |
| 8   | AB    | 1823 | G    | P-O3'-C3'   | -5.78 | 112.77      | 119.70   |
| 8   | CB    | 673  | C    | O4'-C1'-N1  | -5.78 | 103.58      | 108.20   |
| 8   | CB    | 1805 | A    | P-O3'-C3'   | -5.78 | 112.77      | 119.70   |
| 8   | CB    | 2588 | G    | C3'-C2'-C1' | -5.77 | 96.88       | 101.50   |
| 33  | DA    | 94   | G    | C1'-O4'-C4' | -5.77 | 105.28      | 109.90   |
| 33  | DA    | 528  | C    | C4'-C3'-C2' | -5.77 | 96.83       | 102.60   |
| 33  | BA    | 537  | G    | N1-C6-O6    | 5.77  | 123.36      | 119.90   |
| 8   | CB    | 587  | C    | N3-C2-O2    | -5.77 | 117.86      | 121.90   |
| 8   | CB    | 2581 | G    | C3'-C2'-C1' | 5.77  | 106.12      | 101.50   |
| 33  | DA    | 135  | C    | C4'-C3'-C2' | -5.77 | 96.83       | 102.60   |
| 33  | DA    | 394  | G    | C4'-C3'-C2' | -5.77 | 96.83       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 773  | G    | C3'-C2'-C1' | -5.77 | 96.88       | 101.50   |
| 8   | AB    | 982  | C    | C5-C6-N1    | 5.77  | 123.88      | 121.00   |
| 33  | DA    | 770  | C    | C4'-C3'-C2' | -5.77 | 96.83       | 102.60   |
| 33  | BA    | 880  | C    | P-O3'-C3'   | -5.76 | 112.78      | 119.70   |
| 8   | CB    | 2017 | U    | N1-C1'-C2'  | 5.76  | 121.50      | 114.00   |
| 8   | CB    | 2673 | G    | C4'-C3'-C2' | -5.76 | 96.83       | 102.60   |
| 8   | CB    | 126  | A    | O4'-C1'-N9  | 5.76  | 112.81      | 108.20   |
| 8   | CB    | 608  | A    | C3'-C2'-C1' | 5.76  | 106.11      | 101.50   |
| 8   | CB    | 1795 | C    | C4'-C3'-C2' | -5.76 | 96.84       | 102.60   |
| 8   | CB    | 2074 | U    | O4'-C1'-N1  | -5.76 | 103.59      | 108.20   |
| 33  | DA    | 21   | G    | O4'-C1'-N9  | -5.76 | 103.59      | 108.20   |
| 8   | AB    | 14   | A    | O4'-C1'-N9  | -5.76 | 103.59      | 108.20   |
| 33  | DA    | 9    | G    | C8-N9-C4    | -5.76 | 104.10      | 106.40   |
| 33  | BA    | 423  | G    | P-O3'-C3'   | 5.75  | 126.61      | 119.70   |
| 8   | CB    | 814  | C    | N1-C1'-C2'  | -5.75 | 105.67      | 112.00   |
| 8   | AB    | 1888 | G    | N9-C1'-C2'  | 5.75  | 121.48      | 114.00   |
| 8   | CB    | 1888 | G    | C4'-C3'-C2' | -5.75 | 96.85       | 102.60   |
| 8   | CB    | 2356 | U    | P-O3'-C3'   | -5.75 | 112.80      | 119.70   |
| 8   | CB    | 2433 | A    | O4'-C1'-N9  | -5.75 | 103.60      | 108.20   |
| 8   | AB    | 1795 | C    | C4'-C3'-C2' | -5.75 | 96.85       | 102.60   |
| 7   | CA    | 32   | U    | O4'-C1'-N1  | 5.75  | 112.80      | 108.20   |
| 33  | DA    | 579  | A    | N7-C8-N9    | 5.75  | 116.68      | 113.80   |
| 33  | BA    | 1198 | G    | C4'-C3'-C2' | -5.75 | 96.85       | 102.60   |
| 8   | AB    | 827  | U    | C4'-C3'-C2' | 5.75  | 108.35      | 102.60   |
| 33  | BA    | 1055 | A    | C3'-C2'-C1' | -5.75 | 96.90       | 101.50   |
| 8   | CB    | 984  | A    | N1-C2-N3    | 5.75  | 132.17      | 129.30   |
| 8   | AB    | 871  | U    | O4'-C1'-N1  | 5.75  | 112.80      | 108.20   |
| 8   | AB    | 2447 | G    | O4'-C1'-N9  | -5.75 | 103.60      | 108.20   |
| 33  | DA    | 7    | A    | C8-N9-C4    | 5.75  | 108.10      | 105.80   |
| 8   | AB    | 123  | G    | C4'-C3'-C2' | -5.75 | 96.86       | 102.60   |
| 33  | DA    | 1404 | C    | N1-C1'-C2'  | 5.75  | 121.47      | 114.00   |
| 33  | DA    | 776  | G    | N3-C4-N9    | -5.74 | 122.55      | 126.00   |
| 33  | DA    | 902  | G    | C6-C5-N7    | 5.74  | 133.85      | 130.40   |
| 8   | AB    | 99   | U    | C1'-O4'-C4' | -5.74 | 105.31      | 109.90   |
| 33  | DA    | 1425 | U    | C2-N1-C1'   | 5.74  | 124.59      | 117.70   |
| 8   | AB    | 35   | G    | N3-C4-N9    | -5.74 | 122.56      | 126.00   |
| 8   | AB    | 1031 | G    | C4'-C3'-C2' | -5.74 | 96.86       | 102.60   |
| 8   | CB    | 1972 | G    | P-O3'-C3'   | -5.74 | 112.81      | 119.70   |
| 33  | DA    | 381  | C    | C3'-C2'-C1' | 5.74  | 106.09      | 101.50   |
| 33  | DA    | 1487 | G    | O4'-C1'-N9  | 5.74  | 112.79      | 108.20   |
| 7   | CA    | 95   | U    | C6-N1-C2    | -5.74 | 117.56      | 121.00   |
| 8   | CB    | 2453 | A    | P-O3'-C3'   | 5.74  | 126.58      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 325  | G    | C3'-C2'-C1' | -5.74 | 96.91       | 101.50   |
| 8   | CB    | 245  | G    | C6-C5-N7    | -5.74 | 126.96      | 130.40   |
| 33  | DA    | 145  | G    | C4'-C3'-C2' | -5.74 | 96.86       | 102.60   |
| 8   | CB    | 1034 | G    | C3'-C2'-C1' | -5.74 | 96.91       | 101.50   |
| 8   | CB    | 1034 | G    | O4'-C1'-N9  | 5.74  | 112.79      | 108.20   |
| 33  | DA    | 428  | G    | O4'-C1'-N9  | 5.74  | 112.79      | 108.20   |
| 33  | BA    | 103  | U    | C4'-C3'-C2' | -5.73 | 96.87       | 102.60   |
| 8   | CB    | 1826 | G    | C3'-C2'-C1' | -5.73 | 96.91       | 101.50   |
| 8   | CB    | 1945 | G    | P-O3'-C3'   | 5.73  | 126.58      | 119.70   |
| 8   | AB    | 779  | U    | O4'-C1'-N1  | 5.73  | 112.78      | 108.20   |
| 33  | DA    | 1443 | C    | C4'-C3'-C2' | -5.73 | 96.87       | 102.60   |
| 8   | CB    | 114  | U    | C4'-C3'-C2' | -5.73 | 96.87       | 102.60   |
| 8   | CB    | 250  | G    | O4'-C1'-N9  | 5.73  | 112.78      | 108.20   |
| 8   | CB    | 780  | G    | C8-N9-C4    | -5.73 | 104.11      | 106.40   |
| 8   | AB    | 1601 | G    | P-O3'-C3'   | 5.72  | 126.57      | 119.70   |
| 8   | AB    | 2460 | U    | P-O3'-C3'   | -5.72 | 112.83      | 119.70   |
| 33  | DA    | 358  | U    | O4'-C1'-N1  | -5.72 | 103.62      | 108.20   |
| 33  | DA    | 700  | G    | O4'-C1'-C2' | -5.72 | 100.08      | 105.80   |
| 8   | AB    | 2607 | G    | O4'-C1'-N9  | -5.72 | 103.62      | 108.20   |
| 8   | CB    | 748  | G    | C1'-O4'-C4' | -5.72 | 105.32      | 109.90   |
| 8   | AB    | 1036 | G    | O4'-C1'-N9  | 5.72  | 112.78      | 108.20   |
| 7   | AA    | 95   | U    | C6-N1-C2    | -5.72 | 117.57      | 121.00   |
| 8   | AB    | 908  | C    | C3'-C2'-C1' | -5.72 | 96.92       | 101.50   |
| 33  | BA    | 13   | U    | O4'-C1'-N1  | -5.72 | 103.62      | 108.20   |
| 33  | DA    | 225  | C    | C4'-C3'-C2' | -5.72 | 96.88       | 102.60   |
| 8   | CB    | 754  | U    | P-O3'-C3'   | -5.72 | 112.84      | 119.70   |
| 8   | CB    | 949  | G    | C3'-C2'-C1' | -5.72 | 96.93       | 101.50   |
| 8   | AB    | 292  | U    | C4'-C3'-C2' | -5.72 | 96.88       | 102.60   |
| 8   | CB    | 337  | C    | C1'-O4'-C4' | -5.72 | 105.33      | 109.90   |
| 8   | CB    | 1028 | A    | C3'-C2'-C1' | 5.72  | 106.07      | 101.50   |
| 33  | DA    | 806  | C    | C5'-C4'-C3' | -5.72 | 106.85      | 116.00   |
| 8   | AB    | 275  | C    | O4'-C1'-N1  | 5.71  | 112.77      | 108.20   |
| 8   | CB    | 871  | U    | C3'-C2'-C1' | 5.71  | 106.07      | 101.50   |
| 33  | DA    | 882  | C    | P-O3'-C3'   | 5.71  | 126.56      | 119.70   |
| 8   | AB    | 64   | A    | O4'-C1'-N9  | 5.71  | 112.77      | 108.20   |
| 33  | DA    | 351  | G    | C8-N9-C4    | -5.71 | 104.11      | 106.40   |
| 8   | AB    | 1973 | G    | C8-N9-C4    | -5.71 | 104.11      | 106.40   |
| 8   | AB    | 1283 | G    | C4'-C3'-C2' | -5.71 | 96.89       | 102.60   |
| 8   | CB    | 1201 | U    | C4'-C3'-C2' | -5.71 | 96.89       | 102.60   |
| 33  | BA    | 78   | A    | C3'-C2'-C1' | -5.71 | 96.93       | 101.50   |
| 8   | CB    | 1131 | G    | N3-C4-C5    | -5.71 | 125.75      | 128.60   |
| 8   | CB    | 2631 | G    | C4'-C3'-C2' | -5.71 | 96.89       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 780  | A    | O4'-C1'-N9  | 5.71  | 112.77      | 108.20   |
| 33  | DA    | 1483 | A    | P-O3'-C3'   | 5.71  | 126.55      | 119.70   |
| 8   | AB    | 2072 | C    | N1-C1'-C2'  | 5.71  | 121.42      | 114.00   |
| 8   | CB    | 1125 | G    | C4'-C3'-C2' | -5.71 | 96.89       | 102.60   |
| 33  | DA    | 1425 | U    | N3-C4-O4    | 5.70  | 123.39      | 119.40   |
| 8   | AB    | 468  | G    | C4'-C3'-C2' | -5.70 | 96.90       | 102.60   |
| 33  | BA    | 671  | G    | C3'-C2'-C1' | -5.70 | 96.94       | 101.50   |
| 8   | CB    | 405  | U    | C4'-C3'-C2' | -5.70 | 96.90       | 102.60   |
| 8   | AB    | 1451 | C    | C3'-C2'-C1' | 5.70  | 106.06      | 101.50   |
| 8   | CB    | 1512 | C    | C4'-C3'-C2' | -5.70 | 96.90       | 102.60   |
| 8   | CB    | 2386 | A    | C3'-C2'-C1' | 5.70  | 106.06      | 101.50   |
| 8   | CB    | 2676 | C    | C6-N1-C2    | -5.70 | 118.02      | 120.30   |
| 33  | DA    | 15   | G    | C3'-C2'-C1' | 5.70  | 106.06      | 101.50   |
| 8   | AB    | 2554 | U    | C1'-O4'-C4' | -5.70 | 105.34      | 109.90   |
| 33  | BA    | 769  | G    | C4'-C3'-C2' | -5.70 | 96.90       | 102.60   |
| 8   | CB    | 1340 | U    | C1'-O4'-C4' | -5.70 | 105.34      | 109.90   |
| 8   | CB    | 386  | G    | C1'-O4'-C4' | -5.70 | 105.34      | 109.90   |
| 8   | CB    | 792  | A    | O4'-C1'-N9  | 5.70  | 112.76      | 108.20   |
| 8   | AB    | 2776 | A    | P-O3'-C3'   | 5.70  | 126.53      | 119.70   |
| 8   | CB    | 2798 | U    | C1'-O4'-C4' | -5.70 | 105.34      | 109.90   |
| 33  | DA    | 644  | U    | N1-C1'-C2'  | -5.70 | 105.73      | 112.00   |
| 8   | AB    | 852  | U    | O4'-C1'-N1  | -5.69 | 103.64      | 108.20   |
| 33  | BA    | 673  | A    | P-O3'-C3'   | -5.69 | 112.87      | 119.70   |
| 33  | DA    | 246  | A    | P-O3'-C3'   | 5.69  | 126.53      | 119.70   |
| 8   | CB    | 276  | U    | C1'-O4'-C4' | -5.69 | 105.35      | 109.90   |
| 33  | DA    | 1277 | C    | C4'-C3'-C2' | -5.69 | 96.91       | 102.60   |
| 8   | AB    | 119  | A    | N9-C1'-C2'  | 5.69  | 121.40      | 114.00   |
| 8   | AB    | 2259 | U    | O4'-C1'-N1  | 5.69  | 112.75      | 108.20   |
| 33  | BA    | 646  | G    | P-O3'-C3'   | -5.69 | 112.87      | 119.70   |
| 8   | CB    | 733  | G    | C4'-C3'-C2' | -5.69 | 96.91       | 102.60   |
| 8   | CB    | 2207 | C    | P-O3'-C3'   | -5.69 | 112.87      | 119.70   |
| 33  | BA    | 817  | C    | P-O3'-C3'   | 5.69  | 126.53      | 119.70   |
| 33  | DA    | 264  | C    | C1'-O4'-C4' | -5.69 | 105.35      | 109.90   |
| 8   | AB    | 120  | U    | O4'-C1'-N1  | -5.69 | 103.65      | 108.20   |
| 8   | AB    | 1999 | C    | N1-C1'-C2'  | -5.69 | 105.74      | 112.00   |
| 33  | BA    | 435  | A    | C3'-C2'-C1' | -5.69 | 96.95       | 101.50   |
| 33  | BA    | 742  | G    | C3'-C2'-C1' | -5.69 | 96.95       | 101.50   |
| 8   | AB    | 2024 | G    | C3'-C2'-C1' | -5.68 | 96.95       | 101.50   |
| 33  | BA    | 766  | A    | C4'-C3'-C2' | -5.68 | 96.92       | 102.60   |
| 33  | BA    | 875  | U    | O4'-C1'-N1  | 5.68  | 112.75      | 108.20   |
| 8   | CB    | 2800 | A    | O4'-C1'-N9  | 5.68  | 112.75      | 108.20   |
| 33  | DA    | 669  | G    | C2-N3-C4    | -5.68 | 109.06      | 111.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 1185 | G    | P-O3'-C3'   | 5.68  | 126.52      | 119.70   |
| 8   | CB    | 2051 | A    | O4'-C1'-N9  | -5.68 | 103.65      | 108.20   |
| 8   | CB    | 2060 | A    | C3'-C2'-C1' | -5.68 | 96.95       | 101.50   |
| 33  | DA    | 677  | U    | P-O3'-C3'   | -5.68 | 112.88      | 119.70   |
| 33  | DA    | 1245 | C    | C4'-C3'-C2' | -5.68 | 96.92       | 102.60   |
| 33  | DA    | 1489 | G    | C8-N9-C4    | -5.68 | 104.13      | 106.40   |
| 8   | CB    | 1692 | U    | C1'-O4'-C4' | -5.68 | 105.36      | 109.90   |
| 33  | DA    | 434  | U    | C5'-C4'-O4' | 5.68  | 115.92      | 109.10   |
| 33  | DA    | 1473 | G    | P-O3'-C3'   | -5.68 | 112.88      | 119.70   |
| 8   | CB    | 1747 | U    | P-O3'-C3'   | 5.68  | 126.52      | 119.70   |
| 33  | DA    | 140  | U    | P-O3'-C3'   | -5.68 | 112.89      | 119.70   |
| 33  | DA    | 902  | G    | C4-C5-N7    | -5.68 | 108.53      | 110.80   |
| 8   | AB    | 733  | G    | C4'-C3'-C2' | -5.68 | 96.92       | 102.60   |
| 8   | AB    | 99   | U    | O4'-C1'-N1  | 5.68  | 112.74      | 108.20   |
| 8   | AB    | 2091 | C    | O4'-C1'-N1  | 5.68  | 112.74      | 108.20   |
| 33  | BA    | 101  | A    | C3'-C2'-C1' | -5.68 | 96.96       | 101.50   |
| 8   | CB    | 865  | C    | O4'-C1'-N1  | 5.68  | 112.74      | 108.20   |
| 8   | CB    | 2225 | A    | O4'-C1'-N9  | -5.68 | 103.66      | 108.20   |
| 8   | CB    | 2284 | A    | O4'-C1'-N9  | -5.68 | 103.66      | 108.20   |
| 33  | DA    | 1480 | A    | P-O3'-C3'   | 5.68  | 126.51      | 119.70   |
| 33  | BA    | 727  | G    | O4'-C4'-C3' | -5.67 | 98.33       | 104.00   |
| 8   | CB    | 740  | C    | O4'-C1'-N1  | -5.67 | 103.66      | 108.20   |
| 8   | CB    | 463  | G    | C4'-C3'-C2' | -5.67 | 96.93       | 102.60   |
| 8   | CB    | 1857 | G    | C1'-O4'-C4' | -5.67 | 105.36      | 109.90   |
| 33  | DA    | 714  | G    | C2-N3-C4    | -5.67 | 109.06      | 111.90   |
| 33  | DA    | 1473 | G    | N1-C6-O6    | 5.67  | 123.30      | 119.90   |
| 8   | CB    | 994  | C    | C1'-O4'-C4' | -5.67 | 105.36      | 109.90   |
| 8   | CB    | 1908 | C    | O4'-C1'-N1  | 5.67  | 112.73      | 108.20   |
| 8   | CB    | 1934 | C    | P-O3'-C3'   | 5.67  | 126.50      | 119.70   |
| 8   | CB    | 2250 | G    | N3-C4-C5    | 5.67  | 131.43      | 128.60   |
| 33  | DA    | 1482 | G    | N9-C1'-C2'  | 5.67  | 121.37      | 114.00   |
| 8   | CB    | 867  | C    | P-O3'-C3'   | -5.67 | 112.90      | 119.70   |
| 33  | DA    | 1359 | C    | O4'-C1'-N1  | 5.67  | 112.73      | 108.20   |
| 33  | BA    | 992  | U    | C3'-C2'-C1' | 5.66  | 106.03      | 101.50   |
| 8   | CB    | 753  | A    | P-O3'-C3'   | -5.66 | 112.90      | 119.70   |
| 33  | DA    | 640  | A    | C8-N9-C4    | -5.66 | 103.53      | 105.80   |
| 33  | DA    | 913  | A    | C1'-O4'-C4' | -5.66 | 105.37      | 109.90   |
| 8   | CB    | 2425 | A    | N1-C2-N3    | 5.66  | 132.13      | 129.30   |
| 8   | AB    | 2230 | G    | O4'-C1'-N9  | 5.66  | 112.73      | 108.20   |
| 8   | CB    | 2630 | G    | O4'-C4'-C3' | -5.66 | 98.34       | 104.00   |
| 33  | DA    | 1337 | G    | C8-N9-C4    | -5.66 | 104.14      | 106.40   |
| 8   | AB    | 2576 | G    | C4-N9-C1'   | 5.66  | 133.86      | 126.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | BA    | 709  | U    | O5'-C5'-C4' | -5.66 | 100.95      | 111.70   |
| 33  | BA    | 1468 | A    | C5'-C4'-C3' | -5.66 | 106.94      | 116.00   |
| 33  | DA    | 902  | G    | N9-C4-C5    | 5.66  | 107.66      | 105.40   |
| 8   | AB    | 2351 | G    | P-O3'-C3'   | 5.66  | 126.49      | 119.70   |
| 8   | CB    | 1020 | A    | C3'-C2'-C1' | 5.66  | 106.03      | 101.50   |
| 8   | AB    | 527  | C    | O3'-P-O5'   | -5.66 | 93.25       | 104.00   |
| 8   | CB    | 1730 | C    | C4'-C3'-C2' | -5.66 | 96.94       | 102.60   |
| 8   | CB    | 1953 | A    | C4'-C3'-C2' | -5.66 | 96.94       | 102.60   |
| 8   | CB    | 2060 | A    | C4'-C3'-C2' | -5.66 | 96.94       | 102.60   |
| 33  | BA    | 768  | A    | O4'-C1'-N9  | -5.65 | 103.68      | 108.20   |
| 8   | CB    | 2319 | G    | O4'-C1'-N9  | -5.65 | 103.68      | 108.20   |
| 33  | DA    | 316  | C    | C4'-C3'-C2' | -5.65 | 96.95       | 102.60   |
| 33  | DA    | 401  | C    | N3-C4-C5    | -5.65 | 119.64      | 121.90   |
| 33  | DA    | 1468 | A    | N9-C1'-C2'  | -5.65 | 105.78      | 112.00   |
| 8   | AB    | 2133 | G    | C4'-C3'-C2' | -5.65 | 96.95       | 102.60   |
| 8   | AB    | 333  | G    | C4-N9-C1'   | 5.65  | 133.84      | 126.50   |
| 8   | AB    | 2332 | C    | C4'-C3'-C2' | -5.65 | 96.95       | 102.60   |
| 8   | CB    | 1750 | G    | C3'-C2'-C1' | -5.65 | 96.98       | 101.50   |
| 8   | AB    | 1163 | G    | C4'-C3'-C2' | -5.64 | 96.96       | 102.60   |
| 8   | AB    | 2029 | G    | C1'-O4'-C4' | -5.64 | 105.38      | 109.90   |
| 8   | CB    | 1356 | G    | C8-N9-C4    | -5.64 | 104.14      | 106.40   |
| 8   | CB    | 1369 | G    | C5-C6-O6    | -5.64 | 125.21      | 128.60   |
| 8   | CB    | 1987 | A    | O4'-C4'-C3' | -5.64 | 98.36       | 104.00   |
| 8   | CB    | 741  | U    | C5-C4-O4    | -5.64 | 122.51      | 125.90   |
| 33  | BA    | 913  | A    | C3'-C2'-C1' | 5.64  | 106.01      | 101.50   |
| 8   | CB    | 1112 | G    | C4'-C3'-C2' | -5.64 | 96.96       | 102.60   |
| 8   | CB    | 1247 | A    | O4'-C1'-C2' | -5.64 | 100.16      | 105.80   |
| 33  | DA    | 595  | A    | C4'-C3'-C2' | 5.64  | 108.24      | 102.60   |
| 8   | AB    | 2629 | U    | C1'-O4'-C4' | -5.64 | 105.39      | 109.90   |
| 8   | CB    | 45   | G    | C4'-C3'-C2' | -5.64 | 96.96       | 102.60   |
| 33  | DA    | 629  | A    | C8-N9-C4    | -5.64 | 103.54      | 105.80   |
| 33  | DA    | 906  | A    | C4'-C3'-C2' | -5.64 | 96.96       | 102.60   |
| 8   | AB    | 1187 | G    | O4'-C1'-N9  | -5.64 | 103.69      | 108.20   |
| 8   | AB    | 1273 | U    | N1-C1'-C2'  | 5.64  | 121.33      | 114.00   |
| 8   | AB    | 1553 | A    | O4'-C1'-N9  | 5.64  | 112.71      | 108.20   |
| 8   | CB    | 1695 | G    | N3-C4-C5    | 5.64  | 131.42      | 128.60   |
| 8   | AB    | 1906 | G    | C3'-C2'-C1' | -5.63 | 96.99       | 101.50   |
| 8   | CB    | 1212 | G    | N9-C1'-C2'  | -5.63 | 105.80      | 112.00   |
| 8   | CB    | 2109 | U    | O4'-C1'-N1  | 5.63  | 112.71      | 108.20   |
| 7   | AA    | 95   | U    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 8   | AB    | 2727 | A    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 8   | CB    | 1976 | U    | C5-C6-N1    | 5.63  | 125.52      | 122.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 219  | U    | C3'-C2'-C1' | -5.63 | 97.00       | 101.50   |
| 33  | DA    | 247  | G    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 33  | DA    | 765  | G    | O4'-C4'-C3' | -5.63 | 98.37       | 104.00   |
| 8   | AB    | 1692 | U    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 33  | BA    | 701  | U    | O4'-C1'-N1  | 5.63  | 112.70      | 108.20   |
| 8   | CB    | 2216 | G    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 33  | DA    | 781  | A    | C5-C6-N6    | -5.63 | 119.20      | 123.70   |
| 33  | DA    | 894  | G    | N3-C4-C5    | -5.63 | 125.79      | 128.60   |
| 8   | AB    | 2673 | G    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 33  | BA    | 1239 | A    | O4'-C1'-N9  | 5.63  | 112.70      | 108.20   |
| 33  | BA    | 1404 | C    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 33  | DA    | 1266 | G    | C3'-C2'-C1' | -5.63 | 97.00       | 101.50   |
| 8   | CB    | 530  | G    | P-O3'-C3'   | 5.62  | 126.45      | 119.70   |
| 8   | CB    | 1257 | C    | C4-C5-C6    | 5.62  | 120.21      | 117.40   |
| 8   | CB    | 2078 | C    | O4'-C1'-N1  | -5.62 | 103.70      | 108.20   |
| 8   | CB    | 2288 | A    | C4-C5-N7    | -5.62 | 107.89      | 110.70   |
| 8   | CB    | 2510 | C    | C3'-C2'-C1' | -5.62 | 97.00       | 101.50   |
| 8   | AB    | 2488 | G    | O4'-C1'-N9  | 5.62  | 112.70      | 108.20   |
| 33  | BA    | 427  | U    | C1'-O4'-C4' | -5.62 | 105.40      | 109.90   |
| 33  | BA    | 380  | G    | C4'-C3'-C2' | -5.62 | 96.98       | 102.60   |
| 8   | AB    | 372  | G    | N3-C4-C5    | -5.62 | 125.79      | 128.60   |
| 8   | AB    | 442  | G    | C5-C6-O6    | -5.62 | 125.23      | 128.60   |
| 33  | DA    | 752  | G    | P-O3'-C3'   | 5.62  | 126.44      | 119.70   |
| 8   | AB    | 2032 | G    | C5'-C4'-O4' | -5.62 | 102.36      | 109.10   |
| 8   | AB    | 2205 | A    | O4'-C1'-N9  | -5.62 | 103.70      | 108.20   |
| 33  | DA    | 695  | A    | N9-C1'-C2'  | 5.62  | 121.31      | 114.00   |
| 8   | AB    | 307  | G    | C3'-C2'-C1' | -5.62 | 97.01       | 101.50   |
| 8   | AB    | 773  | U    | P-O3'-C3'   | 5.62  | 126.44      | 119.70   |
| 7   | CA    | 99   | A    | P-O3'-C3'   | 5.62  | 126.44      | 119.70   |
| 8   | CB    | 242  | G    | O4'-C1'-C2' | -5.62 | 100.18      | 105.80   |
| 33  | DA    | 1317 | C    | O4'-C1'-N1  | 5.62  | 112.69      | 108.20   |
| 33  | BA    | 128  | G    | C3'-C2'-C1' | 5.61  | 105.99      | 101.50   |
| 8   | AB    | 564  | C    | P-O3'-C3'   | -5.61 | 112.97      | 119.70   |
| 7   | AA    | 87   | U    | C5'-C4'-O4' | 5.61  | 115.83      | 109.10   |
| 8   | AB    | 795  | C    | C4'-C3'-C2' | -5.61 | 96.99       | 102.60   |
| 8   | AB    | 2647 | U    | N1-C1'-C2'  | -5.61 | 105.83      | 112.00   |
| 7   | CA    | 87   | U    | C5'-C4'-O4' | 5.61  | 115.83      | 109.10   |
| 8   | CB    | 2025 | C    | C4'-C3'-C2' | -5.61 | 96.99       | 102.60   |
| 33  | DA    | 78   | A    | C3'-C2'-C1' | -5.61 | 97.01       | 101.50   |
| 33  | DA    | 545  | C    | C6-N1-C2    | 5.61  | 122.54      | 120.30   |
| 33  | DA    | 776  | G    | O4'-C1'-N9  | 5.61  | 112.69      | 108.20   |
| 8   | AB    | 379  | G    | N1-C6-O6    | 5.61  | 123.26      | 119.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 421  | C    | O3'-P-O5'   | -5.61 | 93.34       | 104.00   |
| 8   | AB    | 2211 | A    | O4'-C1'-N9  | 5.61  | 112.69      | 108.20   |
| 8   | CB    | 2015 | A    | C1'-O4'-C4' | -5.61 | 105.41      | 109.90   |
| 8   | CB    | 2189 | U    | C4'-C3'-C2' | -5.61 | 96.99       | 102.60   |
| 8   | AB    | 45   | G    | C4'-C3'-C2' | -5.61 | 96.99       | 102.60   |
| 8   | AB    | 1829 | A    | O4'-C1'-N9  | -5.61 | 103.72      | 108.20   |
| 33  | DA    | 669  | G    | C4-C5-N7    | 5.61  | 113.04      | 110.80   |
| 8   | AB    | 356  | G    | N1-C6-O6    | 5.60  | 123.26      | 119.90   |
| 8   | AB    | 2748 | A    | N9-C1'-C2'  | -5.60 | 105.83      | 112.00   |
| 33  | DA    | 1422 | G    | C5'-C4'-O4' | 5.60  | 115.82      | 109.10   |
| 8   | CB    | 403  | U    | O4'-C1'-N1  | 5.60  | 112.68      | 108.20   |
| 8   | CB    | 1296 | G    | P-O3'-C3'   | 5.60  | 126.42      | 119.70   |
| 8   | CB    | 2281 | A    | P-O3'-C3'   | 5.60  | 126.42      | 119.70   |
| 8   | AB    | 973  | A    | N9-C1'-C2'  | 5.60  | 121.28      | 114.00   |
| 8   | AB    | 1438 | U    | C3'-C2'-C1' | 5.60  | 105.98      | 101.50   |
| 33  | BA    | 247  | G    | C3'-C2'-C1' | -5.60 | 97.02       | 101.50   |
| 8   | CB    | 2689 | U    | C4'-C3'-C2' | -5.60 | 97.00       | 102.60   |
| 8   | AB    | 1268 | A    | C8-N9-C4    | -5.60 | 103.56      | 105.80   |
| 8   | AB    | 1610 | A    | N9-C1'-C2'  | 5.60  | 121.28      | 114.00   |
| 8   | CB    | 1888 | G    | N9-C1'-C2'  | 5.59  | 121.27      | 114.00   |
| 8   | CB    | 2283 | C    | C4'-C3'-C2' | -5.59 | 97.00       | 102.60   |
| 33  | DA    | 356  | A    | C1'-O4'-C4' | -5.59 | 105.42      | 109.90   |
| 33  | DA    | 771  | G    | C8-N9-C4    | -5.59 | 104.16      | 106.40   |
| 33  | DA    | 1358 | U    | O4'-C1'-N1  | 5.59  | 112.67      | 108.20   |
| 8   | AB    | 126  | A    | N1-C6-N6    | -5.59 | 115.25      | 118.60   |
| 8   | AB    | 1819 | A    | O5'-C5'-C4' | -5.59 | 101.08      | 111.70   |
| 7   | CA    | 47   | C    | C1'-O4'-C4' | -5.59 | 105.43      | 109.90   |
| 33  | DA    | 1520 | C    | C4'-C3'-C2' | -5.59 | 97.01       | 102.60   |
| 8   | CB    | 1959 | G    | C4'-C3'-C2' | -5.59 | 97.01       | 102.60   |
| 8   | CB    | 1374 | G    | N3-C4-C5    | 5.59  | 131.39      | 128.60   |
| 8   | AB    | 504  | A    | C3'-C2'-C1' | -5.59 | 97.03       | 101.50   |
| 8   | AB    | 920  | A    | C4'-C3'-C2' | -5.59 | 97.01       | 102.60   |
| 8   | AB    | 2514 | U    | P-O3'-C3'   | -5.59 | 113.00      | 119.70   |
| 8   | AB    | 2689 | U    | C4'-C3'-C2' | -5.59 | 97.01       | 102.60   |
| 8   | CB    | 669  | G    | C3'-C2'-C1' | 5.59  | 105.97      | 101.50   |
| 8   | CB    | 1301 | A    | N9-C1'-C2'  | 5.59  | 121.26      | 114.00   |
| 8   | CB    | 1996 | C    | O4'-C1'-C2' | -5.59 | 100.21      | 105.80   |
| 33  | DA    | 411  | A    | C3'-C2'-C1' | 5.59  | 105.97      | 101.50   |
| 33  | DA    | 808  | C    | P-O3'-C3'   | -5.59 | 113.00      | 119.70   |
| 8   | AB    | 1327 | A    | C3'-C2'-C1' | 5.58  | 105.97      | 101.50   |
| 8   | AB    | 1288 | G    | C1'-O4'-C4' | -5.58 | 105.44      | 109.90   |
| 8   | AB    | 1633 | G    | C3'-C2'-C1' | 5.58  | 105.97      | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 1009 | A    | P-O3'-C3'   | -5.58 | 113.00      | 119.70   |
| 23  | CQ    | 38   | VAL  | N-CA-C      | -5.58 | 95.93       | 111.00   |
| 8   | AB    | 2880 | C    | C6-N1-C2    | -5.58 | 118.07      | 120.30   |
| 33  | BA    | 742  | G    | C4'-C3'-C2' | -5.58 | 97.02       | 102.60   |
| 33  | BA    | 772  | U    | C4'-C3'-C2' | -5.58 | 97.02       | 102.60   |
| 8   | CB    | 1041 | G    | O4'-C1'-N9  | 5.58  | 112.66      | 108.20   |
| 8   | AB    | 807  | U    | O4'-C1'-N1  | -5.58 | 103.74      | 108.20   |
| 8   | AB    | 1845 | G    | C4'-C3'-C2' | -5.58 | 97.03       | 102.60   |
| 8   | AB    | 2620 | C    | C1'-O4'-C4' | -5.58 | 105.44      | 109.90   |
| 8   | CB    | 775  | G    | C3'-C2'-C1' | -5.58 | 97.04       | 101.50   |
| 8   | CB    | 983  | A    | C3'-C2'-C1' | 5.58  | 105.96      | 101.50   |
| 33  | BA    | 779  | C    | O4'-C1'-N1  | -5.57 | 103.74      | 108.20   |
| 33  | DA    | 103  | U    | C4'-C3'-C2' | -5.57 | 97.03       | 102.60   |
| 8   | AB    | 792  | A    | O4'-C1'-N9  | 5.57  | 112.66      | 108.20   |
| 8   | CB    | 191  | A    | C8-N9-C4    | -5.57 | 103.57      | 105.80   |
| 8   | AB    | 590  | A    | O4'-C1'-N9  | 5.57  | 112.66      | 108.20   |
| 8   | AB    | 2216 | G    | C4'-C3'-C2' | -5.57 | 97.03       | 102.60   |
| 8   | AB    | 2880 | C    | C2-N1-C1'   | 5.57  | 124.93      | 118.80   |
| 33  | BA    | 765  | G    | N3-C4-N9    | 5.57  | 129.34      | 126.00   |
| 33  | BA    | 1041 | G    | C4'-C3'-C2' | -5.57 | 97.03       | 102.60   |
| 33  | DA    | 266  | G    | C3'-C2'-C1' | 5.57  | 105.95      | 101.50   |
| 33  | DA    | 936  | C    | C3'-C2'-C1' | -5.57 | 97.05       | 101.50   |
| 8   | AB    | 1191 | G    | N9-C1'-C2'  | -5.56 | 105.88      | 112.00   |
| 8   | AB    | 2592 | G    | C4'-C3'-C2' | -5.56 | 97.04       | 102.60   |
| 8   | CB    | 1929 | G    | C3'-C2'-C1' | -5.56 | 97.05       | 101.50   |
| 33  | DA    | 9    | G    | O4'-C1'-N9  | 5.56  | 112.65      | 108.20   |
| 33  | DA    | 654  | G    | P-O3'-C3'   | -5.56 | 113.03      | 119.70   |
| 8   | CB    | 370  | G    | P-O3'-C3'   | 5.56  | 126.37      | 119.70   |
| 8   | AB    | 2017 | U    | N1-C1'-C2'  | 5.56  | 121.23      | 114.00   |
| 8   | CB    | 1796 | U    | O4'-C4'-C3' | -5.56 | 98.44       | 104.00   |
| 8   | CB    | 1907 | G    | C3'-C2'-C1' | -5.56 | 97.05       | 101.50   |
| 33  | DA    | 220  | G    | C3'-C2'-C1' | -5.56 | 97.05       | 101.50   |
| 33  | DA    | 362  | G    | C4'-C3'-C2' | -5.56 | 97.04       | 102.60   |
| 33  | BA    | 671  | G    | C8-N9-C4    | -5.55 | 104.18      | 106.40   |
| 8   | AB    | 1487 | U    | C3'-C2'-C1' | -5.55 | 97.06       | 101.50   |
| 8   | AB    | 1826 | G    | O4'-C1'-N9  | -5.55 | 103.76      | 108.20   |
| 33  | DA    | 1337 | G    | O4'-C1'-N9  | 5.55  | 112.64      | 108.20   |
| 33  | DA    | 1441 | A    | C8-N9-C4    | -5.55 | 103.58      | 105.80   |
| 7   | CA    | 54   | G    | C4'-C3'-C2' | -5.55 | 97.05       | 102.60   |
| 33  | DA    | 56   | U    | C4'-C3'-C2' | -5.55 | 97.05       | 102.60   |
| 7   | CA    | 53   | A    | C3'-C2'-C1' | -5.55 | 97.06       | 101.50   |
| 8   | AB    | 970  | U    | O4'-C1'-N1  | 5.55  | 112.64      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2045 | C    | C6-N1-C2    | 5.55  | 122.52      | 120.30   |
| 8   | CB    | 80   | G    | C3'-C2'-C1' | -5.55 | 97.06       | 101.50   |
| 8   | CB    | 2447 | G    | O4'-C1'-N9  | -5.55 | 103.76      | 108.20   |
| 8   | AB    | 1350 | C    | P-O3'-C3'   | -5.54 | 113.05      | 119.70   |
| 8   | CB    | 1364 | G    | P-O3'-C3'   | -5.54 | 113.05      | 119.70   |
| 8   | CB    | 1707 | G    | P-O3'-C3'   | 5.54  | 126.35      | 119.70   |
| 8   | AB    | 2103 | C    | C3'-C2'-C1' | 5.54  | 105.94      | 101.50   |
| 7   | CA    | 17   | C    | O4'-C1'-N1  | 5.54  | 112.64      | 108.20   |
| 8   | CB    | 1973 | G    | O4'-C1'-C2' | -5.54 | 100.26      | 105.80   |
| 8   | CB    | 2082 | A    | C4'-C3'-C2' | -5.54 | 97.06       | 102.60   |
| 33  | DA    | 761  | G    | N1-C6-O6    | 5.54  | 123.23      | 119.90   |
| 33  | DA    | 1351 | U    | O4'-C1'-N1  | 5.54  | 112.63      | 108.20   |
| 33  | BA    | 926  | G    | P-O3'-C3'   | 5.54  | 126.35      | 119.70   |
| 8   | CB    | 2514 | U    | P-O3'-C3'   | -5.54 | 113.05      | 119.70   |
| 8   | CB    | 454  | A    | P-O3'-C3'   | 5.54  | 126.35      | 119.70   |
| 8   | CB    | 2473 | U    | C3'-C2'-C1' | 5.54  | 105.93      | 101.50   |
| 33  | DA    | 613  | C    | C4'-C3'-C2' | -5.54 | 97.06       | 102.60   |
| 33  | DA    | 1016 | A    | C3'-C2'-C1' | -5.54 | 97.07       | 101.50   |
| 8   | CB    | 875  | G    | O4'-C1'-N9  | 5.54  | 112.63      | 108.20   |
| 8   | CB    | 1937 | A    | O4'-C1'-N9  | -5.54 | 103.77      | 108.20   |
| 8   | CB    | 2672 | U    | P-O3'-C3'   | -5.54 | 113.06      | 119.70   |
| 33  | DA    | 103  | U    | C3'-C2'-C1' | -5.54 | 97.07       | 101.50   |
| 33  | DA    | 880  | C    | C3'-C2'-C1' | -5.54 | 97.07       | 101.50   |
| 8   | CB    | 941  | A    | C4'-C3'-C2' | -5.53 | 97.07       | 102.60   |
| 33  | DA    | 1297 | G    | C3'-C2'-C1' | 5.53  | 105.93      | 101.50   |
| 8   | AB    | 1224 | U    | O4'-C1'-N1  | -5.53 | 103.78      | 108.20   |
| 8   | AB    | 1554 | U    | C4'-C3'-C2' | -5.53 | 97.07       | 102.60   |
| 8   | AB    | 2311 | A    | C3'-C2'-C1' | 5.53  | 105.93      | 101.50   |
| 8   | AB    | 226  | A    | C3'-C2'-C1' | 5.53  | 105.92      | 101.50   |
| 8   | AB    | 332  | A    | C8-N9-C4    | 5.53  | 108.01      | 105.80   |
| 8   | AB    | 982  | C    | N1-C1'-C2'  | 5.53  | 121.19      | 114.00   |
| 33  | DA    | 546  | A    | O4'-C1'-N9  | -5.53 | 103.78      | 108.20   |
| 33  | DA    | 973  | G    | O4'-C1'-N9  | 5.53  | 112.62      | 108.20   |
| 33  | DA    | 1053 | G    | C1'-O4'-C4' | -5.53 | 105.47      | 109.90   |
| 8   | AB    | 1857 | G    | C1'-O4'-C4' | -5.53 | 105.48      | 109.90   |
| 8   | AB    | 2641 | G    | N9-C1'-C2'  | -5.53 | 105.92      | 112.00   |
| 33  | BA    | 665  | A    | C3'-C2'-C1' | 5.53  | 105.92      | 101.50   |
| 7   | CA    | 89   | U    | C4'-C3'-C2' | -5.53 | 97.07       | 102.60   |
| 8   | CB    | 1378 | A    | C4'-C3'-C2' | -5.53 | 97.07       | 102.60   |
| 8   | CB    | 2066 | C    | C4'-C3'-C2' | -5.53 | 97.07       | 102.60   |
| 9   | AC    | 173  | LEU  | N-CA-C      | 5.53  | 125.92      | 111.00   |
| 7   | CA    | 15   | A    | C4'-C3'-C2' | -5.53 | 97.07       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 1273 | C    | C3'-C2'-C1' | -5.53 | 97.08       | 101.50   |
| 33  | DA    | 1335 | U    | C1'-O4'-C4' | -5.53 | 105.48      | 109.90   |
| 8   | CB    | 2564 | A    | N9-C1'-C2'  | 5.52  | 121.18      | 114.00   |
| 8   | CB    | 2592 | G    | C4'-C3'-C2' | -5.52 | 97.08       | 102.60   |
| 41  | DI    | 62   | LEU  | CA-CB-CG    | 5.52  | 128.00      | 115.30   |
| 8   | AB    | 442  | G    | N1-C6-O6    | 5.52  | 123.21      | 119.90   |
| 9   | CC    | 173  | LEU  | N-CA-C      | 5.52  | 125.90      | 111.00   |
| 8   | CB    | 583  | G    | C8-N9-C4    | -5.52 | 104.19      | 106.40   |
| 8   | CB    | 745  | G    | C6-C5-N7    | -5.52 | 127.09      | 130.40   |
| 8   | CB    | 1664 | A    | C8-N9-C4    | -5.52 | 103.59      | 105.80   |
| 33  | DA    | 391  | G    | C8-N9-C4    | -5.52 | 104.19      | 106.40   |
| 33  | BA    | 1515 | G    | C5-C6-O6    | -5.52 | 125.29      | 128.60   |
| 33  | DA    | 350  | G    | O4'-C1'-C2' | -5.52 | 100.28      | 105.80   |
| 8   | AB    | 994  | C    | C6-N1-C1'   | -5.51 | 114.18      | 120.80   |
| 8   | AB    | 1759 | A    | P-O3'-C3'   | -5.51 | 113.08      | 119.70   |
| 8   | CB    | 136  | G    | C3'-C2'-C1' | -5.51 | 97.09       | 101.50   |
| 8   | CB    | 196  | A    | N1-C6-N6    | 5.51  | 121.91      | 118.60   |
| 8   | CB    | 1454 | C    | C1'-O4'-C4' | -5.51 | 105.49      | 109.90   |
| 8   | CB    | 2311 | A    | C3'-C2'-C1' | 5.51  | 105.91      | 101.50   |
| 8   | CB    | 527  | C    | O3'-P-O5'   | -5.51 | 93.53       | 104.00   |
| 8   | CB    | 973  | A    | N9-C1'-C2'  | 5.51  | 121.17      | 114.00   |
| 8   | CB    | 1241 | A    | C1'-O4'-C4' | -5.51 | 105.49      | 109.90   |
| 8   | AB    | 2569 | G    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 33  | BA    | 755  | G    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 8   | CB    | 2363 | G    | P-O3'-C3'   | -5.51 | 113.09      | 119.70   |
| 33  | DA    | 973  | G    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 8   | AB    | 1039 | A    | P-O3'-C3'   | -5.51 | 113.09      | 119.70   |
| 8   | CB    | 2659 | G    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 8   | CB    | 2663 | G    | C3'-C2'-C1' | -5.51 | 97.09       | 101.50   |
| 33  | DA    | 851  | G    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 33  | BA    | 346  | G    | C1'-O4'-C4' | -5.51 | 105.49      | 109.90   |
| 8   | CB    | 1263 | U    | N3-C4-C5    | -5.51 | 111.30      | 114.60   |
| 8   | AB    | 1412 | U    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 8   | CB    | 332  | A    | N9-C1'-C2'  | -5.51 | 105.94      | 112.00   |
| 8   | CB    | 1035 | U    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 8   | CB    | 1642 | G    | N1-C6-O6    | 5.51  | 123.20      | 119.90   |
| 33  | DA    | 816  | A    | C4'-C3'-C2' | -5.51 | 97.09       | 102.60   |
| 8   | AB    | 807  | U    | C4'-C3'-C2' | -5.50 | 97.10       | 102.60   |
| 8   | AB    | 865  | C    | C1'-O4'-C4' | -5.50 | 105.50      | 109.90   |
| 8   | AB    | 2234 | G    | N3-C4-C5    | -5.50 | 125.85      | 128.60   |
| 33  | BA    | 669  | G    | O4'-C1'-N9  | 5.50  | 112.60      | 108.20   |
| 8   | CB    | 1566 | A    | N9-C1'-C2'  | 5.50  | 121.16      | 114.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 1953 | A    | C4'-C3'-C2' | -5.50 | 97.10       | 102.60   |
| 8   | CB    | 486  | C    | C3'-C2'-C1' | -5.50 | 97.10       | 101.50   |
| 8   | CB    | 778  | G    | C8-N9-C4    | -5.50 | 104.20      | 106.40   |
| 8   | CB    | 1712 | U    | P-O3'-C3'   | 5.50  | 126.30      | 119.70   |
| 8   | CB    | 1826 | G    | C4'-C3'-C2' | -5.50 | 97.10       | 102.60   |
| 8   | CB    | 2561 | U    | N3-C4-O4    | 5.50  | 123.25      | 119.40   |
| 8   | AB    | 2453 | A    | N1-C6-N6    | 5.50  | 121.90      | 118.60   |
| 7   | AA    | 87   | U    | C6-N1-C2    | -5.50 | 117.70      | 121.00   |
| 7   | CA    | 106  | G    | N3-C4-C5    | -5.50 | 125.85      | 128.60   |
| 33  | DA    | 685  | G    | C4-C5-C6    | 5.50  | 122.10      | 118.80   |
| 8   | AB    | 1460 | U    | O4'-C1'-N1  | -5.50 | 103.80      | 108.20   |
| 8   | CB    | 2595 | G    | C4'-C3'-C2' | -5.50 | 97.11       | 102.60   |
| 8   | AB    | 101  | A    | O4'-C4'-C3' | -5.49 | 98.51       | 104.00   |
| 33  | BA    | 1468 | A    | O5'-C5'-C4' | -5.49 | 101.26      | 111.70   |
| 33  | BA    | 247  | G    | C4'-C3'-C2' | -5.49 | 97.11       | 102.60   |
| 8   | CB    | 228  | C    | C1'-O4'-C4' | -5.49 | 105.51      | 109.90   |
| 8   | CB    | 248  | G    | C5-C6-O6    | -5.49 | 125.31      | 128.60   |
| 33  | DA    | 40   | C    | C5'-C4'-O4' | 5.49  | 115.69      | 109.10   |
| 8   | AB    | 2202 | U    | C4'-C3'-C2' | -5.49 | 97.11       | 102.60   |
| 8   | AB    | 410  | G    | C6-C5-N7    | -5.49 | 127.11      | 130.40   |
| 8   | AB    | 1730 | C    | C4'-C3'-C2' | -5.49 | 97.11       | 102.60   |
| 33  | BA    | 1277 | C    | O4'-C1'-N1  | 5.49  | 112.59      | 108.20   |
| 8   | CB    | 2009 | A    | C4'-C3'-C2' | -5.49 | 97.11       | 102.60   |
| 8   | CB    | 2776 | A    | C3'-C2'-C1' | -5.49 | 97.11       | 101.50   |
| 33  | DA    | 770  | C    | O4'-C4'-C3' | -5.49 | 98.51       | 104.00   |
| 8   | AB    | 680  | C    | O4'-C1'-N1  | 5.49  | 112.59      | 108.20   |
| 8   | AB    | 866  | A    | N9-C1'-C2'  | -5.49 | 105.97      | 112.00   |
| 8   | CB    | 1790 | C    | O4'-C1'-N1  | -5.49 | 103.81      | 108.20   |
| 8   | CB    | 2344 | U    | O4'-C1'-N1  | -5.49 | 103.81      | 108.20   |
| 8   | AB    | 464  | U    | C3'-C2'-C1' | 5.48  | 105.89      | 101.50   |
| 33  | BA    | 1079 | G    | O4'-C1'-N9  | 5.48  | 112.59      | 108.20   |
| 33  | DA    | 1422 | G    | O5'-C5'-C4' | 5.48  | 122.12      | 111.70   |
| 8   | AB    | 1342 | A    | O4'-C1'-N9  | -5.48 | 103.81      | 108.20   |
| 8   | AB    | 1976 | U    | N1-C1'-C2'  | 5.48  | 121.13      | 114.00   |
| 33  | BA    | 700  | G    | C4'-C3'-C2' | -5.48 | 97.12       | 102.60   |
| 7   | CA    | 41   | G    | C3'-C2'-C1' | 5.48  | 105.89      | 101.50   |
| 8   | CB    | 1293 | C    | O4'-C1'-N1  | -5.48 | 103.81      | 108.20   |
| 8   | CB    | 2458 | G    | O4'-C1'-C2' | -5.48 | 100.32      | 105.80   |
| 33  | DA    | 511  | C    | C6-N1-C2    | 5.48  | 122.49      | 120.30   |
| 33  | DA    | 729  | A    | O4'-C1'-N9  | -5.48 | 103.81      | 108.20   |
| 33  | DA    | 1078 | U    | C4'-C3'-C2' | -5.48 | 97.12       | 102.60   |
| 33  | DA    | 1233 | G    | O4'-C1'-N9  | 5.48  | 112.59      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2880 | C    | N1-C1'-C2'  | 5.48  | 121.12      | 114.00   |
| 33  | BA    | 899  | C    | N1-C2-O2    | 5.48  | 122.19      | 118.90   |
| 33  | BA    | 504  | C    | C3'-C2'-C1' | -5.48 | 97.12       | 101.50   |
| 8   | CB    | 1312 | U    | C3'-C2'-C1' | -5.48 | 97.12       | 101.50   |
| 33  | DA    | 782  | A    | O5'-C5'-C4' | 5.48  | 122.10      | 111.70   |
| 8   | AB    | 978  | G    | C1'-O4'-C4' | -5.47 | 105.52      | 109.90   |
| 8   | AB    | 1161 | C    | C4'-C3'-C2' | -5.47 | 97.13       | 102.60   |
| 8   | CB    | 2593 | U    | P-O3'-C3'   | -5.47 | 113.13      | 119.70   |
| 8   | CB    | 2709 | G    | C8-N9-C4    | -5.47 | 104.21      | 106.40   |
| 33  | DA    | 281  | G    | C3'-C2'-C1' | 5.47  | 105.88      | 101.50   |
| 33  | DA    | 1414 | U    | O4'-C4'-C3' | -5.47 | 98.53       | 104.00   |
| 33  | BA    | 1198 | G    | C5'-C4'-O4' | 5.47  | 115.67      | 109.10   |
| 33  | DA    | 428  | G    | P-O3'-C3'   | 5.47  | 126.27      | 119.70   |
| 8   | AB    | 2034 | U    | N1-C1'-C2'  | -5.47 | 105.98      | 112.00   |
| 33  | BA    | 1152 | A    | C3'-C2'-C1' | -5.47 | 97.12       | 101.50   |
| 8   | AB    | 2458 | G    | O4'-C1'-C2' | -5.47 | 100.33      | 105.80   |
| 8   | AB    | 2616 | C    | P-O3'-C3'   | -5.47 | 113.14      | 119.70   |
| 8   | CB    | 1454 | C    | C5-C6-N1    | 5.47  | 123.73      | 121.00   |
| 8   | CB    | 80   | G    | C4'-C3'-C2' | -5.47 | 97.13       | 102.60   |
| 8   | CB    | 745  | G    | O4'-C1'-C2' | -5.47 | 100.33      | 105.80   |
| 8   | CB    | 2219 | U    | C4'-C3'-C2' | -5.47 | 97.13       | 102.60   |
| 33  | DA    | 812  | G    | N1-C6-O6    | 5.47  | 123.18      | 119.90   |
| 8   | AB    | 1420 | A    | O4'-C1'-N9  | 5.46  | 112.57      | 108.20   |
| 33  | BA    | 1309 | G    | C3'-C2'-C1' | -5.46 | 97.13       | 101.50   |
| 8   | AB    | 168  | G    | P-O3'-C3'   | -5.46 | 113.14      | 119.70   |
| 8   | AB    | 39   | G    | C4'-C3'-C2' | -5.46 | 97.14       | 102.60   |
| 8   | CB    | 128  | C    | P-O3'-C3'   | 5.46  | 126.25      | 119.70   |
| 8   | CB    | 1786 | A    | C5'-C4'-O4' | -5.46 | 102.55      | 109.10   |
| 33  | DA    | 1072 | G    | O4'-C1'-N9  | 5.46  | 112.57      | 108.20   |
| 8   | AB    | 587  | C    | C2-N1-C1'   | 5.46  | 124.80      | 118.80   |
| 8   | AB    | 2729 | G    | C8-N9-C4    | -5.46 | 104.22      | 106.40   |
| 33  | BA    | 430  | A    | O4'-C1'-N9  | 5.46  | 112.56      | 108.20   |
| 33  | BA    | 1180 | A    | C3'-C2'-C1' | -5.46 | 97.13       | 101.50   |
| 8   | CB    | 1769 | U    | O4'-C4'-C3' | -5.46 | 98.54       | 104.00   |
| 33  | DA    | 1279 | G    | C8-N9-C4    | -5.46 | 104.22      | 106.40   |
| 8   | AB    | 2587 | A    | O4'-C1'-N9  | -5.46 | 103.84      | 108.20   |
| 8   | CB    | 1819 | A    | C5'-C4'-O4' | -5.46 | 102.55      | 109.10   |
| 7   | AA    | 73   | A    | P-O3'-C3'   | -5.45 | 113.16      | 119.70   |
| 8   | AB    | 4    | U    | C5'-C4'-O4' | -5.45 | 102.56      | 109.10   |
| 8   | AB    | 341  | C    | C4'-C3'-C2' | -5.45 | 97.15       | 102.60   |
| 33  | BA    | 775  | G    | C6-C5-N7    | -5.45 | 127.13      | 130.40   |
| 8   | CB    | 2614 | A    | O4'-C1'-C2' | -5.45 | 100.35      | 105.80   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 243  | U    | C5'-C4'-O4' | -5.45 | 102.56      | 109.10   |
| 7   | CA    | 54   | G    | C3'-C2'-C1' | -5.45 | 97.14       | 101.50   |
| 8   | CB    | 1147 | A    | O4'-C1'-N9  | 5.45  | 112.56      | 108.20   |
| 8   | CB    | 2391 | G    | C4'-C3'-C2' | -5.45 | 97.15       | 102.60   |
| 33  | DA    | 669  | G    | C5-C6-O6    | -5.45 | 125.33      | 128.60   |
| 33  | DA    | 792  | A    | C1'-O4'-C4' | -5.45 | 105.54      | 109.90   |
| 33  | DA    | 1361 | G    | C8-N9-C4    | -5.45 | 104.22      | 106.40   |
| 33  | DA    | 1405 | G    | C3'-C2'-C1' | -5.45 | 97.14       | 101.50   |
| 8   | AB    | 1767 | G    | O4'-C1'-N9  | 5.45  | 112.56      | 108.20   |
| 8   | AB    | 1796 | U    | C4'-C3'-C2' | -5.45 | 97.15       | 102.60   |
| 33  | BA    | 1061 | G    | C3'-C2'-C1' | 5.45  | 105.86      | 101.50   |
| 33  | BA    | 591  | U    | C4'-C3'-C2' | -5.45 | 97.16       | 102.60   |
| 8   | CB    | 2018 | G    | P-O5'-C5'   | -5.45 | 112.19      | 120.90   |
| 8   | CB    | 2594 | C    | N1-C1'-C2'  | 5.45  | 121.08      | 114.00   |
| 33  | DA    | 769  | G    | C3'-C2'-C1' | 5.45  | 105.86      | 101.50   |
| 8   | AB    | 106  | C    | O4'-C1'-N1  | 5.44  | 112.56      | 108.20   |
| 8   | AB    | 530  | G    | O4'-C1'-N9  | 5.44  | 112.56      | 108.20   |
| 33  | BA    | 1048 | G    | C4'-C3'-C2' | -5.44 | 97.16       | 102.60   |
| 8   | CB    | 1255 | U    | N3-C2-O2    | -5.44 | 118.39      | 122.20   |
| 8   | CB    | 1951 | U    | C4'-C3'-C2' | -5.44 | 97.16       | 102.60   |
| 33  | DA    | 776  | G    | C8-N9-C4    | -5.44 | 104.22      | 106.40   |
| 8   | AB    | 524  | G    | C8-N9-C4    | -5.44 | 104.22      | 106.40   |
| 8   | CB    | 347  | A    | O4'-C1'-N9  | 5.44  | 112.55      | 108.20   |
| 8   | CB    | 1285 | A    | O4'-C1'-N9  | -5.44 | 103.85      | 108.20   |
| 33  | DA    | 463  | U    | C3'-C2'-C1' | 5.44  | 105.85      | 101.50   |
| 8   | CB    | 2779 | U    | P-O3'-C3'   | 5.44  | 126.23      | 119.70   |
| 33  | DA    | 1187 | G    | P-O3'-C3'   | -5.44 | 113.17      | 119.70   |
| 8   | AB    | 2283 | C    | C4'-C3'-C2' | -5.44 | 97.16       | 102.60   |
| 8   | CB    | 320  | A    | O5'-C5'-C4' | -5.44 | 101.37      | 111.70   |
| 8   | CB    | 2035 | G    | N1-C6-O6    | 5.44  | 123.16      | 119.90   |
| 8   | AB    | 333  | G    | N3-C4-N9    | 5.44  | 129.26      | 126.00   |
| 8   | AB    | 1454 | C    | C1'-O4'-C4' | -5.44 | 105.55      | 109.90   |
| 8   | AB    | 2505 | G    | C3'-C2'-C1' | 5.44  | 105.85      | 101.50   |
| 8   | AB    | 836  | G    | C4'-C3'-C2' | -5.43 | 97.17       | 102.60   |
| 8   | CB    | 555  | G    | C1'-O4'-C4' | -5.43 | 105.55      | 109.90   |
| 33  | DA    | 1168 | U    | C3'-C2'-C1' | -5.43 | 97.15       | 101.50   |
| 8   | AB    | 1515 | A    | C4'-C3'-C2' | -5.43 | 97.17       | 102.60   |
| 8   | AB    | 1972 | G    | P-O3'-C3'   | -5.43 | 113.18      | 119.70   |
| 33  | BA    | 40   | C    | C5'-C4'-O4' | 5.43  | 115.62      | 109.10   |
| 33  | BA    | 1028 | C    | C4'-C3'-C2' | -5.43 | 97.17       | 102.60   |
| 33  | DA    | 863  | U    | O4'-C1'-N1  | 5.43  | 112.55      | 108.20   |
| 33  | DA    | 1185 | G    | C3'-C2'-C1' | -5.43 | 97.16       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 1198 | G    | O5'-C5'-C4' | 5.43  | 122.02      | 111.70   |
| 8   | AB    | 2236 | U    | C4'-C3'-C2' | -5.43 | 97.17       | 102.60   |
| 7   | CA    | 41   | G    | C8-N9-C4    | -5.43 | 104.23      | 106.40   |
| 33  | DA    | 1415 | G    | C1'-O4'-C4' | -5.43 | 105.56      | 109.90   |
| 8   | AB    | 1675 | C    | C6-N1-C2    | -5.43 | 118.13      | 120.30   |
| 33  | BA    | 1529 | G    | C5'-C4'-O4' | 5.43  | 115.62      | 109.10   |
| 8   | CB    | 766  | U    | C4'-C3'-C2' | -5.43 | 97.17       | 102.60   |
| 8   | CB    | 1784 | A    | C3'-C2'-C1' | 5.43  | 105.84      | 101.50   |
| 8   | CB    | 2034 | U    | O4'-C1'-N1  | -5.43 | 103.86      | 108.20   |
| 8   | CB    | 2592 | G    | O4'-C1'-N9  | 5.43  | 112.54      | 108.20   |
| 8   | AB    | 1054 | A    | C3'-C2'-C1' | -5.43 | 97.16       | 101.50   |
| 8   | AB    | 2681 | C    | O4'-C1'-N1  | 5.43  | 112.54      | 108.20   |
| 33  | BA    | 406  | G    | C8-N9-C4    | -5.43 | 104.23      | 106.40   |
| 8   | CB    | 748  | G    | P-O3'-C3'   | 5.43  | 126.21      | 119.70   |
| 8   | CB    | 1460 | U    | O4'-C1'-N1  | -5.43 | 103.86      | 108.20   |
| 8   | AB    | 356  | G    | C5-C6-O6    | -5.42 | 125.34      | 128.60   |
| 8   | AB    | 2022 | U    | P-O3'-C3'   | -5.42 | 113.19      | 119.70   |
| 8   | CB    | 221  | A    | N9-C1'-C2'  | -5.42 | 106.03      | 112.00   |
| 8   | CB    | 1696 | G    | C5-C6-O6    | -5.42 | 125.35      | 128.60   |
| 8   | CB    | 926  | G    | C4'-C3'-C2' | -5.42 | 97.18       | 102.60   |
| 8   | CB    | 1383 | A    | O4'-C1'-N9  | 5.42  | 112.54      | 108.20   |
| 8   | CB    | 859  | G    | O4'-C1'-N9  | 5.42  | 112.54      | 108.20   |
| 33  | DA    | 1394 | A    | C3'-C2'-C1' | -5.42 | 97.16       | 101.50   |
| 33  | BA    | 1201 | A    | P-O3'-C3'   | 5.42  | 126.20      | 119.70   |
| 8   | CB    | 1255 | U    | N1-C2-O2    | 5.42  | 126.59      | 122.80   |
| 8   | CB    | 2201 | G    | P-O3'-C3'   | -5.42 | 113.20      | 119.70   |
| 33  | DA    | 617  | G    | O4'-C1'-N9  | 5.42  | 112.53      | 108.20   |
| 8   | AB    | 2563 | U    | C1'-O4'-C4' | -5.42 | 105.57      | 109.90   |
| 33  | BA    | 617  | G    | C3'-C2'-C1' | -5.42 | 97.17       | 101.50   |
| 33  | DA    | 1047 | G    | C3'-C2'-C1' | -5.42 | 97.17       | 101.50   |
| 33  | DA    | 1475 | G    | C1'-O4'-C4' | -5.42 | 105.57      | 109.90   |
| 8   | AB    | 2083 | G    | C6-C5-N7    | -5.42 | 127.15      | 130.40   |
| 8   | CB    | 664  | G    | P-O3'-C3'   | -5.42 | 113.20      | 119.70   |
| 33  | DA    | 328  | C    | C3'-C2'-C1' | 5.42  | 105.83      | 101.50   |
| 8   | AB    | 361  | G    | C3'-C2'-C1' | 5.41  | 105.83      | 101.50   |
| 7   | CA    | 89   | U    | O4'-C1'-N1  | 5.41  | 112.53      | 108.20   |
| 8   | CB    | 337  | C    | O4'-C4'-C3' | -5.41 | 98.59       | 104.00   |
| 33  | DA    | 460  | A    | C4'-C3'-C2' | -5.41 | 97.19       | 102.60   |
| 8   | AB    | 400  | G    | C4'-C3'-C2' | -5.41 | 97.19       | 102.60   |
| 8   | AB    | 1807 | G    | C3'-C2'-C1' | -5.41 | 97.17       | 101.50   |
| 8   | CB    | 524  | G    | O4'-C1'-N9  | 5.41  | 112.53      | 108.20   |
| 33  | DA    | 834  | U    | C1'-O4'-C4' | -5.41 | 105.57      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 549  | G    | C3'-C2'-C1' | 5.41  | 105.83      | 101.50   |
| 8   | AB    | 1444 | G    | C4'-C3'-C2' | -5.41 | 97.19       | 102.60   |
| 33  | DA    | 104  | G    | C8-N9-C4    | -5.41 | 104.24      | 106.40   |
| 33  | DA    | 562  | U    | C4'-C3'-C2' | -5.41 | 97.19       | 102.60   |
| 8   | AB    | 790  | U    | O4'-C1'-N1  | -5.41 | 103.87      | 108.20   |
| 8   | CB    | 850  | U    | C3'-C2'-C1' | 5.41  | 105.83      | 101.50   |
| 33  | DA    | 1522 | U    | C5'-C4'-O4' | 5.41  | 115.59      | 109.10   |
| 8   | CB    | 2445 | G    | C8-N9-C4    | -5.41 | 104.24      | 106.40   |
| 33  | DA    | 398  | U    | P-O3'-C3'   | 5.40  | 126.19      | 119.70   |
| 33  | DA    | 1384 | C    | C3'-C2'-C1' | -5.40 | 97.18       | 101.50   |
| 8   | AB    | 1835 | G    | O4'-C1'-N9  | -5.40 | 103.88      | 108.20   |
| 33  | DA    | 701  | U    | O4'-C1'-N1  | 5.40  | 112.52      | 108.20   |
| 8   | AB    | 373  | U    | P-O3'-C3'   | -5.40 | 113.22      | 119.70   |
| 33  | BA    | 795  | C    | C6-N1-C2    | 5.40  | 122.46      | 120.30   |
| 8   | CB    | 513  | A    | C8-N9-C4    | -5.40 | 103.64      | 105.80   |
| 8   | CB    | 1444 | G    | C4'-C3'-C2' | -5.40 | 97.20       | 102.60   |
| 8   | CB    | 1621 | U    | P-O3'-C3'   | 5.40  | 126.18      | 119.70   |
| 8   | CB    | 2321 | U    | C1'-O4'-C4' | -5.40 | 105.58      | 109.90   |
| 8   | CB    | 2592 | G    | C5'-C4'-O4' | -5.40 | 102.62      | 109.10   |
| 8   | CB    | 207  | A    | O4'-C1'-N9  | 5.40  | 112.52      | 108.20   |
| 8   | CB    | 265  | A    | O4'-C1'-N9  | 5.40  | 112.52      | 108.20   |
| 33  | DA    | 646  | G    | C4'-C3'-C2' | -5.40 | 97.20       | 102.60   |
| 33  | DA    | 890  | G    | P-O3'-C3'   | 5.40  | 126.18      | 119.70   |
| 8   | AB    | 304  | U    | C4'-C3'-C2' | -5.40 | 97.20       | 102.60   |
| 33  | BA    | 1274 | A    | C4'-C3'-C2' | -5.40 | 97.20       | 102.60   |
| 8   | AB    | 124  | G    | C8-N9-C4    | -5.39 | 104.24      | 106.40   |
| 33  | BA    | 349  | A    | P-O3'-C3'   | 5.39  | 126.17      | 119.70   |
| 8   | CB    | 684  | G    | N1-C6-O6    | 5.39  | 123.14      | 119.90   |
| 8   | CB    | 968  | C    | O4'-C1'-N1  | 5.39  | 112.52      | 108.20   |
| 33  | DA    | 699  | C    | P-O3'-C3'   | 5.39  | 126.17      | 119.70   |
| 8   | AB    | 869  | G    | O5'-C5'-C4' | 5.39  | 121.95      | 111.70   |
| 8   | CB    | 2569 | G    | C4'-C3'-C2' | -5.39 | 97.21       | 102.60   |
| 8   | AB    | 445  | C    | C6-N1-C2    | 5.39  | 122.46      | 120.30   |
| 8   | AB    | 470  | A    | O4'-C1'-N9  | -5.39 | 103.89      | 108.20   |
| 8   | AB    | 2240 | U    | C4'-C3'-C2' | -5.39 | 97.21       | 102.60   |
| 8   | CB    | 1949 | G    | O4'-C1'-N9  | -5.39 | 103.89      | 108.20   |
| 8   | CB    | 2034 | U    | C6-N1-C2    | 5.39  | 124.23      | 121.00   |
| 7   | CA    | 113  | C    | O4'-C1'-N1  | 5.39  | 112.51      | 108.20   |
| 8   | CB    | 807  | U    | C4'-C3'-C2' | -5.39 | 97.21       | 102.60   |
| 8   | CB    | 1207 | C    | C4'-C3'-C2' | -5.39 | 97.21       | 102.60   |
| 8   | CB    | 1825 | U    | P-O3'-C3'   | -5.39 | 113.23      | 119.70   |
| 8   | CB    | 2029 | G    | C1'-O4'-C4' | -5.39 | 105.59      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 332  | A    | C1'-O4'-C4' | -5.39 | 105.59      | 109.90   |
| 8   | AB    | 1817 | G    | N9-C4-C5    | 5.39  | 107.56      | 105.40   |
| 8   | CB    | 369  | U    | O3'-P-O5'   | -5.39 | 93.77       | 104.00   |
| 33  | DA    | 1483 | A    | N9-C1'-C2'  | 5.39  | 121.00      | 114.00   |
| 8   | AB    | 35   | G    | N9-C1'-C2'  | -5.38 | 106.08      | 112.00   |
| 8   | CB    | 2747 | G    | C3'-C2'-C1' | -5.38 | 97.19       | 101.50   |
| 8   | AB    | 395  | U    | P-O3'-C3'   | -5.38 | 113.24      | 119.70   |
| 8   | CB    | 972  | A    | C5-C6-N6    | 5.38  | 128.01      | 123.70   |
| 8   | CB    | 1374 | G    | C1'-O4'-C4' | -5.38 | 105.59      | 109.90   |
| 8   | CB    | 1020 | A    | P-O3'-C3'   | 5.38  | 126.16      | 119.70   |
| 8   | CB    | 1267 | U    | C3'-C2'-C1' | 5.38  | 105.81      | 101.50   |
| 8   | CB    | 733  | G    | C6-C5-N7    | -5.38 | 127.17      | 130.40   |
| 7   | CA    | 51   | G    | O4'-C1'-N9  | 5.38  | 112.50      | 108.20   |
| 8   | CB    | 687  | C    | N3-C2-O2    | 5.38  | 125.66      | 121.90   |
| 8   | AB    | 1951 | U    | C4'-C3'-C2' | -5.38 | 97.22       | 102.60   |
| 8   | CB    | 1114 | C    | C3'-C2'-C1' | -5.38 | 97.20       | 101.50   |
| 33  | DA    | 605  | U    | P-O5'-C5'   | 5.38  | 129.50      | 120.90   |
| 8   | CB    | 1949 | G    | N9-C1'-C2'  | 5.38  | 120.99      | 114.00   |
| 8   | CB    | 2731 | G    | C6-C5-N7    | -5.37 | 127.18      | 130.40   |
| 8   | AB    | 2057 | G    | O4'-C1'-N9  | -5.37 | 103.90      | 108.20   |
| 33  | BA    | 516  | U    | P-O3'-C3'   | 5.37  | 126.15      | 119.70   |
| 8   | CB    | 553  | G    | O4'-C4'-C3' | -5.37 | 98.63       | 104.00   |
| 8   | CB    | 1082 | U    | C4'-C3'-C2' | -5.37 | 97.23       | 102.60   |
| 8   | CB    | 2814 | A    | N1-C6-N6    | 5.37  | 121.82      | 118.60   |
| 33  | BA    | 939  | G    | C3'-C2'-C1' | 5.37  | 105.80      | 101.50   |
| 8   | AB    | 107  | G    | C4'-C3'-C2' | -5.37 | 97.23       | 102.60   |
| 8   | AB    | 1241 | A    | C1'-O4'-C4' | -5.37 | 105.61      | 109.90   |
| 8   | AB    | 2281 | A    | P-O3'-C3'   | 5.37  | 126.14      | 119.70   |
| 8   | AB    | 2472 | G    | C4'-C3'-C2' | -5.37 | 97.23       | 102.60   |
| 8   | CB    | 1683 | U    | C5-C4-O4    | -5.37 | 122.68      | 125.90   |
| 33  | DA    | 777  | A    | P-O3'-C3'   | -5.37 | 113.26      | 119.70   |
| 8   | CB    | 326  | G    | C8-N9-C4    | -5.37 | 104.25      | 106.40   |
| 8   | CB    | 369  | U    | O4'-C1'-N1  | 5.37  | 112.49      | 108.20   |
| 8   | CB    | 1984 | G    | O4'-C4'-C3' | -5.37 | 98.63       | 104.00   |
| 33  | BA    | 734  | G    | C3'-C2'-C1' | 5.37  | 105.79      | 101.50   |
| 33  | BA    | 1130 | A    | C3'-C2'-C1' | -5.37 | 97.21       | 101.50   |
| 7   | CA    | 103  | U    | P-O3'-C3'   | -5.37 | 113.26      | 119.70   |
| 8   | CB    | 1695 | G    | O4'-C4'-C3' | -5.37 | 98.64       | 104.00   |
| 33  | DA    | 765  | G    | C3'-C2'-C1' | -5.37 | 97.21       | 101.50   |
| 8   | CB    | 1234 | U    | O4'-C1'-N1  | -5.36 | 103.91      | 108.20   |
| 33  | DA    | 1393 | U    | O4'-C1'-N1  | 5.36  | 112.49      | 108.20   |
| 8   | AB    | 8    | C    | C3'-C2'-C1' | -5.36 | 97.21       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2780 | G    | N3-C4-C5    | -5.36 | 125.92      | 128.60   |
| 8   | CB    | 700  | G    | C3'-C2'-C1' | -5.36 | 97.21       | 101.50   |
| 8   | CB    | 1393 | A    | C3'-C2'-C1' | 5.36  | 105.79      | 101.50   |
| 8   | CB    | 2211 | A    | O4'-C1'-N9  | 5.36  | 112.49      | 108.20   |
| 33  | DA    | 217  | C    | C3'-C2'-C1' | -5.36 | 97.21       | 101.50   |
| 8   | AB    | 2553 | G    | C4'-C3'-C2' | -5.36 | 97.24       | 102.60   |
| 33  | BA    | 778  | G    | P-O3'-C3'   | 5.36  | 126.13      | 119.70   |
| 8   | AB    | 466  | A    | O4'-C1'-N9  | -5.36 | 103.91      | 108.20   |
| 32  | AZ    | 32   | LEU  | CA-CB-CG    | 5.36  | 127.62      | 115.30   |
| 33  | BA    | 676  | A    | C1'-O4'-C4' | -5.36 | 105.61      | 109.90   |
| 8   | CB    | 908  | C    | C4'-C3'-C2' | -5.36 | 97.24       | 102.60   |
| 33  | DA    | 942  | G    | C4'-C3'-C2' | -5.36 | 97.24       | 102.60   |
| 33  | DA    | 1473 | G    | C6-C5-N7    | -5.36 | 127.19      | 130.40   |
| 33  | BA    | 791  | G    | O4'-C4'-C3' | -5.36 | 98.64       | 104.00   |
| 8   | CB    | 463  | G    | C2-N3-C4    | -5.36 | 109.22      | 111.90   |
| 8   | CB    | 827  | U    | N1-C1'-C2'  | -5.36 | 106.11      | 112.00   |
| 8   | CB    | 2105 | U    | O4'-C1'-N1  | 5.36  | 112.48      | 108.20   |
| 8   | CB    | 2563 | U    | C1'-O4'-C4' | -5.36 | 105.62      | 109.90   |
| 8   | CB    | 2214 | C    | P-O3'-C3'   | -5.35 | 113.28      | 119.70   |
| 33  | BA    | 1144 | G    | C3'-C2'-C1' | 5.35  | 105.78      | 101.50   |
| 8   | CB    | 630  | G    | O4'-C1'-N9  | -5.35 | 103.92      | 108.20   |
| 8   | CB    | 1379 | U    | C3'-C2'-C1' | 5.35  | 105.78      | 101.50   |
| 8   | AB    | 2688 | G    | C8-N9-C4    | -5.35 | 104.26      | 106.40   |
| 8   | CB    | 373  | U    | P-O3'-C3'   | -5.35 | 113.28      | 119.70   |
| 8   | CB    | 1271 | G    | C8-N9-C4    | -5.35 | 104.26      | 106.40   |
| 33  | DA    | 895  | G    | C4-C5-C6    | 5.35  | 122.01      | 118.80   |
| 33  | DA    | 895  | G    | N3-C4-N9    | 5.35  | 129.21      | 126.00   |
| 8   | CB    | 2196 | C    | C3'-C2'-C1' | 5.35  | 105.78      | 101.50   |
| 8   | AB    | 2360 | G    | C8-N9-C4    | -5.35 | 104.26      | 106.40   |
| 8   | AB    | 2892 | G    | C3'-C2'-C1' | -5.35 | 97.22       | 101.50   |
| 8   | CB    | 1012 | U    | C3'-C2'-C1' | -5.35 | 97.22       | 101.50   |
| 8   | CB    | 2032 | G    | C5'-C4'-O4' | -5.35 | 102.68      | 109.10   |
| 33  | DA    | 321  | A    | C3'-C2'-C1' | 5.34  | 105.78      | 101.50   |
| 8   | AB    | 814  | C    | P-O3'-C3'   | -5.34 | 113.29      | 119.70   |
| 33  | BA    | 6    | G    | C3'-C2'-C1' | 5.34  | 105.78      | 101.50   |
| 8   | CB    | 215  | G    | P-O3'-C3'   | 5.34  | 126.11      | 119.70   |
| 8   | CB    | 2095 | A    | C1'-O4'-C4' | -5.34 | 105.63      | 109.90   |
| 8   | CB    | 2199 | A    | O4'-C1'-N9  | -5.34 | 103.92      | 108.20   |
| 33  | BA    | 697  | U    | C4'-C3'-C2' | -5.34 | 97.26       | 102.60   |
| 33  | DA    | 355  | C    | C6-N1-C2    | -5.34 | 118.16      | 120.30   |
| 33  | DA    | 1329 | A    | O4'-C1'-N9  | 5.34  | 112.47      | 108.20   |
| 8   | CB    | 1631 | G    | P-O3'-C3'   | -5.34 | 113.29      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 1784 | A    | O4'-C1'-N9  | -5.34 | 103.93      | 108.20   |
| 8   | CB    | 2069 | G    | C3'-C2'-C1' | -5.34 | 97.23       | 101.50   |
| 8   | CB    | 2135 | A    | C3'-C2'-C1' | -5.34 | 97.23       | 101.50   |
| 8   | CB    | 591  | U    | P-O3'-C3'   | -5.34 | 113.30      | 119.70   |
| 8   | AB    | 1936 | A    | O5'-C5'-C4' | -5.34 | 101.56      | 111.70   |
| 33  | BA    | 1358 | U    | C3'-C2'-C1' | 5.34  | 105.77      | 101.50   |
| 33  | DA    | 1385 | G    | C1'-O4'-C4' | -5.34 | 105.63      | 109.90   |
| 7   | AA    | 105  | G    | O4'-C1'-N9  | 5.33  | 112.47      | 108.20   |
| 8   | CB    | 1007 | C    | C4'-C3'-C2' | -5.33 | 97.27       | 102.60   |
| 33  | DA    | 186  | C    | C4'-C3'-C2' | -5.33 | 97.27       | 102.60   |
| 7   | AA    | 47   | C    | O4'-C4'-C3' | -5.33 | 98.67       | 104.00   |
| 8   | CB    | 1620 | G    | C2-N3-C4    | -5.33 | 109.23      | 111.90   |
| 8   | CB    | 1976 | U    | N1-C2-O2    | 5.33  | 126.53      | 122.80   |
| 8   | CB    | 2488 | G    | O4'-C1'-N9  | 5.33  | 112.47      | 108.20   |
| 8   | CB    | 2700 | A    | P-O3'-C3'   | 5.33  | 126.10      | 119.70   |
| 8   | AB    | 700  | G    | P-O3'-C3'   | -5.33 | 113.30      | 119.70   |
| 8   | CB    | 715  | A    | P-O3'-C3'   | -5.33 | 113.30      | 119.70   |
| 8   | CB    | 1454 | C    | O4'-C1'-N1  | 5.33  | 112.47      | 108.20   |
| 8   | CB    | 1936 | A    | C3'-C2'-C1' | 5.33  | 105.77      | 101.50   |
| 33  | DA    | 506  | G    | C4'-C3'-C2' | -5.33 | 97.27       | 102.60   |
| 33  | DA    | 517  | G    | N3-C4-C5    | 5.33  | 131.26      | 128.60   |
| 33  | DA    | 1509 | C    | N1-C2-O2    | 5.33  | 122.10      | 118.90   |
| 33  | BA    | 789  | U    | O4'-C1'-N1  | 5.33  | 112.46      | 108.20   |
| 8   | AB    | 1125 | G    | C4'-C3'-C2' | -5.33 | 97.27       | 102.60   |
| 33  | BA    | 1156 | G    | C4'-C3'-C2' | -5.33 | 97.27       | 102.60   |
| 8   | CB    | 7    | G    | C4'-C3'-C2' | -5.33 | 97.27       | 102.60   |
| 8   | CB    | 500  | G    | C1'-O4'-C4' | -5.33 | 105.64      | 109.90   |
| 33  | DA    | 1496 | C    | O4'-C1'-N1  | -5.33 | 103.94      | 108.20   |
| 8   | CB    | 2511 | U    | C4'-C3'-C2' | -5.33 | 97.27       | 102.60   |
| 8   | AB    | 332  | A    | C3'-C2'-C1' | -5.33 | 97.24       | 101.50   |
| 33  | BA    | 1129 | C    | C3'-C2'-C1' | 5.33  | 105.76      | 101.50   |
| 8   | CB    | 1898 | U    | C4'-C3'-C2' | -5.33 | 97.28       | 102.60   |
| 8   | CB    | 2351 | G    | C8-N9-C4    | -5.33 | 104.27      | 106.40   |
| 7   | AA    | 56   | G    | N9-C1'-C2'  | 5.32  | 120.92      | 114.00   |
| 8   | AB    | 479  | A    | N9-C1'-C2'  | 5.32  | 120.92      | 114.00   |
| 8   | AB    | 1022 | G    | C3'-C2'-C1' | -5.32 | 97.24       | 101.50   |
| 8   | AB    | 1819 | A    | C5'-C4'-O4' | -5.32 | 102.71      | 109.10   |
| 33  | BA    | 677  | U    | C3'-C2'-C1' | 5.32  | 105.76      | 101.50   |
| 33  | BA    | 1309 | G    | C4'-C3'-C2' | -5.32 | 97.28       | 102.60   |
| 7   | CA    | 106  | G    | C8-N9-C4    | -5.32 | 104.27      | 106.40   |
| 8   | CB    | 1889 | A    | C3'-C2'-C1' | -5.32 | 97.24       | 101.50   |
| 8   | CB    | 2146 | C    | C3'-C2'-C1' | 5.32  | 105.76      | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2508 | G    | C4'-C3'-C2' | -5.32 | 97.28       | 102.60   |
| 33  | DA    | 842  | U    | C3'-C2'-C1' | 5.32  | 105.76      | 101.50   |
| 8   | AB    | 2077 | A    | O4'-C1'-N9  | -5.32 | 103.94      | 108.20   |
| 33  | DA    | 143  | A    | O4'-C1'-N9  | -5.32 | 103.94      | 108.20   |
| 33  | BA    | 373  | A    | O4'-C1'-N9  | 5.32  | 112.46      | 108.20   |
| 8   | CB    | 687  | C    | P-O3'-C3'   | -5.32 | 113.32      | 119.70   |
| 8   | CB    | 1378 | A    | C3'-C2'-C1' | -5.32 | 97.24       | 101.50   |
| 33  | DA    | 565  | U    | O4'-C1'-N1  | 5.32  | 112.46      | 108.20   |
| 8   | AB    | 268  | C    | C6-N1-C2    | -5.32 | 118.17      | 120.30   |
| 8   | AB    | 1515 | A    | O4'-C1'-N9  | 5.32  | 112.45      | 108.20   |
| 8   | CB    | 600  | G    | N9-C1'-C2'  | -5.32 | 106.15      | 112.00   |
| 8   | CB    | 864  | G    | O4'-C1'-N9  | 5.32  | 112.45      | 108.20   |
| 8   | AB    | 797  | G    | C3'-C2'-C1' | -5.32 | 97.25       | 101.50   |
| 8   | AB    | 2076 | U    | N3-C2-O2    | -5.32 | 118.48      | 122.20   |
| 8   | AB    | 2360 | G    | N3-C2-N2    | -5.32 | 116.18      | 119.90   |
| 8   | CB    | 561  | G    | C4-C5-N7    | 5.32  | 112.93      | 110.80   |
| 8   | CB    | 1085 | A    | C3'-C2'-C1' | 5.32  | 105.75      | 101.50   |
| 8   | CB    | 753  | A    | O4'-C1'-N9  | -5.32 | 103.95      | 108.20   |
| 33  | DA    | 893  | C    | C2-N1-C1'   | 5.32  | 124.65      | 118.80   |
| 33  | DA    | 750  | C    | O4'-C1'-N1  | 5.31  | 112.45      | 108.20   |
| 33  | DA    | 1087 | G    | C4'-C3'-C2' | -5.31 | 97.29       | 102.60   |
| 8   | AB    | 2304 | G    | O4'-C1'-N9  | 5.31  | 112.45      | 108.20   |
| 33  | BA    | 1413 | A    | P-O3'-C3'   | -5.31 | 113.33      | 119.70   |
| 8   | CB    | 96   | C    | C3'-C2'-C1' | -5.31 | 97.25       | 101.50   |
| 33  | DA    | 775  | G    | N3-C4-C5    | 5.31  | 131.26      | 128.60   |
| 8   | AB    | 413  | C    | C6-N1-C2    | 5.31  | 122.42      | 120.30   |
| 8   | CB    | 536  | G    | O4'-C1'-N9  | 5.31  | 112.45      | 108.20   |
| 8   | AB    | 374  | A    | C3'-C2'-C1' | 5.31  | 105.75      | 101.50   |
| 8   | AB    | 1019 | U    | O4'-C1'-N1  | 5.31  | 112.45      | 108.20   |
| 8   | AB    | 1793 | C    | C3'-C2'-C1' | -5.31 | 97.25       | 101.50   |
| 8   | CB    | 2656 | U    | P-O3'-C3'   | 5.31  | 126.07      | 119.70   |
| 8   | CB    | 2848 | G    | C3'-C2'-C1' | -5.31 | 97.25       | 101.50   |
| 8   | AB    | 766  | U    | C4'-C3'-C2' | -5.30 | 97.30       | 102.60   |
| 8   | AB    | 1554 | U    | C1'-O4'-C4' | -5.30 | 105.66      | 109.90   |
| 33  | BA    | 930  | C    | O4'-C1'-N1  | 5.30  | 112.44      | 108.20   |
| 7   | CA    | 52   | A    | C1'-O4'-C4' | -5.30 | 105.66      | 109.90   |
| 7   | CA    | 52   | A    | O4'-C4'-C3' | -5.30 | 98.70       | 104.00   |
| 8   | CB    | 627  | A    | C3'-C2'-C1' | -5.30 | 97.26       | 101.50   |
| 8   | CB    | 1458 | U    | P-O3'-C3'   | 5.30  | 126.07      | 119.70   |
| 33  | DA    | 812  | G    | C6-C5-N7    | -5.30 | 127.22      | 130.40   |
| 8   | AB    | 739  | A    | P-O3'-C3'   | -5.30 | 113.34      | 119.70   |
| 8   | CB    | 2831 | G    | C8-N9-C4    | -5.30 | 104.28      | 106.40   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 92   | U    | C3'-C2'-C1' | -5.30 | 97.26       | 101.50   |
| 8   | AB    | 587  | C    | N1-C2-O2    | 5.30  | 122.08      | 118.90   |
| 8   | AB    | 926  | G    | C4'-C3'-C2' | -5.30 | 97.30       | 102.60   |
| 33  | BA    | 455  | G    | C4'-C3'-C2' | -5.30 | 97.30       | 102.60   |
| 33  | BA    | 675  | A    | C1'-O4'-C4' | -5.30 | 105.66      | 109.90   |
| 8   | CB    | 562  | U    | N3-C2-O2    | -5.30 | 118.49      | 122.20   |
| 8   | CB    | 827  | U    | C4'-C3'-C2' | 5.30  | 107.90      | 102.60   |
| 8   | CB    | 2799 | A    | C1'-O4'-C4' | -5.30 | 105.66      | 109.90   |
| 8   | AB    | 2252 | G    | C4'-C3'-C2' | -5.30 | 97.30       | 102.60   |
| 8   | CB    | 204  | A    | C8-N9-C4    | 5.30  | 107.92      | 105.80   |
| 8   | CB    | 1958 | C    | C4'-C3'-C2' | -5.30 | 97.30       | 102.60   |
| 33  | DA    | 799  | G    | N1-C6-O6    | 5.30  | 123.08      | 119.90   |
| 8   | CB    | 189  | G    | C3'-C2'-C1' | -5.30 | 97.26       | 101.50   |
| 8   | CB    | 330  | A    | N9-C1'-C2'  | 5.30  | 120.89      | 114.00   |
| 8   | CB    | 1698 | A    | C5'-C4'-O4' | -5.30 | 102.74      | 109.10   |
| 8   | CB    | 1989 | G    | N9-C1'-C2'  | 5.30  | 120.89      | 114.00   |
| 7   | AA    | 15   | A    | C4'-C3'-C2' | -5.30 | 97.30       | 102.60   |
| 8   | AB    | 225  | C    | C4'-C3'-C2' | -5.30 | 97.30       | 102.60   |
| 8   | AB    | 1246 | A    | C3'-C2'-C1' | -5.30 | 97.26       | 101.50   |
| 8   | CB    | 691  | C    | C3'-C2'-C1' | 5.30  | 105.74      | 101.50   |
| 8   | CB    | 1480 | C    | O4'-C1'-N1  | 5.30  | 112.44      | 108.20   |
| 8   | CB    | 1623 | G    | O4'-C1'-N9  | 5.30  | 112.44      | 108.20   |
| 8   | CB    | 2687 | U    | N1-C1'-C2'  | 5.30  | 120.88      | 114.00   |
| 8   | AB    | 2676 | C    | O4'-C1'-N1  | 5.29  | 112.44      | 108.20   |
| 33  | BA    | 798  | U    | C1'-O4'-C4' | -5.29 | 105.67      | 109.90   |
| 8   | CB    | 434  | U    | C3'-C2'-C1' | -5.29 | 97.27       | 101.50   |
| 8   | CB    | 1699 | G    | N9-C1'-C2'  | 5.29  | 120.88      | 114.00   |
| 8   | CB    | 2610 | C    | C6-N1-C2    | 5.29  | 122.42      | 120.30   |
| 33  | DA    | 642  | A    | P-O3'-C3'   | 5.29  | 126.05      | 119.70   |
| 33  | DA    | 739  | C    | C3'-C2'-C1' | 5.29  | 105.73      | 101.50   |
| 8   | AB    | 2828 | G    | O4'-C1'-N9  | 5.29  | 112.43      | 108.20   |
| 8   | CB    | 400  | G    | P-O5'-C5'   | -5.29 | 112.43      | 120.90   |
| 8   | CB    | 539  | G    | O4'-C1'-N9  | 5.29  | 112.43      | 108.20   |
| 8   | CB    | 1664 | A    | O4'-C1'-N9  | 5.29  | 112.43      | 108.20   |
| 8   | CB    | 2019 | A    | P-O3'-C3'   | -5.29 | 113.35      | 119.70   |
| 33  | DA    | 86   | G    | C4'-C3'-C2' | -5.29 | 97.31       | 102.60   |
| 33  | BA    | 413  | G    | C1'-O4'-C4' | -5.29 | 105.67      | 109.90   |
| 33  | BA    | 717  | U    | N3-C2-O2    | -5.29 | 118.50      | 122.20   |
| 33  | BA    | 923  | A    | C3'-C2'-C1' | 5.29  | 105.73      | 101.50   |
| 33  | BA    | 1282 | C    | C4'-C3'-C2' | -5.29 | 97.31       | 102.60   |
| 33  | BA    | 1526 | G    | O4'-C1'-C2' | -5.29 | 100.51      | 105.80   |
| 8   | CB    | 99   | U    | C3'-C2'-C1' | 5.29  | 105.73      | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 533  | G    | N3-C4-N9    | 5.29  | 129.17      | 126.00   |
| 33  | DA    | 462  | G    | P-O3'-C3'   | 5.29  | 126.05      | 119.70   |
| 33  | DA    | 755  | G    | O4'-C1'-N9  | -5.29 | 103.97      | 108.20   |
| 33  | BA    | 449  | G    | C4'-C3'-C2' | -5.29 | 97.31       | 102.60   |
| 8   | CB    | 2109 | U    | C4'-C3'-C2' | -5.29 | 97.31       | 102.60   |
| 8   | AB    | 1815 | A    | C1'-O4'-C4' | -5.29 | 105.67      | 109.90   |
| 8   | AB    | 2640 | G    | N9-C1'-C2'  | -5.29 | 106.19      | 112.00   |
| 33  | BA    | 865  | A    | N1-C6-N6    | 5.29  | 121.77      | 118.60   |
| 8   | CB    | 764  | A    | O4'-C1'-N9  | -5.29 | 103.97      | 108.20   |
| 8   | CB    | 1896 | G    | C3'-C2'-C1' | -5.29 | 97.27       | 101.50   |
| 33  | DA    | 378  | G    | O4'-C1'-N9  | -5.29 | 103.97      | 108.20   |
| 8   | AB    | 1197 | G    | C3'-C2'-C1' | 5.28  | 105.73      | 101.50   |
| 8   | AB    | 2685 | G    | N3-C4-C5    | -5.28 | 125.96      | 128.60   |
| 8   | CB    | 225  | C    | C4'-C3'-C2' | -5.28 | 97.32       | 102.60   |
| 8   | CB    | 568  | U    | C3'-C2'-C1' | 5.28  | 105.73      | 101.50   |
| 8   | CB    | 2240 | U    | C4'-C3'-C2' | -5.28 | 97.32       | 102.60   |
| 8   | AB    | 129  | C    | O4'-C1'-N1  | -5.28 | 103.97      | 108.20   |
| 8   | AB    | 543  | G    | C4'-C3'-C2' | -5.28 | 97.32       | 102.60   |
| 33  | BA    | 569  | C    | P-O3'-C3'   | -5.28 | 113.36      | 119.70   |
| 33  | BA    | 1425 | U    | C4'-C3'-C2' | -5.28 | 97.32       | 102.60   |
| 8   | CB    | 291  | G    | P-O3'-C3'   | -5.28 | 113.36      | 119.70   |
| 8   | CB    | 577  | G    | O4'-C1'-N9  | -5.28 | 103.97      | 108.20   |
| 8   | CB    | 581  | C    | C6-N1-C2    | -5.28 | 118.19      | 120.30   |
| 8   | AB    | 370  | G    | P-O3'-C3'   | 5.28  | 126.03      | 119.70   |
| 33  | BA    | 1393 | U    | N1-C1'-C2'  | -5.28 | 106.19      | 112.00   |
| 8   | CB    | 2048 | G    | O4'-C1'-N9  | -5.28 | 103.98      | 108.20   |
| 33  | BA    | 1384 | C    | P-O3'-C3'   | -5.28 | 113.37      | 119.70   |
| 8   | CB    | 138  | U    | C3'-C2'-C1' | -5.28 | 97.28       | 101.50   |
| 8   | AB    | 2135 | A    | C3'-C2'-C1' | 5.28  | 105.72      | 101.50   |
| 8   | AB    | 2225 | A    | O4'-C1'-N9  | -5.28 | 103.98      | 108.20   |
| 8   | AB    | 2765 | A    | N9-C1'-C2'  | 5.28  | 120.86      | 114.00   |
| 33  | BA    | 246  | A    | P-O3'-C3'   | 5.28  | 126.03      | 119.70   |
| 33  | BA    | 731  | G    | P-O3'-C3'   | 5.28  | 126.03      | 119.70   |
| 8   | CB    | 239  | C    | C3'-C2'-C1' | 5.28  | 105.72      | 101.50   |
| 8   | CB    | 1976 | U    | C6-N1-C1'   | -5.28 | 113.81      | 121.20   |
| 8   | AB    | 223  | A    | C3'-C2'-C1' | 5.27  | 105.72      | 101.50   |
| 8   | CB    | 1691 | C    | N1-C1'-C2'  | 5.27  | 120.86      | 114.00   |
| 7   | AA    | 117  | G    | C4'-C3'-C2' | -5.27 | 97.33       | 102.60   |
| 8   | AB    | 1701 | A    | C4'-C3'-C2' | -5.27 | 97.33       | 102.60   |
| 33  | BA    | 1216 | A    | C3'-C2'-C1' | -5.27 | 97.28       | 101.50   |
| 8   | CB    | 2689 | U    | C3'-C2'-C1' | -5.27 | 97.28       | 101.50   |
| 8   | CB    | 2776 | A    | P-O3'-C3'   | 5.27  | 126.03      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 378  | C    | O4'-C1'-N1  | -5.27 | 103.98      | 108.20   |
| 33  | DA    | 1521 | C    | N1-C2-O2    | 5.27  | 122.06      | 118.90   |
| 8   | AB    | 575  | A    | P-O3'-C3'   | 5.27  | 126.02      | 119.70   |
| 8   | AB    | 1898 | U    | C4'-C3'-C2' | -5.27 | 97.33       | 102.60   |
| 8   | CB    | 733  | G    | N1-C6-O6    | 5.27  | 123.06      | 119.90   |
| 33  | DA    | 460  | A    | C3'-C2'-C1' | -5.27 | 97.29       | 101.50   |
| 8   | CB    | 504  | A    | C3'-C2'-C1' | -5.27 | 97.29       | 101.50   |
| 8   | CB    | 2351 | G    | P-O3'-C3'   | 5.27  | 126.02      | 119.70   |
| 7   | AA    | 114  | C    | O4'-C1'-N1  | 5.26  | 112.41      | 108.20   |
| 33  | BA    | 737  | C    | C3'-C2'-C1' | -5.26 | 97.29       | 101.50   |
| 33  | DA    | 350  | G    | O4'-C1'-N9  | 5.26  | 112.41      | 108.20   |
| 33  | DA    | 1507 | A    | C3'-C2'-C1' | -5.26 | 97.29       | 101.50   |
| 8   | AB    | 1385 | A    | C3'-C2'-C1' | -5.26 | 97.29       | 101.50   |
| 8   | CB    | 2281 | A    | C3'-C2'-C1' | -5.26 | 97.29       | 101.50   |
| 8   | AB    | 1695 | G    | C2-N3-C4    | -5.26 | 109.27      | 111.90   |
| 8   | CB    | 128  | C    | C4'-C3'-C2' | -5.26 | 97.34       | 102.60   |
| 8   | CB    | 874  | G    | N1-C6-O6    | 5.26  | 123.06      | 119.90   |
| 8   | CB    | 1613 | G    | C4-C5-N7    | -5.26 | 108.69      | 110.80   |
| 22  | CP    | 71   | ARG  | N-CA-C      | 5.26  | 125.20      | 111.00   |
| 33  | DA    | 401  | C    | O4'-C1'-C2' | -5.26 | 100.54      | 105.80   |
| 8   | AB    | 811  | U    | P-O5'-C5'   | -5.26 | 112.48      | 120.90   |
| 8   | AB    | 1203 | U    | C1'-O4'-C4' | -5.26 | 105.69      | 109.90   |
| 33  | BA    | 39   | G    | O4'-C1'-N9  | 5.26  | 112.41      | 108.20   |
| 33  | BA    | 854  | U    | C3'-C2'-C1' | -5.26 | 97.29       | 101.50   |
| 8   | CB    | 222  | A    | O4'-C1'-C2' | -5.26 | 100.54      | 105.80   |
| 8   | CB    | 466  | A    | O4'-C1'-N9  | -5.26 | 103.99      | 108.20   |
| 33  | DA    | 994  | A    | C4'-C3'-C2' | -5.26 | 97.34       | 102.60   |
| 33  | BA    | 855  | U    | P-O3'-C3'   | -5.26 | 113.39      | 119.70   |
| 8   | CB    | 1283 | G    | C4'-C3'-C2' | -5.26 | 97.34       | 102.60   |
| 8   | CB    | 1391 | U    | C3'-C2'-C1' | -5.26 | 97.29       | 101.50   |
| 8   | CB    | 1398 | C    | C1'-O4'-C4' | -5.26 | 105.69      | 109.90   |
| 8   | CB    | 2198 | A    | C1'-O4'-C4' | -5.26 | 105.69      | 109.90   |
| 7   | AA    | 56   | G    | N7-C8-N9    | 5.26  | 115.73      | 113.10   |
| 8   | AB    | 144  | A    | C8-N9-C4    | -5.26 | 103.70      | 105.80   |
| 8   | AB    | 772  | C    | C6-N1-C2    | -5.26 | 118.20      | 120.30   |
| 8   | AB    | 1989 | G    | C8-N9-C4    | -5.26 | 104.30      | 106.40   |
| 7   | CA    | 87   | U    | C6-N1-C2    | -5.26 | 117.85      | 121.00   |
| 8   | CB    | 647  | G    | P-O3'-C3'   | -5.26 | 113.39      | 119.70   |
| 8   | AB    | 353  | C    | O4'-C1'-C2' | -5.25 | 100.55      | 105.80   |
| 8   | CB    | 1815 | A    | C1'-O4'-C4' | -5.25 | 105.70      | 109.90   |
| 8   | AB    | 2642 | G    | C4'-C3'-C2' | -5.25 | 97.35       | 102.60   |
| 8   | CB    | 828  | U    | C3'-C2'-C1' | 5.25  | 105.70      | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 1613 | G    | O4'-C4'-C3' | -5.25 | 98.75       | 104.00   |
| 8   | AB    | 2017 | U    | O4'-C4'-C3' | -5.25 | 98.75       | 104.00   |
| 33  | DA    | 1369 | C    | C4'-C3'-C2' | -5.25 | 97.35       | 102.60   |
| 8   | AB    | 1621 | U    | P-O3'-C3'   | 5.25  | 126.00      | 119.70   |
| 33  | BA    | 836  | G    | C5'-C4'-O4' | 5.25  | 115.40      | 109.10   |
| 33  | DA    | 893  | C    | N1-C2-O2    | 5.25  | 122.05      | 118.90   |
| 8   | AB    | 2731 | G    | N1-C6-O6    | 5.25  | 123.05      | 119.90   |
| 8   | AB    | 132  | G    | P-O3'-C3'   | 5.25  | 126.00      | 119.70   |
| 8   | AB    | 242  | G    | P-O5'-C5'   | 5.25  | 129.29      | 120.90   |
| 8   | AB    | 2726 | A    | O5'-C5'-C4' | -5.25 | 101.73      | 111.70   |
| 8   | CB    | 1381 | G    | O4'-C1'-N9  | -5.25 | 104.00      | 108.20   |
| 8   | CB    | 1955 | U    | O4'-C1'-N1  | 5.25  | 112.40      | 108.20   |
| 33  | DA    | 24   | U    | C4'-C3'-C2' | -5.25 | 97.35       | 102.60   |
| 8   | AB    | 1995 | U    | C4'-C3'-C2' | -5.25 | 97.36       | 102.60   |
| 33  | BA    | 640  | A    | P-O3'-C3'   | 5.25  | 125.99      | 119.70   |
| 8   | CB    | 169  | G    | C4'-C3'-C2' | -5.25 | 97.36       | 102.60   |
| 33  | DA    | 39   | G    | O4'-C1'-N9  | 5.25  | 112.40      | 108.20   |
| 33  | DA    | 558  | G    | N9-C1'-C2'  | 5.25  | 120.82      | 114.00   |
| 33  | DA    | 1421 | G    | N3-C4-N9    | 5.25  | 129.15      | 126.00   |
| 33  | DA    | 1422 | G    | C3'-C2'-C1' | -5.25 | 97.30       | 101.50   |
| 8   | AB    | 1163 | G    | C3'-C2'-C1' | -5.24 | 97.31       | 101.50   |
| 8   | AB    | 1823 | G    | C3'-C2'-C1' | -5.24 | 97.31       | 101.50   |
| 8   | CB    | 410  | G    | C6-C5-N7    | -5.24 | 127.25      | 130.40   |
| 8   | CB    | 527  | C    | C2-N1-C1'   | 5.24  | 124.57      | 118.80   |
| 8   | CB    | 612  | G    | O4'-C1'-N9  | -5.24 | 104.00      | 108.20   |
| 8   | CB    | 1938 | A    | N1-C6-N6    | -5.24 | 115.45      | 118.60   |
| 8   | CB    | 2294 | G    | P-O3'-C3'   | -5.24 | 113.41      | 119.70   |
| 7   | AA    | 37   | C    | C3'-C2'-C1' | 5.24  | 105.69      | 101.50   |
| 33  | BA    | 812  | G    | C1'-O4'-C4' | -5.24 | 105.71      | 109.90   |
| 8   | CB    | 1749 | A    | C4'-C3'-C2' | -5.24 | 97.36       | 102.60   |
| 8   | AB    | 583  | G    | N3-C2-N2    | -5.24 | 116.23      | 119.90   |
| 8   | AB    | 1311 | G    | C5-C6-N1    | -5.24 | 108.88      | 111.50   |
| 33  | BA    | 281  | G    | N9-C1'-C2'  | -5.24 | 106.23      | 112.00   |
| 33  | DA    | 244  | U    | O4'-C1'-N1  | -5.24 | 104.01      | 108.20   |
| 8   | AB    | 1987 | A    | C1'-O4'-C4' | -5.24 | 105.71      | 109.90   |
| 8   | AB    | 2365 | G    | C1'-O4'-C4' | -5.24 | 105.71      | 109.90   |
| 8   | CB    | 686  | U    | C4'-C3'-C2' | -5.24 | 97.36       | 102.60   |
| 8   | CB    | 2712 | C    | O5'-C5'-C4' | -5.24 | 101.75      | 111.70   |
| 33  | DA    | 399  | G    | P-O3'-C3'   | 5.24  | 125.99      | 119.70   |
| 33  | DA    | 723  | U    | P-O3'-C3'   | -5.24 | 113.42      | 119.70   |
| 33  | DA    | 1133 | G    | C4'-C3'-C2' | -5.24 | 97.36       | 102.60   |
| 33  | DA    | 591  | U    | C1'-O4'-C4' | -5.24 | 105.71      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 1987 | A    | C4'-C3'-C2' | -5.24 | 97.36       | 102.60   |
| 8   | AB    | 2569 | G    | C3'-C2'-C1' | -5.24 | 97.31       | 101.50   |
| 8   | CB    | 2133 | G    | C3'-C2'-C1' | 5.24  | 105.69      | 101.50   |
| 8   | AB    | 221  | A    | N9-C1'-C2'  | -5.23 | 106.24      | 112.00   |
| 8   | AB    | 1093 | G    | C4'-C3'-C2' | -5.23 | 97.37       | 102.60   |
| 8   | CB    | 794  | A    | C3'-C2'-C1' | 5.23  | 105.69      | 101.50   |
| 8   | CB    | 2053 | G    | N1-C6-O6    | 5.23  | 123.04      | 119.90   |
| 33  | DA    | 557  | G    | C3'-C2'-C1' | 5.23  | 105.69      | 101.50   |
| 8   | AB    | 215  | G    | P-O3'-C3'   | 5.23  | 125.98      | 119.70   |
| 8   | AB    | 1322 | A    | C3'-C2'-C1' | -5.23 | 97.32       | 101.50   |
| 33  | BA    | 388  | G    | P-O3'-C3'   | -5.23 | 113.42      | 119.70   |
| 8   | CB    | 533  | G    | P-O5'-C5'   | -5.23 | 112.53      | 120.90   |
| 8   | CB    | 627  | A    | P-O3'-C3'   | 5.23  | 125.98      | 119.70   |
| 8   | CB    | 1107 | G    | C1'-O4'-C4' | -5.23 | 105.72      | 109.90   |
| 8   | CB    | 1273 | U    | C2-N1-C1'   | 5.23  | 123.98      | 117.70   |
| 8   | CB    | 2560 | A    | O4'-C4'-C3' | -5.23 | 98.77       | 104.00   |
| 8   | AB    | 1388 | G    | O4'-C1'-N9  | -5.23 | 104.02      | 108.20   |
| 33  | BA    | 1064 | G    | O4'-C1'-N9  | 5.23  | 112.38      | 108.20   |
| 8   | CB    | 324  | A    | C4'-C3'-C2' | -5.23 | 97.37       | 102.60   |
| 8   | CB    | 2351 | G    | C4'-C3'-C2' | -5.23 | 97.37       | 102.60   |
| 8   | CB    | 2446 | G    | C2-N3-C4    | -5.23 | 109.29      | 111.90   |
| 33  | DA    | 1151 | A    | C1'-O4'-C4' | -5.23 | 105.72      | 109.90   |
| 8   | CB    | 2067 | G    | C1'-O4'-C4' | -5.23 | 105.72      | 109.90   |
| 8   | AB    | 261  | G    | C6-C5-N7    | -5.22 | 127.27      | 130.40   |
| 8   | AB    | 1633 | G    | N3-C4-N9    | 5.22  | 129.13      | 126.00   |
| 33  | DA    | 617  | G    | C8-N9-C4    | -5.22 | 104.31      | 106.40   |
| 8   | AB    | 1552 | A    | C4'-C3'-C2' | -5.22 | 97.38       | 102.60   |
| 33  | BA    | 1488 | G    | O4'-C1'-N9  | 5.22  | 112.38      | 108.20   |
| 8   | CB    | 1777 | U    | C3'-C2'-C1' | 5.22  | 105.68      | 101.50   |
| 8   | AB    | 811  | U    | C3'-C2'-C1' | -5.22 | 97.32       | 101.50   |
| 8   | AB    | 2458 | G    | C3'-C2'-C1' | -5.22 | 97.32       | 101.50   |
| 8   | CB    | 463  | G    | O4'-C1'-N9  | -5.22 | 104.02      | 108.20   |
| 8   | CB    | 2236 | U    | C1'-O4'-C4' | -5.22 | 105.72      | 109.90   |
| 8   | CB    | 2425 | A    | C2-N3-C4    | -5.22 | 107.99      | 110.60   |
| 8   | AB    | 2030 | A    | O4'-C1'-N9  | 5.22  | 112.38      | 108.20   |
| 8   | CB    | 974  | G    | N9-C4-C5    | -5.22 | 103.31      | 105.40   |
| 8   | CB    | 1197 | G    | C3'-C2'-C1' | 5.22  | 105.68      | 101.50   |
| 8   | CB    | 2711 | A    | P-O3'-C3'   | 5.22  | 125.96      | 119.70   |
| 8   | CB    | 2780 | G    | N3-C4-N9    | 5.22  | 129.13      | 126.00   |
| 33  | DA    | 1089 | G    | C3'-C2'-C1' | -5.22 | 97.33       | 101.50   |
| 33  | DA    | 1439 | G    | N9-C1'-C2'  | -5.22 | 106.26      | 112.00   |
| 8   | AB    | 2386 | A    | O4'-C1'-N9  | 5.22  | 112.37      | 108.20   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 451  | A    | P-O3'-C3'   | 5.22  | 125.96      | 119.70   |
| 8   | AB    | 200  | U    | O4'-C1'-N1  | -5.22 | 104.03      | 108.20   |
| 8   | CB    | 987  | C    | P-O3'-C3'   | -5.22 | 113.44      | 119.70   |
| 8   | CB    | 1520 | U    | C4'-C3'-C2' | -5.22 | 97.38       | 102.60   |
| 8   | AB    | 1645 | G    | O4'-C1'-N9  | -5.21 | 104.03      | 108.20   |
| 8   | AB    | 2683 | C    | C4'-C3'-C2' | 5.21  | 107.81      | 102.60   |
| 33  | BA    | 157  | U    | C4'-C3'-C2' | -5.21 | 97.39       | 102.60   |
| 33  | BA    | 784  | A    | P-O3'-C3'   | 5.21  | 125.96      | 119.70   |
| 8   | CB    | 2015 | A    | C5'-C4'-O4' | -5.21 | 102.84      | 109.10   |
| 8   | AB    | 2219 | U    | C4'-C3'-C2' | -5.21 | 97.39       | 102.60   |
| 8   | AB    | 2288 | A    | C4-C5-N7    | -5.21 | 108.09      | 110.70   |
| 33  | DA    | 46   | G    | C4'-C3'-C2' | -5.21 | 97.39       | 102.60   |
| 8   | AB    | 1248 | G    | P-O3'-C3'   | 5.21  | 125.95      | 119.70   |
| 8   | AB    | 1393 | A    | C3'-C2'-C1' | 5.21  | 105.67      | 101.50   |
| 33  | BA    | 720  | C    | P-O3'-C3'   | 5.21  | 125.95      | 119.70   |
| 8   | CB    | 2876 | G    | C4'-C3'-C2' | -5.21 | 97.39       | 102.60   |
| 8   | CB    | 2345 | G    | C4'-C3'-C2' | -5.21 | 97.39       | 102.60   |
| 33  | DA    | 637  | C    | O4'-C1'-N1  | -5.21 | 104.03      | 108.20   |
| 8   | AB    | 1293 | C    | O4'-C1'-N1  | -5.21 | 104.03      | 108.20   |
| 8   | CB    | 485  | C    | O4'-C1'-N1  | 5.21  | 112.37      | 108.20   |
| 8   | CB    | 1924 | C    | O4'-C1'-N1  | 5.21  | 112.37      | 108.20   |
| 33  | DA    | 1424 | U    | C3'-C2'-C1' | 5.21  | 105.67      | 101.50   |
| 8   | CB    | 1363 | C    | C3'-C2'-C1' | 5.21  | 105.67      | 101.50   |
| 33  | DA    | 901  | A    | N9-C1'-C2'  | 5.21  | 120.77      | 114.00   |
| 8   | AB    | 732  | C    | C4'-C3'-C2' | -5.21 | 97.39       | 102.60   |
| 8   | AB    | 778  | G    | O4'-C1'-N9  | -5.21 | 104.04      | 108.20   |
| 8   | AB    | 2876 | G    | C1'-O4'-C4' | -5.21 | 105.74      | 109.90   |
| 8   | AB    | 963  | U    | C1'-O4'-C4' | -5.20 | 105.74      | 109.90   |
| 8   | CB    | 2746 | U    | C4'-C3'-C2' | -5.20 | 97.40       | 102.60   |
| 33  | DA    | 517  | G    | C1'-O4'-C4' | -5.20 | 105.74      | 109.90   |
| 8   | CB    | 953  | G    | C5-C6-O6    | -5.20 | 125.48      | 128.60   |
| 8   | CB    | 2072 | C    | C1'-O4'-C4' | -5.20 | 105.74      | 109.90   |
| 8   | CB    | 2198 | A    | C3'-C2'-C1' | -5.20 | 97.34       | 101.50   |
| 33  | DA    | 692  | U    | O4'-C1'-N1  | 5.20  | 112.36      | 108.20   |
| 8   | CB    | 731  | C    | O4'-C1'-N1  | -5.20 | 104.04      | 108.20   |
| 8   | CB    | 2353 | G    | P-O3'-C3'   | -5.20 | 113.46      | 119.70   |
| 8   | CB    | 2505 | G    | C3'-C2'-C1' | 5.20  | 105.66      | 101.50   |
| 8   | CB    | 2400 | G    | O4'-C1'-N9  | 5.20  | 112.36      | 108.20   |
| 8   | AB    | 42   | A    | C3'-C2'-C1' | -5.20 | 97.34       | 101.50   |
| 8   | AB    | 819  | A    | O4'-C1'-N9  | -5.20 | 104.04      | 108.20   |
| 33  | BA    | 448  | A    | C4'-C3'-C2' | -5.20 | 97.41       | 102.60   |
| 33  | BA    | 808  | C    | P-O3'-C3'   | -5.20 | 113.47      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | BA    | 1487 | G    | N3-C4-C5    | 5.20  | 131.20      | 128.60   |
| 8   | CB    | 1271 | G    | C4'-C3'-C2' | -5.20 | 97.40       | 102.60   |
| 8   | AB    | 1378 | A    | C4'-C3'-C2' | -5.19 | 97.41       | 102.60   |
| 8   | CB    | 1601 | G    | P-O3'-C3'   | 5.19  | 125.93      | 119.70   |
| 8   | AB    | 671  | C    | C1'-O4'-C4' | -5.19 | 105.75      | 109.90   |
| 8   | AB    | 983  | A    | C1'-O4'-C4' | -5.19 | 105.75      | 109.90   |
| 8   | AB    | 2576 | G    | N3-C4-N9    | 5.19  | 129.12      | 126.00   |
| 33  | BA    | 233  | C    | C4'-C3'-C2' | -5.19 | 97.41       | 102.60   |
| 33  | BA    | 1475 | G    | O4'-C1'-N9  | 5.19  | 112.36      | 108.20   |
| 8   | CB    | 2835 | A    | C4'-C3'-C2' | -5.19 | 97.41       | 102.60   |
| 33  | DA    | 602  | A    | C4'-C3'-C2' | -5.19 | 97.41       | 102.60   |
| 8   | AB    | 1629 | U    | P-O3'-C3'   | -5.19 | 113.47      | 119.70   |
| 33  | BA    | 405  | U    | C4'-C3'-C2' | -5.19 | 97.41       | 102.60   |
| 33  | DA    | 1064 | G    | C3'-C2'-C1' | -5.19 | 97.35       | 101.50   |
| 33  | DA    | 653  | U    | C3'-C2'-C1' | 5.19  | 105.65      | 101.50   |
| 33  | DA    | 839  | C    | O4'-C1'-N1  | 5.19  | 112.35      | 108.20   |
| 8   | AB    | 1306 | C    | C3'-C2'-C1' | -5.19 | 97.35       | 101.50   |
| 33  | BA    | 672  | U    | C3'-C2'-C1' | -5.19 | 97.35       | 101.50   |
| 8   | CB    | 982  | C    | C2-N1-C1'   | 5.19  | 124.51      | 118.80   |
| 33  | DA    | 527  | G    | C4-N9-C1'   | -5.19 | 119.75      | 126.50   |
| 8   | CB    | 963  | U    | C1'-O4'-C4' | -5.19 | 105.75      | 109.90   |
| 8   | CB    | 2592 | G    | O5'-C5'-C4' | -5.19 | 101.85      | 111.70   |
| 8   | AB    | 784  | G    | C8-N9-C4    | -5.18 | 104.33      | 106.40   |
| 33  | BA    | 31   | G    | C4'-C3'-C2' | -5.18 | 97.42       | 102.60   |
| 33  | BA    | 1151 | A    | P-O3'-C3'   | 5.18  | 125.92      | 119.70   |
| 8   | CB    | 2001 | C    | C3'-C2'-C1' | -5.18 | 97.35       | 101.50   |
| 8   | CB    | 2451 | A    | C1'-O4'-C4' | -5.18 | 105.75      | 109.90   |
| 33  | DA    | 101  | A    | C3'-C2'-C1' | -5.18 | 97.35       | 101.50   |
| 33  | DA    | 551  | U    | C3'-C2'-C1' | 5.18  | 105.65      | 101.50   |
| 7   | AA    | 87   | U    | C5-C6-N1    | 5.18  | 125.29      | 122.70   |
| 8   | AB    | 307  | G    | P-O3'-C3'   | -5.18 | 113.48      | 119.70   |
| 8   | AB    | 1212 | G    | N9-C1'-C2'  | -5.18 | 106.30      | 112.00   |
| 8   | AB    | 538  | A    | C1'-O4'-C4' | -5.18 | 105.75      | 109.90   |
| 8   | AB    | 1304 | A    | C3'-C2'-C1' | -5.18 | 97.36       | 101.50   |
| 8   | AB    | 1840 | G    | P-O3'-C3'   | 5.18  | 125.92      | 119.70   |
| 33  | DA    | 778  | G    | P-O3'-C3'   | 5.18  | 125.92      | 119.70   |
| 8   | AB    | 2321 | U    | O4'-C4'-C3' | -5.18 | 98.82       | 104.00   |
| 33  | BA    | 634  | C    | P-O3'-C3'   | 5.18  | 125.92      | 119.70   |
| 8   | CB    | 248  | G    | N1-C6-O6    | 5.18  | 123.01      | 119.90   |
| 8   | CB    | 2678 | C    | C3'-C2'-C1' | 5.18  | 105.64      | 101.50   |
| 33  | DA    | 946  | A    | C4'-C3'-C2' | -5.18 | 97.42       | 102.60   |
| 8   | AB    | 479  | A    | C1'-O4'-C4' | -5.18 | 105.76      | 109.90   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2425 | A    | P-O3'-C3'   | 5.18  | 125.91      | 119.70   |
| 8   | AB    | 2465 | C    | C4'-C3'-C2' | -5.18 | 97.42       | 102.60   |
| 8   | CB    | 2281 | A    | C4'-C3'-C2' | -5.18 | 97.42       | 102.60   |
| 8   | AB    | 1282 | U    | O4'-C1'-N1  | 5.18  | 112.34      | 108.20   |
| 8   | CB    | 910  | A    | C1'-O4'-C4' | -5.18 | 105.76      | 109.90   |
| 33  | DA    | 1196 | A    | C1'-O4'-C4' | -5.18 | 105.76      | 109.90   |
| 33  | BA    | 86   | G    | C4'-C3'-C2' | -5.17 | 97.42       | 102.60   |
| 8   | CB    | 2742 | G    | N1-C6-O6    | 5.17  | 123.00      | 119.90   |
| 33  | DA    | 741  | G    | N9-C1'-C2'  | -5.17 | 106.31      | 112.00   |
| 33  | BA    | 358  | U    | C3'-C2'-C1' | 5.17  | 105.64      | 101.50   |
| 33  | BA    | 727  | G    | C1'-O4'-C4' | -5.17 | 105.76      | 109.90   |
| 3   | C2    | 16   | HIS  | N-CA-C      | -5.17 | 97.03       | 111.00   |
| 7   | CA    | 55   | U    | C1'-O4'-C4' | -5.17 | 105.76      | 109.90   |
| 8   | CB    | 260  | G    | C3'-C2'-C1' | -5.17 | 97.36       | 101.50   |
| 8   | CB    | 2286 | G    | C3'-C2'-C1' | 5.17  | 105.64      | 101.50   |
| 7   | CA    | 73   | A    | C5'-C4'-O4' | 5.17  | 115.31      | 109.10   |
| 8   | CB    | 344  | A    | C1'-O4'-C4' | -5.17 | 105.76      | 109.90   |
| 8   | CB    | 2756 | U    | C3'-C2'-C1' | -5.17 | 97.36       | 101.50   |
| 8   | AB    | 878  | A    | C3'-C2'-C1' | 5.17  | 105.64      | 101.50   |
| 8   | AB    | 1156 | A    | C3'-C2'-C1' | -5.17 | 97.37       | 101.50   |
| 33  | BA    | 1399 | C    | C3'-C2'-C1' | -5.17 | 97.37       | 101.50   |
| 8   | CB    | 35   | G    | N9-C1'-C2'  | -5.17 | 106.31      | 112.00   |
| 8   | AB    | 79   | C    | C4'-C3'-C2' | -5.17 | 97.43       | 102.60   |
| 8   | AB    | 333  | G    | N3-C4-C5    | -5.17 | 126.02      | 128.60   |
| 8   | AB    | 2473 | U    | C3'-C2'-C1' | 5.17  | 105.63      | 101.50   |
| 8   | CB    | 447  | A    | O5'-C5'-C4' | -5.17 | 101.88      | 111.70   |
| 8   | CB    | 2549 | G    | C4'-C3'-C2' | -5.17 | 97.43       | 102.60   |
| 8   | CB    | 2732 | G    | C4-N9-C1'   | 5.17  | 133.22      | 126.50   |
| 8   | AB    | 871  | U    | O4'-C1'-C2' | -5.17 | 100.64      | 105.80   |
| 8   | AB    | 797  | G    | C4'-C3'-C2' | -5.16 | 97.44       | 102.60   |
| 8   | AB    | 797  | G    | O4'-C1'-N9  | 5.16  | 112.33      | 108.20   |
| 8   | AB    | 1520 | U    | C4'-C3'-C2' | -5.16 | 97.44       | 102.60   |
| 8   | AB    | 2502 | G    | N1-C6-O6    | 5.16  | 123.00      | 119.90   |
| 8   | CB    | 834  | G    | C5-C6-O6    | -5.16 | 125.50      | 128.60   |
| 8   | CB    | 2419 | U    | N3-C4-O4    | 5.16  | 123.01      | 119.40   |
| 32  | AZ    | 19   | GLY  | N-CA-C      | -5.16 | 100.19      | 113.10   |
| 33  | DA    | 772  | U    | O4'-C1'-N1  | 5.16  | 112.33      | 108.20   |
| 33  | DA    | 1467 | C    | C2-N1-C1'   | 5.16  | 124.48      | 118.80   |
| 8   | AB    | 432  | A    | O4'-C1'-N9  | 5.16  | 112.33      | 108.20   |
| 8   | AB    | 1031 | G    | O4'-C1'-N9  | 5.16  | 112.33      | 108.20   |
| 33  | BA    | 926  | G    | C3'-C2'-C1' | 5.16  | 105.63      | 101.50   |
| 8   | CB    | 1306 | C    | C3'-C2'-C1' | -5.16 | 97.37       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 816  | A    | N9-C1'-C2'  | -5.16 | 106.32      | 112.00   |
| 33  | BA    | 608  | A    | C3'-C2'-C1' | -5.16 | 97.37       | 101.50   |
| 33  | BA    | 627  | G    | C3'-C2'-C1' | 5.16  | 105.63      | 101.50   |
| 8   | CB    | 1610 | A    | N7-C8-N9    | 5.16  | 116.38      | 113.80   |
| 33  | DA    | 956  | U    | P-O3'-C3'   | -5.16 | 113.51      | 119.70   |
| 33  | BA    | 266  | G    | C3'-C2'-C1' | 5.16  | 105.62      | 101.50   |
| 8   | CB    | 1257 | C    | P-O3'-C3'   | -5.16 | 113.51      | 119.70   |
| 8   | CB    | 1949 | G    | C6-C5-N7    | -5.16 | 127.31      | 130.40   |
| 8   | AB    | 1301 | A    | N9-C1'-C2'  | 5.16  | 120.70      | 114.00   |
| 33  | BA    | 532  | A    | C3'-C2'-C1' | -5.16 | 97.38       | 101.50   |
| 33  | BA    | 777  | A    | O4'-C1'-N9  | 5.16  | 112.32      | 108.20   |
| 8   | CB    | 468  | G    | C5-C6-N1    | 5.16  | 114.08      | 111.50   |
| 8   | CB    | 1156 | A    | C4'-C3'-C2' | -5.16 | 97.44       | 102.60   |
| 33  | BA    | 357  | G    | C5'-C4'-O4' | 5.15  | 115.28      | 109.10   |
| 8   | AB    | 527  | C    | C6-N1-C1'   | -5.15 | 114.62      | 120.80   |
| 8   | AB    | 578  | G    | O4'-C1'-N9  | -5.15 | 104.08      | 108.20   |
| 8   | AB    | 2845 | U    | C4'-C3'-C2' | -5.15 | 97.45       | 102.60   |
| 8   | AB    | 111  | A    | O5'-C5'-C4' | -5.15 | 101.91      | 111.70   |
| 8   | CB    | 1938 | A    | O4'-C1'-N9  | 5.15  | 112.32      | 108.20   |
| 33  | DA    | 1438 | G    | P-O3'-C3'   | -5.15 | 113.52      | 119.70   |
| 8   | AB    | 866  | A    | C4'-C3'-C2' | -5.15 | 97.45       | 102.60   |
| 8   | CB    | 48   | G    | C4'-C3'-C2' | -5.15 | 97.45       | 102.60   |
| 8   | AB    | 553  | G    | O4'-C1'-N9  | 5.15  | 112.32      | 108.20   |
| 8   | AB    | 910  | A    | N9-C1'-C2'  | 5.15  | 120.69      | 114.00   |
| 8   | AB    | 1750 | G    | C3'-C2'-C1' | -5.15 | 97.38       | 101.50   |
| 8   | CB    | 2136 | G    | C4'-C3'-C2' | -5.15 | 97.45       | 102.60   |
| 33  | DA    | 993  | G    | C1'-O4'-C4' | -5.15 | 105.78      | 109.90   |
| 8   | AB    | 691  | C    | C3'-C2'-C1' | 5.15  | 105.62      | 101.50   |
| 8   | AB    | 982  | C    | C6-N1-C2    | -5.15 | 118.24      | 120.30   |
| 8   | CB    | 1629 | U    | P-O3'-C3'   | -5.15 | 113.53      | 119.70   |
| 8   | CB    | 2440 | C    | N1-C1'-C2'  | 5.15  | 120.69      | 114.00   |
| 8   | AB    | 2101 | A    | C4'-C3'-C2' | -5.14 | 97.45       | 102.60   |
| 8   | AB    | 2102 | G    | C4'-C3'-C2' | -5.14 | 97.45       | 102.60   |
| 8   | AB    | 2832 | U    | O4'-C1'-N1  | 5.14  | 112.32      | 108.20   |
| 33  | BA    | 516  | U    | C3'-C2'-C1' | 5.14  | 105.62      | 101.50   |
| 33  | BA    | 1085 | U    | C3'-C2'-C1' | -5.14 | 97.38       | 101.50   |
| 8   | CB    | 2107 | G    | C3'-C2'-C1' | 5.14  | 105.62      | 101.50   |
| 8   | CB    | 2642 | G    | O4'-C1'-N9  | 5.14  | 112.31      | 108.20   |
| 33  | DA    | 528  | C    | P-O5'-C5'   | -5.14 | 112.67      | 120.90   |
| 33  | DA    | 1250 | A    | C1'-O4'-C4' | -5.14 | 105.78      | 109.90   |
| 8   | AB    | 1920 | C    | O4'-C1'-N1  | -5.14 | 104.09      | 108.20   |
| 8   | AB    | 2559 | C    | C4'-C3'-C2' | -5.14 | 97.46       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2622 | U    | O4'-C1'-N1  | 5.14  | 112.31      | 108.20   |
| 33  | BA    | 765  | G    | N7-C8-N9    | 5.14  | 115.67      | 113.10   |
| 7   | CA    | 95   | U    | C5-C6-N1    | 5.14  | 125.27      | 122.70   |
| 8   | CB    | 646  | U    | C4'-C3'-C2' | -5.14 | 97.46       | 102.60   |
| 8   | AB    | 485  | C    | O4'-C1'-N1  | 5.14  | 112.31      | 108.20   |
| 8   | AB    | 1023 | U    | C1'-O4'-C4' | -5.14 | 105.79      | 109.90   |
| 33  | BA    | 1506 | U    | N3-C2-O2    | -5.14 | 118.60      | 122.20   |
| 8   | CB    | 1753 | G    | P-O3'-C3'   | -5.14 | 113.54      | 119.70   |
| 8   | CB    | 2261 | C    | O4'-C1'-N1  | -5.14 | 104.09      | 108.20   |
| 8   | CB    | 2742 | G    | C6-C5-N7    | -5.14 | 127.32      | 130.40   |
| 33  | DA    | 1398 | A    | O4'-C1'-N9  | -5.14 | 104.09      | 108.20   |
| 8   | AB    | 1988 | G    | C4'-C3'-C2' | -5.13 | 97.47       | 102.60   |
| 8   | AB    | 2598 | A    | O4'-C1'-N9  | -5.13 | 104.09      | 108.20   |
| 33  | BA    | 951  | G    | C4'-C3'-C2' | -5.13 | 97.47       | 102.60   |
| 8   | AB    | 664  | G    | P-O3'-C3'   | -5.13 | 113.54      | 119.70   |
| 8   | AB    | 2469 | A    | C3'-C2'-C1' | -5.13 | 97.39       | 101.50   |
| 33  | BA    | 124  | C    | P-O3'-C3'   | -5.13 | 113.54      | 119.70   |
| 8   | CB    | 1696 | G    | N1-C6-O6    | 5.13  | 122.98      | 119.90   |
| 33  | DA    | 717  | U    | C3'-C2'-C1' | 5.13  | 105.61      | 101.50   |
| 33  | BA    | 1168 | U    | C4'-C3'-C2' | -5.13 | 97.47       | 102.60   |
| 38  | DF    | 39   | LEU  | CA-CB-CG    | 5.13  | 127.10      | 115.30   |
| 8   | AB    | 7    | G    | N1-C6-O6    | 5.13  | 122.98      | 119.90   |
| 8   | AB    | 1337 | G    | O4'-C1'-N9  | -5.13 | 104.10      | 108.20   |
| 8   | CB    | 1337 | G    | O4'-C1'-C2' | -5.13 | 100.67      | 105.80   |
| 33  | DA    | 8    | A    | O4'-C1'-N9  | 5.13  | 112.30      | 108.20   |
| 8   | AB    | 1241 | A    | O4'-C1'-N9  | 5.12  | 112.30      | 108.20   |
| 8   | CB    | 191  | A    | O4'-C1'-C2' | -5.12 | 100.67      | 105.80   |
| 8   | AB    | 1383 | A    | O4'-C1'-N9  | 5.12  | 112.30      | 108.20   |
| 8   | CB    | 379  | G    | C8-N9-C4    | -5.12 | 104.35      | 106.40   |
| 8   | AB    | 346  | A    | C1'-O4'-C4' | -5.12 | 105.80      | 109.90   |
| 8   | AB    | 1382 | G    | O4'-C1'-N9  | 5.12  | 112.30      | 108.20   |
| 33  | BA    | 1003 | G    | C4'-C3'-C2' | -5.12 | 97.48       | 102.60   |
| 8   | CB    | 1927 | A    | O4'-C1'-N9  | -5.12 | 104.10      | 108.20   |
| 8   | CB    | 2226 | C    | N1-C2-O2    | 5.12  | 121.97      | 118.90   |
| 33  | DA    | 540  | G    | O4'-C1'-N9  | 5.12  | 112.30      | 108.20   |
| 8   | AB    | 1268 | A    | C4'-C3'-C2' | -5.12 | 97.48       | 102.60   |
| 8   | AB    | 1635 | A    | P-O3'-C3'   | 5.12  | 125.84      | 119.70   |
| 8   | CB    | 1041 | G    | C1'-O4'-C4' | -5.12 | 105.81      | 109.90   |
| 8   | CB    | 1831 | G    | O4'-C1'-N9  | 5.12  | 112.30      | 108.20   |
| 8   | AB    | 465  | G    | C3'-C2'-C1' | 5.12  | 105.59      | 101.50   |
| 8   | AB    | 2046 | G    | P-O3'-C3'   | -5.12 | 113.56      | 119.70   |
| 33  | BA    | 764  | C    | N1-C1'-C2'  | -5.12 | 106.37      | 112.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 566  | U    | O4'-C1'-N1  | 5.12  | 112.29      | 108.20   |
| 33  | BA    | 316  | C    | C4'-C3'-C2' | -5.12 | 97.48       | 102.60   |
| 8   | CB    | 945  | A    | C1'-O4'-C4' | -5.12 | 105.81      | 109.90   |
| 8   | CB    | 1535 | A    | O4'-C1'-N9  | 5.12  | 112.29      | 108.20   |
| 8   | AB    | 2712 | C    | C5'-C4'-O4' | -5.11 | 102.96      | 109.10   |
| 8   | CB    | 662  | G    | C4'-C3'-C2' | -5.11 | 97.49       | 102.60   |
| 8   | CB    | 2719 | G    | P-O3'-C3'   | -5.11 | 113.56      | 119.70   |
| 8   | AB    | 204  | A    | C8-N9-C4    | 5.11  | 107.84      | 105.80   |
| 8   | AB    | 2082 | A    | C8-N9-C4    | -5.11 | 103.75      | 105.80   |
| 8   | CB    | 242  | G    | P-O5'-C5'   | 5.11  | 129.08      | 120.90   |
| 8   | AB    | 1851 | U    | C4'-C3'-C2' | -5.11 | 97.49       | 102.60   |
| 8   | CB    | 431  | U    | O4'-C1'-N1  | 5.11  | 112.29      | 108.20   |
| 8   | CB    | 1203 | U    | C1'-O4'-C4' | -5.11 | 105.81      | 109.90   |
| 8   | CB    | 1855 | U    | O4'-C1'-N1  | -5.11 | 104.11      | 108.20   |
| 33  | DA    | 1229 | A    | C4'-C3'-C2' | -5.11 | 97.49       | 102.60   |
| 33  | BA    | 634  | C    | C6-N1-C2    | -5.11 | 118.26      | 120.30   |
| 8   | CB    | 421  | C    | C3'-C2'-C1' | 5.11  | 105.59      | 101.50   |
| 8   | CB    | 2386 | A    | O4'-C1'-N9  | 5.11  | 112.29      | 108.20   |
| 33  | DA    | 683  | G    | N7-C8-N9    | 5.11  | 115.66      | 113.10   |
| 33  | DA    | 782  | A    | C5'-C4'-O4' | 5.11  | 115.23      | 109.10   |
| 33  | DA    | 1425 | U    | P-O3'-C3'   | -5.11 | 113.57      | 119.70   |
| 8   | AB    | 239  | C    | C3'-C2'-C1' | 5.11  | 105.59      | 101.50   |
| 8   | CB    | 606  | U    | P-O3'-C3'   | -5.11 | 113.57      | 119.70   |
| 8   | CB    | 978  | G    | C1'-O4'-C4' | -5.11 | 105.81      | 109.90   |
| 8   | CB    | 1652 | A    | O3'-P-O5'   | -5.11 | 94.30       | 104.00   |
| 8   | AB    | 1692 | U    | C1'-O4'-C4' | -5.11 | 105.82      | 109.90   |
| 33  | BA    | 979  | C    | C3'-C2'-C1' | 5.11  | 105.58      | 101.50   |
| 8   | CB    | 1869 | G    | C3'-C2'-C1' | -5.11 | 97.42       | 101.50   |
| 8   | CB    | 2596 | U    | C4'-C3'-C2' | 5.11  | 107.70      | 102.60   |
| 33  | DA    | 761  | G    | C6-C5-N7    | -5.10 | 127.34      | 130.40   |
| 8   | AB    | 263  | G    | C1'-O4'-C4' | -5.10 | 105.82      | 109.90   |
| 8   | AB    | 871  | U    | O4'-C4'-C3' | -5.10 | 98.90       | 104.00   |
| 33  | BA    | 521  | G    | P-O3'-C3'   | -5.10 | 113.58      | 119.70   |
| 33  | BA    | 1470 | U    | C4'-C3'-C2' | -5.10 | 97.50       | 102.60   |
| 8   | CB    | 92   | U    | C3'-C2'-C1' | -5.10 | 97.42       | 101.50   |
| 8   | CB    | 971  | G    | P-O3'-C3'   | -5.10 | 113.58      | 119.70   |
| 8   | AB    | 302  | C    | P-O3'-C3'   | 5.10  | 125.82      | 119.70   |
| 8   | AB    | 2382 | G    | C5'-C4'-O4' | -5.10 | 102.98      | 109.10   |
| 8   | CB    | 1257 | C    | N3-C4-C5    | -5.10 | 119.86      | 121.90   |
| 8   | CB    | 1314 | C    | N1-C2-O2    | 5.10  | 121.96      | 118.90   |
| 8   | CB    | 618  | G    | C4'-C3'-C2' | -5.10 | 97.50       | 102.60   |
| 8   | CB    | 1587 | G    | C4'-C3'-C2' | -5.10 | 97.50       | 102.60   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 1227 | G    | N3-C4-C5    | -5.10 | 126.05      | 128.60   |
| 8   | AB    | 2496 | C    | C3'-C2'-C1' | 5.10  | 105.58      | 101.50   |
| 33  | BA    | 612  | C    | O4'-C1'-N1  | 5.10  | 112.28      | 108.20   |
| 8   | CB    | 684  | G    | C4-C5-N7    | 5.10  | 112.84      | 110.80   |
| 8   | AB    | 774  | G    | P-O5'-C5'   | -5.10 | 112.75      | 120.90   |
| 8   | CB    | 62   | U    | O4'-C1'-N1  | 5.10  | 112.28      | 108.20   |
| 8   | CB    | 467  | G    | C4-C5-N7    | -5.10 | 108.76      | 110.80   |
| 33  | DA    | 776  | G    | P-O5'-C5'   | -5.10 | 112.75      | 120.90   |
| 8   | CB    | 1202 | G    | C1'-O4'-C4' | -5.09 | 105.82      | 109.90   |
| 8   | CB    | 2282 | G    | C3'-C2'-C1' | 5.09  | 105.58      | 101.50   |
| 8   | CB    | 2778 | A    | C3'-C2'-C1' | 5.09  | 105.58      | 101.50   |
| 33  | DA    | 637  | C    | C6-N1-C2    | 5.09  | 122.34      | 120.30   |
| 8   | AB    | 244  | A    | C4'-C3'-C2' | -5.09 | 97.51       | 102.60   |
| 8   | AB    | 1831 | G    | N3-C4-C5    | -5.09 | 126.06      | 128.60   |
| 8   | AB    | 2016 | U    | P-O3'-C3'   | 5.09  | 125.81      | 119.70   |
| 8   | CB    | 120  | U    | C3'-C2'-C1' | -5.09 | 97.43       | 101.50   |
| 8   | CB    | 1124 | G    | C2-N3-C4    | -5.09 | 109.35      | 111.90   |
| 8   | CB    | 1163 | G    | C3'-C2'-C1' | -5.09 | 97.43       | 101.50   |
| 33  | DA    | 389  | A    | P-O3'-C3'   | 5.09  | 125.81      | 119.70   |
| 33  | DA    | 582  | C    | C6-N1-C2    | -5.09 | 118.26      | 120.30   |
| 33  | DA    | 810  | C    | C4'-C3'-C2' | -5.09 | 97.51       | 102.60   |
| 8   | AB    | 1156 | A    | C4'-C3'-C2' | -5.09 | 97.51       | 102.60   |
| 33  | BA    | 1378 | C    | C2-N1-C1'   | 5.09  | 124.40      | 118.80   |
| 7   | CA    | 12   | C    | O4'-C1'-N1  | 5.09  | 112.27      | 108.20   |
| 8   | CB    | 528  | A    | P-O5'-C5'   | -5.09 | 112.76      | 120.90   |
| 8   | CB    | 1301 | A    | O4'-C1'-N9  | 5.09  | 112.27      | 108.20   |
| 8   | AB    | 2739 | U    | C3'-C2'-C1' | -5.09 | 97.43       | 101.50   |
| 8   | CB    | 1632 | A    | C3'-C2'-C1' | 5.09  | 105.57      | 101.50   |
| 8   | CB    | 2720 | U    | C4'-C3'-C2' | -5.09 | 97.51       | 102.60   |
| 8   | CB    | 2870 | C    | C6-N1-C2    | 5.09  | 122.33      | 120.30   |
| 8   | AB    | 2848 | G    | N1-C6-O6    | 5.09  | 122.95      | 119.90   |
| 33  | BA    | 355  | C    | O4'-C1'-N1  | 5.09  | 112.27      | 108.20   |
| 8   | CB    | 2577 | A    | C8-N9-C4    | -5.09 | 103.77      | 105.80   |
| 33  | DA    | 1030 | U    | C3'-C2'-C1' | 5.09  | 105.57      | 101.50   |
| 8   | AB    | 1466 | U    | O4'-C1'-N1  | 5.08  | 112.27      | 108.20   |
| 8   | AB    | 2686 | G    | N9-C4-C5    | 5.08  | 107.43      | 105.40   |
| 8   | CB    | 2002 | G    | C4'-C3'-C2' | -5.08 | 97.52       | 102.60   |
| 8   | AB    | 2430 | A    | C3'-C2'-C1' | 5.08  | 105.57      | 101.50   |
| 22  | AP    | 71   | ARG  | N-CA-C      | 5.08  | 124.72      | 111.00   |
| 8   | CB    | 788  | A    | C4'-C3'-C2' | -5.08 | 97.52       | 102.60   |
| 8   | CB    | 1701 | A    | C4'-C3'-C2' | -5.08 | 97.52       | 102.60   |
| 8   | CB    | 2303 | G    | C3'-C2'-C1' | -5.08 | 97.43       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2870 | C    | O4'-C1'-N1  | -5.08 | 104.13      | 108.20   |
| 33  | DA    | 77   | A    | O4'-C1'-N9  | 5.08  | 112.27      | 108.20   |
| 33  | DA    | 530  | G    | C4'-C3'-C2' | 5.08  | 107.68      | 102.60   |
| 33  | DA    | 801  | U    | O4'-C1'-N1  | 5.08  | 112.27      | 108.20   |
| 8   | AB    | 1266 | G    | N9-C1'-C2'  | 5.08  | 120.61      | 114.00   |
| 8   | CB    | 1665 | A    | N1-C6-N6    | 5.08  | 121.65      | 118.60   |
| 33  | DA    | 383  | A    | C3'-C2'-C1' | 5.08  | 105.57      | 101.50   |
| 33  | DA    | 913  | A    | C4'-C3'-C2' | -5.08 | 97.52       | 102.60   |
| 33  | DA    | 958  | A    | P-O3'-C3'   | 5.08  | 125.80      | 119.70   |
| 33  | BA    | 765  | G    | C3'-C2'-C1' | -5.08 | 97.44       | 101.50   |
| 33  | BA    | 862  | C    | O4'-C1'-N1  | 5.08  | 112.26      | 108.20   |
| 8   | AB    | 1854 | A    | O4'-C1'-N9  | -5.08 | 104.14      | 108.20   |
| 33  | BA    | 60   | A    | C3'-C2'-C1' | 5.08  | 105.56      | 101.50   |
| 8   | CB    | 664  | G    | O4'-C1'-N9  | -5.08 | 104.14      | 108.20   |
| 33  | DA    | 585  | G    | C8-N9-C4    | -5.08 | 104.37      | 106.40   |
| 33  | DA    | 1478 | U    | O4'-C1'-N1  | 5.08  | 112.26      | 108.20   |
| 8   | AB    | 974  | G    | C5-C6-O6    | -5.08 | 125.55      | 128.60   |
| 8   | AB    | 1936 | A    | C3'-C2'-C1' | 5.08  | 105.56      | 101.50   |
| 33  | BA    | 1059 | C    | P-O3'-C3'   | -5.08 | 113.61      | 119.70   |
| 33  | BA    | 1455 | G    | C3'-C2'-C1' | -5.08 | 97.44       | 101.50   |
| 8   | AB    | 102  | U    | C4'-C3'-C2' | -5.08 | 97.53       | 102.60   |
| 8   | AB    | 2280 | G    | C3'-C2'-C1' | -5.08 | 97.44       | 101.50   |
| 8   | AB    | 2785 | C    | C3'-C2'-C1' | -5.08 | 97.44       | 101.50   |
| 8   | CB    | 2384 | U    | P-O3'-C3'   | 5.08  | 125.79      | 119.70   |
| 8   | CB    | 2868 | A    | O4'-C1'-N9  | 5.08  | 112.26      | 108.20   |
| 33  | DA    | 776  | G    | P-O3'-C3'   | -5.08 | 113.61      | 119.70   |
| 8   | AB    | 658  | U    | O4'-C1'-N1  | -5.07 | 104.14      | 108.20   |
| 8   | AB    | 2578 | G    | P-O3'-C3'   | 5.07  | 125.79      | 119.70   |
| 8   | AB    | 2748 | A    | O4'-C1'-N9  | 5.07  | 112.26      | 108.20   |
| 33  | BA    | 580  | C    | C6-N1-C2    | 5.07  | 122.33      | 120.30   |
| 33  | DA    | 264  | C    | C6-N1-C2    | 5.07  | 122.33      | 120.30   |
| 33  | DA    | 905  | U    | C5-C6-N1    | 5.07  | 125.24      | 122.70   |
| 8   | AB    | 431  | U    | O4'-C1'-N1  | 5.07  | 112.26      | 108.20   |
| 8   | AB    | 2311 | A    | P-O3'-C3'   | 5.07  | 125.79      | 119.70   |
| 7   | AA    | 6    | G    | C3'-C2'-C1' | -5.07 | 97.44       | 101.50   |
| 8   | AB    | 2735 | G    | C4'-C3'-C2' | -5.07 | 97.53       | 102.60   |
| 8   | CB    | 2763 | G    | C8-N9-C4    | -5.07 | 104.37      | 106.40   |
| 33  | DA    | 670  | G    | N9-C1'-C2'  | -5.07 | 106.42      | 112.00   |
| 33  | DA    | 849  | G    | C3'-C2'-C1' | 5.07  | 105.56      | 101.50   |
| 8   | AB    | 1830 | C    | O5'-C5'-C4' | 5.07  | 121.33      | 111.70   |
| 8   | CB    | 1019 | U    | O4'-C1'-N1  | 5.07  | 112.25      | 108.20   |
| 8   | AB    | 1776 | G    | O5'-C5'-C4' | 5.07  | 121.33      | 111.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | CB    | 2732 | G    | N1-C6-O6    | 5.07  | 122.94      | 119.90   |
| 8   | CB    | 2780 | G    | O4'-C1'-N9  | -5.07 | 104.15      | 108.20   |
| 33  | DA    | 391  | G    | N3-C4-C5    | -5.07 | 126.07      | 128.60   |
| 33  | DA    | 585  | G    | N7-C8-N9    | 5.07  | 115.63      | 113.10   |
| 8   | AB    | 35   | G    | C2-N3-C4    | -5.07 | 109.37      | 111.90   |
| 8   | AB    | 169  | G    | C4'-C3'-C2' | -5.07 | 97.53       | 102.60   |
| 8   | AB    | 1375 | U    | C3'-C2'-C1' | 5.07  | 105.55      | 101.50   |
| 8   | CB    | 188  | G    | P-O3'-C3'   | -5.07 | 113.62      | 119.70   |
| 8   | CB    | 829  | A    | P-O3'-C3'   | 5.07  | 125.78      | 119.70   |
| 33  | BA    | 351  | G    | C8-N9-C4    | -5.06 | 104.37      | 106.40   |
| 33  | BA    | 743  | A    | C4'-C3'-C2' | -5.06 | 97.54       | 102.60   |
| 33  | BA    | 982  | U    | C4'-C3'-C2' | -5.06 | 97.54       | 102.60   |
| 8   | CB    | 2614 | A    | O4'-C1'-N9  | 5.06  | 112.25      | 108.20   |
| 33  | DA    | 1430 | A    | O4'-C1'-N9  | -5.06 | 104.15      | 108.20   |
| 8   | AB    | 2092 | U    | O4'-C1'-N1  | 5.06  | 112.25      | 108.20   |
| 33  | BA    | 537  | G    | C6-C5-N7    | -5.06 | 127.36      | 130.40   |
| 8   | CB    | 768  | G    | N3-C4-C5    | 5.06  | 131.13      | 128.60   |
| 8   | CB    | 2679 | A    | C3'-C2'-C1' | 5.06  | 105.55      | 101.50   |
| 33  | DA    | 466  | A    | C3'-C2'-C1' | 5.06  | 105.55      | 101.50   |
| 33  | DA    | 805  | C    | C6-N1-C2    | 5.06  | 122.33      | 120.30   |
| 33  | BA    | 362  | G    | C3'-C2'-C1' | -5.06 | 97.45       | 101.50   |
| 33  | BA    | 1336 | C    | C1'-O4'-C4' | -5.06 | 105.85      | 109.90   |
| 7   | AA    | 19   | C    | C4'-C3'-C2' | -5.06 | 97.54       | 102.60   |
| 8   | AB    | 123  | G    | O4'-C1'-N9  | 5.06  | 112.25      | 108.20   |
| 8   | AB    | 259  | G    | C3'-C2'-C1' | -5.06 | 97.45       | 101.50   |
| 8   | AB    | 1840 | G    | N3-C4-C5    | -5.06 | 126.07      | 128.60   |
| 8   | AB    | 2687 | U    | N1-C1'-C2'  | 5.06  | 120.58      | 114.00   |
| 8   | AB    | 2727 | A    | P-O3'-C3'   | 5.06  | 125.77      | 119.70   |
| 33  | BA    | 1083 | U    | O4'-C1'-N1  | 5.06  | 112.25      | 108.20   |
| 8   | CB    | 1595 | C    | C6-N1-C2    | -5.06 | 118.28      | 120.30   |
| 8   | CB    | 2687 | U    | N3-C4-C5    | -5.06 | 111.56      | 114.60   |
| 33  | DA    | 223  | A    | C3'-C2'-C1' | -5.06 | 97.45       | 101.50   |
| 8   | AB    | 298  | G    | C8-N9-C4    | -5.06 | 104.38      | 106.40   |
| 33  | BA    | 350  | G    | O4'-C1'-C2' | -5.06 | 100.74      | 105.80   |
| 8   | CB    | 1692 | U    | P-O5'-C5'   | -5.06 | 112.81      | 120.90   |
| 8   | CB    | 2543 | G    | C8-N9-C4    | -5.06 | 104.38      | 106.40   |
| 7   | AA    | 52   | A    | O4'-C4'-C3' | -5.06 | 98.94       | 104.00   |
| 8   | AB    | 802  | A    | C3'-C2'-C1' | 5.06  | 105.55      | 101.50   |
| 33  | BA    | 1475 | G    | C4'-C3'-C2' | -5.05 | 97.55       | 102.60   |
| 8   | CB    | 375  | G    | N3-C4-C5    | -5.05 | 126.07      | 128.60   |
| 8   | CB    | 704  | G    | O4'-C1'-N9  | 5.05  | 112.24      | 108.20   |
| 33  | DA    | 893  | C    | C5-C6-N1    | 5.05  | 123.53      | 121.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | DA    | 936  | C    | O4'-C4'-C3' | -5.05 | 98.95       | 104.00   |
| 33  | BA    | 1526 | G    | C5'-C4'-O4' | 5.05  | 115.16      | 109.10   |
| 8   | AB    | 2236 | U    | C1'-O4'-C4' | -5.05 | 105.86      | 109.90   |
| 33  | BA    | 537  | G    | N7-C8-N9    | 5.05  | 115.62      | 113.10   |
| 8   | CB    | 2727 | A    | C4'-C3'-C2' | -5.05 | 97.55       | 102.60   |
| 33  | DA    | 1421 | G    | C8-N9-C4    | -5.05 | 104.38      | 106.40   |
| 8   | CB    | 267  | C    | C2-N1-C1'   | 5.05  | 124.35      | 118.80   |
| 8   | CB    | 994  | C    | C6-N1-C2    | 5.05  | 122.32      | 120.30   |
| 8   | CB    | 1024 | G    | P-O3'-C3'   | -5.05 | 113.64      | 119.70   |
| 8   | CB    | 2202 | U    | C4'-C3'-C2' | -5.05 | 97.55       | 102.60   |
| 8   | AB    | 310  | A    | O4'-C1'-N9  | 5.05  | 112.24      | 108.20   |
| 8   | AB    | 328  | U    | O4'-C1'-N1  | -5.05 | 104.16      | 108.20   |
| 8   | AB    | 931  | U    | C3'-C2'-C1' | 5.05  | 105.54      | 101.50   |
| 33  | BA    | 575  | G    | P-O3'-C3'   | 5.05  | 125.76      | 119.70   |
| 33  | BA    | 682  | G    | C8-N9-C4    | -5.05 | 104.38      | 106.40   |
| 33  | BA    | 803  | G    | C4'-C3'-C2' | -5.05 | 97.55       | 102.60   |
| 33  | DA    | 327  | A    | P-O3'-C3'   | 5.05  | 125.76      | 119.70   |
| 8   | AB    | 2069 | G    | C4'-C3'-C2' | -5.04 | 97.56       | 102.60   |
| 7   | CA    | 19   | C    | C4'-C3'-C2' | -5.04 | 97.56       | 102.60   |
| 8   | CB    | 2434 | A    | P-O5'-C5'   | -5.04 | 112.83      | 120.90   |
| 8   | CB    | 2884 | U    | C3'-C2'-C1' | -5.04 | 97.46       | 101.50   |
| 33  | BA    | 839  | C    | C3'-C2'-C1' | -5.04 | 97.47       | 101.50   |
| 8   | CB    | 613  | A    | C3'-C2'-C1' | 5.04  | 105.53      | 101.50   |
| 33  | DA    | 1220 | G    | C4'-C3'-C2' | -5.04 | 97.56       | 102.60   |
| 8   | AB    | 359  | G    | O4'-C4'-C3' | -5.04 | 98.96       | 104.00   |
| 8   | AB    | 2728 | U    | P-O3'-C3'   | -5.04 | 113.65      | 119.70   |
| 8   | CB    | 410  | G    | C4-C5-C6    | 5.04  | 121.83      | 118.80   |
| 8   | CB    | 701  | G    | C1'-O4'-C4' | -5.04 | 105.87      | 109.90   |
| 8   | CB    | 818  | G    | P-O3'-C3'   | -5.04 | 113.65      | 119.70   |
| 8   | AB    | 1949 | G    | O4'-C1'-N9  | -5.04 | 104.17      | 108.20   |
| 33  | BA    | 465  | A    | O4'-C1'-N9  | 5.04  | 112.23      | 108.20   |
| 33  | BA    | 1035 | A    | O4'-C1'-N9  | 5.04  | 112.23      | 108.20   |
| 8   | AB    | 168  | G    | O4'-C1'-N9  | -5.04 | 104.17      | 108.20   |
| 8   | AB    | 360  | U    | C5-C6-N1    | 5.04  | 125.22      | 122.70   |
| 8   | AB    | 476  | G    | C2-N3-C4    | -5.04 | 109.38      | 111.90   |
| 8   | AB    | 1378 | A    | C3'-C2'-C1' | -5.04 | 97.47       | 101.50   |
| 8   | AB    | 2009 | A    | C4'-C3'-C2' | -5.04 | 97.56       | 102.60   |
| 8   | CB    | 388  | G    | O4'-C1'-N9  | -5.04 | 104.17      | 108.20   |
| 8   | CB    | 2663 | G    | P-O3'-C3'   | -5.04 | 113.65      | 119.70   |
| 33  | DA    | 1453 | G    | P-O3'-C3'   | 5.04  | 125.75      | 119.70   |
| 7   | CA    | 98   | G    | O4'-C1'-N9  | -5.04 | 104.17      | 108.20   |
| 33  | DA    | 491  | G    | P-O3'-C3'   | 5.04  | 125.75      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 1535 | A    | O4'-C1'-N9  | 5.04  | 112.23      | 108.20   |
| 33  | BA    | 1493 | A    | C4'-C3'-C2' | -5.04 | 97.56       | 102.60   |
| 8   | CB    | 533  | G    | C3'-C2'-C1' | 5.04  | 105.53      | 101.50   |
| 8   | CB    | 1832 | C    | P-O3'-C3'   | -5.04 | 113.66      | 119.70   |
| 8   | CB    | 2551 | C    | O4'-C1'-N1  | -5.04 | 104.17      | 108.20   |
| 8   | AB    | 1276 | A    | C8-N9-C4    | -5.03 | 103.79      | 105.80   |
| 33  | BA    | 897  | C    | O4'-C4'-C3' | -5.03 | 98.97       | 104.00   |
| 33  | BA    | 1239 | A    | O4'-C1'-C2' | -5.03 | 100.77      | 105.80   |
| 8   | CB    | 830  | G    | O4'-C1'-N9  | -5.03 | 104.17      | 108.20   |
| 33  | DA    | 373  | A    | C5'-C4'-O4' | -5.03 | 103.06      | 109.10   |
| 33  | DA    | 719  | C    | C4'-C3'-C2' | -5.03 | 97.57       | 102.60   |
| 8   | CB    | 684  | G    | C5-C6-O6    | -5.03 | 125.58      | 128.60   |
| 8   | AB    | 122  | G    | C3'-C2'-C1' | -5.03 | 97.48       | 101.50   |
| 33  | BA    | 736  | C    | C3'-C2'-C1' | -5.03 | 97.48       | 101.50   |
| 8   | CB    | 571  | U    | O4'-C1'-C2' | -5.03 | 100.77      | 105.80   |
| 8   | CB    | 2408 | U    | P-O3'-C3'   | -5.03 | 113.66      | 119.70   |
| 8   | CB    | 2627 | G    | N9-C1'-C2'  | 5.03  | 120.54      | 114.00   |
| 8   | CB    | 2647 | U    | N1-C1'-C2'  | -5.03 | 106.47      | 112.00   |
| 33  | BA    | 796  | C    | C6-N1-C2    | 5.03  | 122.31      | 120.30   |
| 8   | CB    | 833  | A    | P-O3'-C3'   | -5.03 | 113.67      | 119.70   |
| 8   | CB    | 2553 | G    | C8-N9-C4    | -5.03 | 104.39      | 106.40   |
| 33  | DA    | 808  | C    | N1-C1'-C2'  | 5.03  | 120.54      | 114.00   |
| 33  | DA    | 953  | G    | O4'-C1'-N9  | -5.03 | 104.18      | 108.20   |
| 8   | AB    | 794  | A    | C3'-C2'-C1' | 5.03  | 105.52      | 101.50   |
| 8   | AB    | 1777 | U    | P-O3'-C3'   | 5.03  | 125.73      | 119.70   |
| 8   | AB    | 2372 | U    | C4'-C3'-C2' | -5.03 | 97.57       | 102.60   |
| 8   | AB    | 2588 | G    | C3'-C2'-C1' | -5.03 | 97.48       | 101.50   |
| 8   | CB    | 217  | A    | O4'-C1'-N9  | 5.03  | 112.22      | 108.20   |
| 8   | AB    | 242  | G    | C8-N9-C4    | -5.02 | 104.39      | 106.40   |
| 8   | AB    | 434  | U    | C3'-C2'-C1' | -5.02 | 97.48       | 101.50   |
| 8   | AB    | 1659 | G    | C4'-C3'-C2' | -5.02 | 97.58       | 102.60   |
| 33  | BA    | 1281 | C    | C3'-C2'-C1' | 5.02  | 105.52      | 101.50   |
| 33  | DA    | 688  | G    | O4'-C1'-C2' | -5.02 | 100.78      | 105.80   |
| 33  | DA    | 710  | G    | N1-C6-O6    | 5.02  | 122.91      | 119.90   |
| 33  | DA    | 1235 | U    | C5'-C4'-O4' | 5.02  | 115.13      | 109.10   |
| 33  | DA    | 1275 | A    | O4'-C1'-N9  | 5.02  | 112.22      | 108.20   |
| 8   | AB    | 1031 | G    | C3'-C2'-C1' | -5.02 | 97.48       | 101.50   |
| 8   | AB    | 1640 | A    | C3'-C2'-C1' | 5.02  | 105.52      | 101.50   |
| 33  | BA    | 1524 | C    | C4'-C3'-C2' | -5.02 | 97.58       | 102.60   |
| 8   | CB    | 223  | A    | C3'-C2'-C1' | 5.02  | 105.52      | 101.50   |
| 8   | AB    | 2200 | C    | C4'-C3'-C2' | -5.02 | 97.58       | 102.60   |
| 9   | AC    | 20   | ASN  | N-CA-C      | 5.02  | 124.56      | 111.00   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 33  | BA    | 429  | U    | N1-C1'-C2'  | 5.02  | 120.53      | 114.00   |
| 8   | CB    | 940  | G    | C3'-C2'-C1' | -5.02 | 97.48       | 101.50   |
| 8   | CB    | 983  | A    | O4'-C1'-N9  | 5.02  | 112.22      | 108.20   |
| 8   | CB    | 1768 | C    | C4'-C3'-C2' | -5.02 | 97.58       | 102.60   |
| 7   | AA    | 79   | G    | C3'-C2'-C1' | 5.02  | 105.52      | 101.50   |
| 8   | AB    | 211  | C    | P-O3'-C3'   | -5.02 | 113.68      | 119.70   |
| 8   | AB    | 2568 | U    | C2-N1-C1'   | 5.02  | 123.72      | 117.70   |
| 8   | CB    | 2085 | U    | C4'-C3'-C2' | -5.02 | 97.58       | 102.60   |
| 8   | AB    | 253  | C    | O4'-C1'-N1  | -5.02 | 104.19      | 108.20   |
| 8   | AB    | 1632 | A    | C3'-C2'-C1' | 5.02  | 105.51      | 101.50   |
| 8   | AB    | 1712 | U    | C3'-C2'-C1' | 5.02  | 105.51      | 101.50   |
| 33  | BA    | 122  | G    | C3'-C2'-C1' | -5.02 | 97.49       | 101.50   |
| 33  | BA    | 1240 | U    | P-O3'-C3'   | 5.02  | 125.72      | 119.70   |
| 8   | CB    | 1635 | A    | P-O3'-C3'   | 5.02  | 125.72      | 119.70   |
| 8   | CB    | 1933 | G    | N3-C4-C5    | -5.02 | 126.09      | 128.60   |
| 8   | CB    | 2213 | U    | N3-C2-O2    | -5.02 | 118.69      | 122.20   |
| 8   | CB    | 2406 | A    | C3'-C2'-C1' | -5.02 | 97.49       | 101.50   |
| 8   | CB    | 2501 | C    | C3'-C2'-C1' | 5.02  | 105.51      | 101.50   |
| 33  | DA    | 508  | U    | P-O3'-C3'   | 5.02  | 125.72      | 119.70   |
| 33  | DA    | 1267 | C    | C3'-C2'-C1' | 5.02  | 105.52      | 101.50   |
| 33  | BA    | 1391 | U    | C3'-C2'-C1' | 5.02  | 105.51      | 101.50   |
| 33  | DA    | 995  | C    | C4'-C3'-C2' | -5.02 | 97.58       | 102.60   |
| 8   | AB    | 2763 | G    | C8-N9-C4    | -5.01 | 104.39      | 106.40   |
| 8   | CB    | 559  | G    | N9-C4-C5    | -5.01 | 103.39      | 105.40   |
| 8   | CB    | 1820 | U    | C5'-C4'-O4' | -5.01 | 103.08      | 109.10   |
| 8   | CB    | 2688 | G    | C4'-C3'-C2' | -5.01 | 97.59       | 102.60   |
| 33  | DA    | 403  | C    | C3'-C2'-C1' | -5.01 | 97.49       | 101.50   |
| 33  | BA    | 335  | C    | C4'-C3'-C2' | -5.01 | 97.59       | 102.60   |
| 8   | CB    | 108  | G    | N9-C1'-C2'  | -5.01 | 106.49      | 112.00   |
| 8   | CB    | 1990 | C    | O4'-C1'-N1  | 5.01  | 112.21      | 108.20   |
| 33  | DA    | 948  | C    | O4'-C1'-N1  | 5.01  | 112.21      | 108.20   |
| 8   | AB    | 260  | G    | C8-N9-C4    | -5.01 | 104.39      | 106.40   |
| 8   | AB    | 982  | C    | C2-N3-C4    | 5.01  | 122.41      | 119.90   |
| 33  | BA    | 74   | A    | C1'-O4'-C4' | -5.01 | 105.89      | 109.90   |
| 8   | CB    | 2832 | U    | P-O3'-C3'   | 5.01  | 125.71      | 119.70   |
| 33  | DA    | 806  | C    | N3-C2-O2    | -5.01 | 118.39      | 121.90   |
| 33  | BA    | 1468 | A    | P-O3'-C3'   | -5.01 | 113.69      | 119.70   |
| 8   | CB    | 102  | U    | O4'-C1'-N1  | -5.01 | 104.19      | 108.20   |
| 33  | DA    | 1118 | U    | O4'-C1'-N1  | 5.01  | 112.21      | 108.20   |
| 33  | DA    | 1503 | A    | C8-N9-C4    | 5.01  | 107.80      | 105.80   |
| 8   | AB    | 1721 | G    | C3'-C2'-C1' | -5.01 | 97.49       | 101.50   |
| 8   | AB    | 1130 | U    | C3'-C2'-C1' | -5.01 | 97.49       | 101.50   |

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| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 8   | AB    | 2719 | G    | P-O3'-C3'   | -5.01 | 113.69      | 119.70   |
| 8   | CB    | 1629 | U    | O5'-C5'-C4' | -5.01 | 102.19      | 111.70   |
| 8   | CB    | 2436 | G    | N3-C4-C5    | -5.01 | 126.10      | 128.60   |
| 33  | DA    | 964  | A    | O4'-C1'-N9  | -5.01 | 104.19      | 108.20   |
| 8   | AB    | 1336 | A    | P-O3'-C3'   | -5.00 | 113.69      | 119.70   |
| 8   | CB    | 2252 | G    | N3-C4-N9    | -5.00 | 123.00      | 126.00   |
| 33  | DA    | 394  | G    | O4'-C1'-N9  | 5.00  | 112.20      | 108.20   |
| 33  | BA    | 220  | G    | C3'-C2'-C1' | -5.00 | 97.50       | 101.50   |
| 7   | CA    | 43   | C    | O4'-C1'-N1  | 5.00  | 112.20      | 108.20   |
| 8   | CB    | 234  | U    | O4'-C1'-N1  | 5.00  | 112.20      | 108.20   |
| 8   | CB    | 1823 | G    | C3'-C2'-C1' | -5.00 | 97.50       | 101.50   |
| 8   | CB    | 2458 | G    | N1-C6-O6    | 5.00  | 122.90      | 119.90   |
| 33  | DA    | 1093 | A    | C4'-C3'-C2' | -5.00 | 97.60       | 102.60   |
| 33  | DA    | 1450 | U    | P-O3'-C3'   | 5.00  | 125.70      | 119.70   |
| 8   | AB    | 1938 | A    | P-O3'-C3'   | 5.00  | 125.70      | 119.70   |
| 8   | AB    | 2428 | G    | N1-C6-O6    | 5.00  | 122.90      | 119.90   |
| 33  | BA    | 720  | C    | N3-C2-O2    | -5.00 | 118.40      | 121.90   |
| 33  | BA    | 864  | A    | O4'-C1'-N9  | 5.00  | 112.20      | 108.20   |
| 8   | CB    | 184  | C    | P-O3'-C3'   | -5.00 | 113.70      | 119.70   |
| 8   | CB    | 779  | U    | N3-C4-O4    | 5.00  | 122.90      | 119.40   |
| 8   | CB    | 2624 | G    | C3'-C2'-C1' | -5.00 | 97.50       | 101.50   |
| 33  | DA    | 1534 | A    | O4'-C1'-N9  | 5.00  | 112.20      | 108.20   |

There are no chirality outliers.

All (30) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 13  | AG    | 109 | SER  | Peptide |
| 16  | AJ    | 9   | GLU  | Peptide |
| 18  | AL    | 53  | GLY  | Peptide |
| 19  | AM    | 88  | ASN  | Peptide |
| 22  | AP    | 46  | VAL  | Peptide |
| 22  | AP    | 70  | GLU  | Peptide |
| 22  | AP    | 71  | ARG  | Peptide |
| 32  | AZ    | 34  | LEU  | Peptide |
| 1   | C0    | 26  | SER  | Peptide |
| 1   | C0    | 28  | SER  | Peptide |
| 4   | C3    | 32  | LEU  | Peptide |
| 4   | C3    | 50  | SER  | Peptide |
| 11  | CE    | 145 | ASP  | Peptide |
| 11  | CE    | 27  | LEU  | Peptide |
| 11  | CE    | 40  | ARG  | Peptide |

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| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 14  | CH    | 37  | VAL  | Peptide |
| 16  | CJ    | 9   | GLU  | Peptide |
| 18  | CL    | 57  | LEU  | Peptide |
| 20  | CN    | 10  | LEU  | Peptide |
| 20  | CN    | 7   | GLY  | Peptide |
| 22  | CP    | 46  | VAL  | Peptide |
| 22  | CP    | 70  | GLU  | Peptide |
| 22  | CP    | 71  | ARG  | Peptide |
| 22  | CP    | 85  | VAL  | Peptide |
| 24  | CR    | 75  | VAL  | Peptide |
| 25  | CS    | 108 | SER  | Peptide |
| 25  | CS    | 93  | ALA  | Peptide |
| 26  | CT    | 8   | LEU  | Peptide |
| 30  | CX    | 28  | LEU  | Peptide |
| 32  | CZ    | 27  | THR  | Peptide |

## 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A0    | 444   | 0        | 461      | 86      | 0            |
| 1   | C0    | 444   | 0        | 461      | 112     | 0            |
| 2   | A1    | 441   | 0        | 485      | 104     | 0            |
| 2   | C1    | 441   | 0        | 485      | 89      | 0            |
| 3   | A2    | 377   | 0        | 418      | 106     | 0            |
| 3   | C2    | 377   | 0        | 418      | 104     | 0            |
| 4   | A3    | 504   | 0        | 574      | 171     | 0            |
| 4   | C3    | 504   | 0        | 574      | 137     | 0            |
| 5   | A4    | 302   | 0        | 340      | 104     | 0            |
| 5   | C4    | 302   | 0        | 340      | 99      | 0            |
| 6   | A5    | 134   | 0        | 153      | 17      | 0            |
| 7   | AA    | 2507  | 0        | 1270     | 277     | 0            |
| 7   | CA    | 2507  | 0        | 1270     | 303     | 0            |
| 8   | AB    | 60995 | 0        | 30679    | 6966    | 0            |
| 8   | CB    | 60995 | 0        | 30678    | 7146    | 0            |
| 9   | AC    | 2054  | 0        | 2122     | 607     | 0            |
| 9   | CC    | 2054  | 0        | 2122     | 625     | 0            |
| 10  | AD    | 1565  | 0        | 1616     | 443     | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 10  | CD    | 1565  | 0        | 1616     | 508     | 0            |
| 11  | AE    | 1552  | 0        | 1619     | 432     | 0            |
| 11  | CE    | 1552  | 0        | 1619     | 401     | 0            |
| 12  | AF    | 1420  | 0        | 1460     | 177     | 0            |
| 12  | CF    | 1420  | 0        | 1460     | 216     | 0            |
| 13  | AG    | 1323  | 0        | 1374     | 196     | 0            |
| 13  | CG    | 1323  | 0        | 1374     | 226     | 0            |
| 14  | AH    | 1111  | 0        | 1148     | 160     | 0            |
| 14  | CH    | 1111  | 0        | 1148     | 191     | 0            |
| 15  | AI    | 1032  | 0        | 1088     | 100     | 0            |
| 15  | CI    | 1032  | 0        | 1088     | 131     | 0            |
| 16  | AJ    | 1113  | 0        | 1147     | 293     | 0            |
| 16  | CJ    | 1113  | 0        | 1147     | 307     | 0            |
| 17  | AK    | 931   | 0        | 1000     | 161     | 0            |
| 17  | CK    | 931   | 0        | 1000     | 159     | 0            |
| 18  | AL    | 1053  | 0        | 1129     | 403     | 0            |
| 18  | CL    | 1053  | 0        | 1129     | 336     | 0            |
| 19  | AM    | 1074  | 0        | 1157     | 276     | 0            |
| 19  | CM    | 1074  | 0        | 1157     | 294     | 0            |
| 20  | AN    | 1008  | 0        | 1045     | 219     | 0            |
| 20  | CN    | 1008  | 0        | 1045     | 248     | 0            |
| 21  | AO    | 900   | 0        | 935      | 206     | 0            |
| 21  | CO    | 900   | 0        | 935      | 247     | 0            |
| 22  | AP    | 917   | 0        | 965      | 248     | 0            |
| 22  | CP    | 917   | 0        | 965      | 243     | 0            |
| 23  | AQ    | 947   | 0        | 1022     | 269     | 0            |
| 23  | CQ    | 947   | 0        | 1022     | 284     | 0            |
| 24  | AR    | 816   | 0        | 839      | 236     | 0            |
| 24  | CR    | 816   | 0        | 839      | 308     | 0            |
| 25  | AS    | 857   | 0        | 922      | 172     | 0            |
| 25  | CS    | 857   | 0        | 922      | 200     | 0            |
| 26  | AT    | 778   | 0        | 840      | 178     | 0            |
| 26  | CT    | 778   | 0        | 840      | 173     | 0            |
| 27  | AU    | 780   | 0        | 834      | 183     | 0            |
| 27  | CU    | 780   | 0        | 834      | 172     | 0            |
| 28  | AV    | 753   | 0        | 780      | 100     | 0            |
| 28  | CV    | 753   | 0        | 780      | 90      | 0            |
| 29  | AW    | 634   | 0        | 656      | 205     | 0            |
| 29  | CW    | 634   | 0        | 656      | 226     | 0            |
| 30  | AX    | 509   | 0        | 543      | 111     | 0            |
| 30  | CX    | 509   | 0        | 543      | 123     | 0            |
| 31  | AY    | 449   | 0        | 491      | 66      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 31  | CY    | 449   | 0        | 491      | 84      | 0            |
| 32  | AZ    | 549   | 0        | 552      | 174     | 0            |
| 32  | CZ    | 549   | 0        | 552      | 152     | 0            |
| 33  | BA    | 32831 | 0        | 16522    | 3630    | 0            |
| 33  | DA    | 32831 | 0        | 16521    | 4106    | 0            |
| 34  | BB    | 1705  | 0        | 1732     | 245     | 0            |
| 34  | DB    | 1705  | 0        | 1732     | 220     | 0            |
| 35  | BC    | 1625  | 0        | 1699     | 214     | 0            |
| 35  | DC    | 1625  | 0        | 1699     | 274     | 0            |
| 36  | BD    | 1643  | 0        | 1710     | 284     | 0            |
| 36  | DD    | 1643  | 0        | 1710     | 280     | 0            |
| 37  | BE    | 1106  | 0        | 1148     | 176     | 0            |
| 37  | DE    | 1106  | 0        | 1148     | 200     | 0            |
| 38  | BF    | 818   | 0        | 808      | 114     | 0            |
| 38  | DF    | 818   | 0        | 808      | 143     | 0            |
| 39  | BG    | 1175  | 0        | 1230     | 116     | 0            |
| 39  | DG    | 1197  | 0        | 1246     | 145     | 0            |
| 40  | BH    | 979   | 0        | 1034     | 141     | 0            |
| 40  | DH    | 979   | 0        | 1034     | 156     | 0            |
| 41  | BI    | 1022  | 0        | 1070     | 141     | 0            |
| 41  | DI    | 1022  | 0        | 1070     | 158     | 0            |
| 42  | BJ    | 787   | 0        | 828      | 99      | 0            |
| 42  | DJ    | 787   | 0        | 828      | 129     | 0            |
| 43  | BK    | 877   | 0        | 887      | 127     | 0            |
| 43  | DK    | 877   | 0        | 887      | 134     | 0            |
| 44  | BL    | 955   | 0        | 1019     | 145     | 0            |
| 44  | DL    | 955   | 0        | 1019     | 149     | 0            |
| 45  | BM    | 884   | 0        | 944      | 125     | 0            |
| 45  | DM    | 877   | 0        | 937      | 107     | 0            |
| 46  | BN    | 774   | 0        | 827      | 138     | 0            |
| 46  | DN    | 774   | 0        | 827      | 127     | 0            |
| 47  | BO    | 716   | 0        | 742      | 96      | 0            |
| 47  | DO    | 716   | 0        | 742      | 106     | 0            |
| 48  | BP    | 649   | 0        | 666      | 109     | 0            |
| 48  | DP    | 639   | 0        | 656      | 121     | 0            |
| 49  | BQ    | 649   | 0        | 691      | 70      | 0            |
| 49  | DQ    | 657   | 0        | 702      | 91      | 0            |
| 50  | BR    | 456   | 0        | 478      | 75      | 0            |
| 50  | DR    | 456   | 0        | 478      | 100     | 0            |
| 51  | BS    | 638   | 0        | 665      | 112     | 0            |
| 51  | DS    | 645   | 0        | 675      | 97      | 0            |
| 52  | BT    | 665   | 0        | 714      | 85      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 52  | DT    | 665   | 0        | 714      | 91      | 0            |
| 53  | BU    | 426   | 0        | 449      | 81      | 0            |
| 53  | DU    | 426   | 0        | 449      | 67      | 0            |
| 54  | AB    | 109   | 0        | 0        | 0       | 0            |
| 54  | AE    | 1     | 0        | 0        | 0       | 0            |
| 54  | BA    | 58    | 0        | 0        | 0       | 0            |
| 54  | BN    | 1     | 0        | 0        | 0       | 0            |
| 54  | BT    | 1     | 0        | 0        | 0       | 0            |
| 54  | CB    | 109   | 0        | 0        | 0       | 0            |
| 54  | CC    | 1     | 0        | 0        | 0       | 0            |
| 54  | CL    | 1     | 0        | 0        | 0       | 0            |
| 54  | DA    | 61    | 0        | 0        | 0       | 0            |
| 54  | DN    | 1     | 0        | 0        | 0       | 0            |
| 55  | A2    | 2     | 0        | 0        | 2       | 0            |
| 55  | AB    | 489   | 0        | 0        | 65      | 0            |
| 55  | AC    | 3     | 0        | 0        | 1       | 0            |
| 55  | AD    | 1     | 0        | 0        | 0       | 0            |
| 55  | AE    | 3     | 0        | 0        | 2       | 0            |
| 55  | AJ    | 2     | 0        | 0        | 2       | 0            |
| 55  | AL    | 3     | 0        | 0        | 1       | 0            |
| 55  | BA    | 284   | 0        | 0        | 26      | 0            |
| 55  | BE    | 3     | 0        | 0        | 0       | 0            |
| 55  | BI    | 2     | 0        | 0        | 0       | 0            |
| 55  | BK    | 1     | 0        | 0        | 0       | 0            |
| 55  | BL    | 2     | 0        | 0        | 0       | 0            |
| 55  | BN    | 3     | 0        | 0        | 0       | 0            |
| 55  | BP    | 1     | 0        | 0        | 0       | 0            |
| 55  | BT    | 2     | 0        | 0        | 0       | 0            |
| 55  | C0    | 1     | 0        | 0        | 0       | 0            |
| 55  | C2    | 2     | 0        | 0        | 0       | 0            |
| 55  | CB    | 485   | 0        | 0        | 65      | 0            |
| 55  | CC    | 3     | 0        | 0        | 0       | 0            |
| 55  | CD    | 1     | 0        | 0        | 0       | 0            |
| 55  | CE    | 1     | 0        | 0        | 0       | 0            |
| 55  | CJ    | 2     | 0        | 0        | 0       | 0            |
| 55  | CK    | 1     | 0        | 0        | 0       | 0            |
| 55  | CL    | 5     | 0        | 0        | 1       | 0            |
| 55  | CN    | 3     | 0        | 0        | 2       | 0            |
| 55  | CP    | 1     | 0        | 0        | 0       | 0            |
| 55  | CQ    | 1     | 0        | 0        | 0       | 0            |
| 55  | CT    | 2     | 0        | 0        | 0       | 0            |
| 55  | CU    | 1     | 0        | 0        | 2       | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 55  | DA    | 293    | 0        | 0        | 18      | 0            |
| 55  | DD    | 1      | 0        | 0        | 0       | 0            |
| 55  | DE    | 2      | 0        | 0        | 0       | 0            |
| 55  | DG    | 1      | 0        | 0        | 0       | 0            |
| 55  | DL    | 4      | 0        | 0        | 0       | 0            |
| 55  | DN    | 2      | 0        | 0        | 1       | 0            |
| 55  | DP    | 1      | 0        | 0        | 0       | 0            |
| 55  | DT    | 3      | 0        | 0        | 2       | 0            |
| All | All   | 284264 | 0        | 190919   | 37666   | 0            |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 80.

All (37666) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2822:G:OP2   | 20:CN:2:ARG:HB3    | 1.29                     | 1.26              |
| 33:DA:585:G:H5'   | 33:DA:585:G:C8     | 1.76                     | 1.21              |
| 33:DA:235:C:H2'   | 33:DA:236:A:C8     | 1.77                     | 1.19              |
| 1:C0:27:LEU:HG    | 8:CB:2886:A:C6     | 1.77                     | 1.19              |
| 23:CQ:49:ARG:HG3  | 24:CR:77:PHE:CZ    | 1.79                     | 1.18              |
| 23:CQ:39:ILE:O    | 23:CQ:43:GLN:HB3   | 1.40                     | 1.18              |
| 3:A2:19:ARG:HG3   | 3:A2:20:ALA:H      | 1.09                     | 1.17              |
| 8:AB:1359:A:C2    | 8:AB:1360:G:H1'    | 1.76                     | 1.17              |
| 33:BA:235:C:H2'   | 33:BA:236:A:C8     | 1.79                     | 1.17              |
| 8:CB:1813:G:H2'   | 8:CB:1814:G:H5''   | 1.24                     | 1.17              |
| 33:DA:1106:G:H5'  | 33:DA:1106:G:C8    | 1.79                     | 1.17              |
| 21:AO:25:ARG:HG3  | 21:AO:25:ARG:HH11  | 1.07                     | 1.17              |
| 2:C1:47:ILE:HG22  | 2:C1:48:TYR:H      | 1.08                     | 1.17              |
| 8:AB:1813:G:H2'   | 8:AB:1814:G:H5''   | 1.24                     | 1.16              |
| 9:AC:20:ASN:HB2   | 9:AC:202:ARG:NH1   | 1.61                     | 1.16              |
| 8:CB:322:A:H5'    | 8:CB:340:A:H1'     | 1.24                     | 1.16              |
| 20:CN:55:ALA:HA   | 20:CN:80:PHE:HD2   | 1.09                     | 1.16              |
| 8:AB:657:U:H2'    | 8:AB:658:U:C6      | 1.80                     | 1.16              |
| 1:C0:29:VAL:HG22  | 1:C0:32:THR:HG23   | 1.27                     | 1.15              |
| 8:CB:2305:U:H5''  | 12:CF:130:GLY:HA3  | 1.24                     | 1.15              |
| 43:DK:126:ARG:HG2 | 43:DK:126:ARG:HH11 | 0.99                     | 1.15              |
| 33:DA:599:C:H4'   | 40:DH:121:GLY:HA3  | 1.23                     | 1.15              |
| 33:DA:785:G:H2'   | 33:DA:786:G:H5''   | 1.25                     | 1.15              |
| 17:CK:108:ARG:HG2 | 17:CK:108:ARG:HH11 | 1.11                     | 1.15              |
| 21:CO:65:THR:HB   | 21:CO:70:ALA:HB2   | 1.28                     | 1.15              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BI:44:ARG:HG3  | 41:BI:44:ARG:HH11  | 1.02                     | 1.14              |
| 9:CC:20:ASN:HB2   | 9:CC:202:ARG:HH11  | 1.09                     | 1.14              |
| 16:CJ:10:THR:HG21 | 16:CJ:50:THR:HB    | 1.29                     | 1.14              |
| 14:AH:6:LEU:HD13  | 14:AH:15:LEU:HA    | 1.28                     | 1.14              |
| 33:DA:674:G:H2'   | 33:DA:675:A:H8     | 0.98                     | 1.14              |
| 8:AB:553:G:H2'    | 8:AB:554:U:H5'     | 1.20                     | 1.14              |
| 14:AH:26:ALA:HB1  | 14:AH:31:VAL:HG23  | 1.20                     | 1.14              |
| 22:AP:1:SER:HB2   | 22:AP:5:LYS:HG2    | 1.15                     | 1.14              |
| 9:CC:20:ASN:HB2   | 9:CC:202:ARG:NH1   | 1.63                     | 1.13              |
| 19:AM:50:ARG:HA   | 19:AM:50:ARG:CZ    | 1.78                     | 1.13              |
| 24:AR:84:ARG:HH11 | 24:AR:84:ARG:HG3   | 1.01                     | 1.13              |
| 8:CB:2014:A:H2'   | 8:CB:2015:A:C8     | 1.82                     | 1.13              |
| 12:AF:28:PRO:HB2  | 12:AF:168:LEU:HD11 | 1.30                     | 1.13              |
| 33:BA:553:A:H2'   | 33:BA:554:A:C8     | 1.81                     | 1.13              |
| 19:CM:105:MET:HG3 | 19:CM:106:ASP:H    | 1.12                     | 1.13              |
| 8:AB:2014:A:H2'   | 8:AB:2015:A:C8     | 1.83                     | 1.13              |
| 8:CB:1359:A:C2    | 8:CB:1360:G:H1'    | 1.82                     | 1.12              |
| 8:AB:2052:A:H4'   | 10:AD:149:ASN:N    | 1.63                     | 1.12              |
| 33:BA:843:U:H3'   | 33:BA:844:G:H5'    | 1.30                     | 1.12              |
| 33:DA:585:G:H5'   | 33:DA:585:G:H8     | 0.98                     | 1.12              |
| 16:AJ:35:ARG:HH22 | 16:AJ:41:LYS:HB2   | 1.11                     | 1.12              |
| 53:BU:36:PHE:HB3  | 53:BU:40:PRO:HD3   | 1.26                     | 1.12              |
| 14:CH:101:ASP:HA  | 14:CH:104:THR:HB   | 1.27                     | 1.12              |
| 18:CL:92:LEU:HA   | 18:CL:96:LYS:CB    | 1.78                     | 1.12              |
| 23:CQ:47:ARG:NH1  | 23:CQ:50:ARG:HG3   | 1.64                     | 1.11              |
| 33:BA:553:A:H2'   | 33:BA:554:A:H8     | 0.99                     | 1.11              |
| 20:CN:56:LYS:HD3  | 20:CN:57:THR:H     | 1.11                     | 1.11              |
| 8:AB:2693:G:H2'   | 8:AB:2694:G:H5''   | 1.18                     | 1.11              |
| 17:AK:108:ARG:HG2 | 17:AK:108:ARG:HH11 | 1.11                     | 1.11              |
| 32:AZ:17:SER:HB2  | 32:AZ:21:VAL:HG23  | 1.23                     | 1.11              |
| 33:DA:674:G:H2'   | 33:DA:675:A:C8     | 1.85                     | 1.11              |
| 17:CK:71:ARG:HB3  | 17:CK:72:PRO:HD2   | 1.29                     | 1.10              |
| 2:A1:47:ILE:HG22  | 2:A1:48:TYR:H      | 1.15                     | 1.10              |
| 27:CU:78:LYS:HD2  | 27:CU:96:LYS:HG3   | 1.27                     | 1.10              |
| 44:DL:113:ARG:HG2 | 44:DL:118:VAL:HB   | 1.27                     | 1.10              |
| 10:AD:62:LYS:HE2  | 10:AD:63:PRO:HD3   | 1.19                     | 1.10              |
| 11:AE:147:LEU:HB3 | 11:AE:183:PHE:HD1  | 0.95                     | 1.10              |
| 16:AJ:38:GLY:HA3  | 16:AJ:41:LYS:HE3   | 1.20                     | 1.10              |
| 16:AJ:45:THR:HG23 | 23:AQ:63:ARG:HE    | 1.09                     | 1.10              |
| 46:BN:64:ARG:HG3  | 46:BN:64:ARG:HH11  | 1.14                     | 1.10              |
| 7:AA:114:C:H2'    | 7:AA:115:A:H8      | 1.12                     | 1.10              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1216:G:C5    | 8:AB:1217:U:H5     | 1.68                     | 1.10              |
| 43:BK:68:ARG:HG3  | 43:BK:68:ARG:HH11  | 1.08                     | 1.10              |
| 8:CB:657:U:H2'    | 8:CB:658:U:C6      | 1.87                     | 1.10              |
| 8:AB:2591:C:H2'   | 8:AB:2592:G:H8     | 1.17                     | 1.09              |
| 9:AC:20:ASN:HB2   | 9:AC:202:ARG:HH11  | 1.06                     | 1.09              |
| 44:BL:29:LYS:H    | 44:BL:81:ILE:HG22  | 1.15                     | 1.09              |
| 2:C1:12:SER:HA    | 2:C1:50:GLU:HA     | 1.20                     | 1.09              |
| 33:DA:714:G:N2    | 33:DA:777:A:H1'    | 1.65                     | 1.09              |
| 14:CH:3:VAL:HB    | 14:CH:37:VAL:HG11  | 1.29                     | 1.09              |
| 8:AB:41:C:H2'     | 8:AB:42:A:O4'      | 1.51                     | 1.09              |
| 8:CB:2693:G:H2'   | 8:CB:2694:G:H5''   | 1.18                     | 1.09              |
| 33:DA:15:G:H2'    | 33:DA:16:A:H8      | 1.14                     | 1.09              |
| 33:DA:484:G:H4'   | 33:DA:485:U:H5'    | 1.35                     | 1.09              |
| 19:AM:105:MET:HG3 | 19:AM:106:ASP:H    | 1.13                     | 1.09              |
| 8:CB:398:C:H3'    | 32:CZ:49:ARG:HH22  | 1.14                     | 1.09              |
| 9:CC:51:ARG:O     | 9:CC:51:ARG:HD3    | 1.52                     | 1.09              |
| 8:AB:2052:A:H4'   | 10:AD:149:ASN:H    | 0.94                     | 1.08              |
| 22:AP:62:LYS:HA   | 22:AP:74:GLN:NE2   | 1.69                     | 1.08              |
| 11:CE:148:ILE:O   | 11:CE:167:VAL:HG11 | 1.53                     | 1.08              |
| 18:CL:34:GLY:HA3  | 24:CR:85:LYS:HD3   | 1.33                     | 1.08              |
| 8:AB:2636:C:H4'   | 10:AD:80:TRP:CE2   | 1.88                     | 1.08              |
| 11:AE:147:LEU:HB3 | 11:AE:183:PHE:CD1  | 1.87                     | 1.08              |
| 19:CM:50:ARG:CZ   | 19:CM:50:ARG:HA    | 1.82                     | 1.08              |
| 33:DA:1474:U:H2'  | 33:DA:1475:G:H5''  | 1.28                     | 1.08              |
| 3:A2:5:PHE:HE2    | 3:A2:7:PRO:HB3     | 1.11                     | 1.08              |
| 8:AB:1848:A:H2'   | 8:AB:1849:G:H8     | 1.13                     | 1.08              |
| 43:BK:12:ARG:HG3  | 43:BK:12:ARG:HH11  | 1.13                     | 1.08              |
| 5:C4:1:MET:HG3    | 5:C4:2:LYS:H       | 0.98                     | 1.08              |
| 33:DA:373:A:H8    | 33:DA:373:A:H5'    | 1.19                     | 1.08              |
| 34:DB:130:LYS:HA  | 34:DB:133:ALA:HB3  | 1.34                     | 1.08              |
| 8:AB:1056:G:H4'   | 8:AB:1086:A:H8     | 1.16                     | 1.08              |
| 8:AB:2678:C:H2'   | 8:AB:2679:A:C8     | 1.88                     | 1.08              |
| 17:AK:71:ARG:HB3  | 17:AK:72:PRO:HD2   | 1.30                     | 1.08              |
| 24:CR:89:HIS:CG   | 24:CR:90:ARG:H     | 1.71                     | 1.08              |
| 33:DA:434:U:H2'   | 33:DA:435:A:C8     | 1.88                     | 1.08              |
| 35:DC:11:LEU:HB3  | 35:DC:17:TRP:HE1   | 1.14                     | 1.08              |
| 8:AB:1804:C:H4'   | 9:AC:247:TRP:HZ2   | 1.18                     | 1.07              |
| 9:AC:144:GLU:HG2  | 9:AC:150:GLY:HA2   | 1.34                     | 1.07              |
| 19:AM:59:ARG:HD2  | 19:AM:59:ARG:H     | 1.19                     | 1.07              |
| 32:AZ:6:HIS:CG    | 32:AZ:7:PRO:HD2    | 1.89                     | 1.07              |
| 8:CB:1216:G:C5    | 8:CB:1217:U:H5     | 1.71                     | 1.07              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:CD:33:ARG:HD3   | 10:CD:89:GLU:CD    | 1.72                     | 1.07              |
| 33:BA:900:A:H2'    | 33:BA:901:A:H8     | 1.19                     | 1.07              |
| 8:CB:1258:U:H2'    | 8:CB:1259:G:H8     | 1.11                     | 1.07              |
| 43:DK:92:ARG:HG3   | 43:DK:92:ARG:HH11  | 1.01                     | 1.07              |
| 10:CD:101:PHE:CZ   | 10:CD:180:VAL:HG11 | 1.90                     | 1.07              |
| 11:CE:139:LYS:HA   | 11:CE:143:LEU:HD21 | 1.28                     | 1.07              |
| 8:AB:2393:U:H4'    | 18:AL:62:PRO:HA    | 1.35                     | 1.07              |
| 8:CB:1804:C:H4'    | 9:CC:247:TRP:HZ2   | 1.16                     | 1.07              |
| 8:CB:2591:C:H2'    | 8:CB:2592:G:C8     | 1.89                     | 1.07              |
| 29:CW:43:LYS:HB3   | 29:CW:78:PHE:HB3   | 1.34                     | 1.07              |
| 43:DK:16:SER:HB2   | 43:DK:77:GLY:O     | 1.54                     | 1.07              |
| 39:BG:130:LYS:HG2  | 39:BG:131:GLY:H    | 1.17                     | 1.07              |
| 50:BR:66:LEU:HB2   | 50:BR:67:LEU:HD12  | 1.33                     | 1.07              |
| 9:CC:144:GLU:HG2   | 9:CC:150:GLY:HA2   | 1.37                     | 1.07              |
| 13:CG:10:VAL:HG13  | 13:CG:14:VAL:HB    | 1.35                     | 1.07              |
| 24:CR:18:GLN:HB3   | 24:CR:99:THR:HA    | 1.36                     | 1.07              |
| 35:DC:105:VAL:HG12 | 35:DC:108:PRO:HD3  | 1.37                     | 1.07              |
| 8:AB:1716:U:H2'    | 8:AB:1717:A:H8     | 1.20                     | 1.06              |
| 8:AB:2591:C:H2'    | 8:AB:2592:G:C8     | 1.90                     | 1.06              |
| 11:AE:9:GLN:HB2    | 11:AE:120:VAL:HG13 | 1.36                     | 1.06              |
| 8:CB:41:C:H2'      | 8:CB:42:A:O4'      | 1.55                     | 1.06              |
| 11:CE:136:GLN:HA   | 11:CE:139:LYS:HB3  | 1.24                     | 1.06              |
| 39:DG:2:ARG:HB3    | 39:DG:2:ARG:HH11   | 1.18                     | 1.06              |
| 21:AO:1:MET:HE2    | 21:AO:3:LYS:HB2    | 1.37                     | 1.06              |
| 23:AQ:83:LYS:HA    | 23:AQ:89:ILE:HD12  | 1.29                     | 1.06              |
| 33:BA:683:G:H21    | 43:BK:39:ASN:HA    | 1.18                     | 1.06              |
| 33:BA:967:C:H3'    | 33:BA:968:A:H5''   | 1.36                     | 1.06              |
| 33:BA:1399:C:H4'   | 33:BA:1400:C:H5''  | 1.36                     | 1.06              |
| 3:C2:21:ARG:HH21   | 8:CB:466:A:H5''    | 1.17                     | 1.06              |
| 23:CQ:70:GLN:HG3   | 23:CQ:71:ASN:H     | 1.15                     | 1.06              |
| 33:DA:669:G:H8     | 33:DA:669:G:H5'    | 1.16                     | 1.06              |
| 41:DI:113:LYS:HA   | 41:DI:120:ALA:HA   | 1.38                     | 1.06              |
| 4:A3:24:LYS:HB3    | 4:A3:45:PRO:HG3    | 1.36                     | 1.06              |
| 8:AB:1258:U:H2'    | 8:AB:1259:G:H8     | 1.12                     | 1.06              |
| 8:AB:1613:G:H2'    | 8:AB:1617:C:H42    | 1.17                     | 1.06              |
| 8:AB:1752:C:N4     | 8:AB:1756:G:H1     | 1.52                     | 1.06              |
| 8:AB:2484:G:H1'    | 19:AM:119:LEU:HD12 | 1.32                     | 1.06              |
| 33:BA:15:G:H2'     | 33:BA:16:A:H8      | 1.14                     | 1.06              |
| 8:CB:1848:A:H2'    | 8:CB:1849:G:H8     | 1.10                     | 1.06              |
| 8:CB:2205:A:H2'    | 8:CB:2206:C:H6     | 1.16                     | 1.06              |
| 8:CB:2391:G:H22    | 8:CB:2424:C:H2'    | 1.18                     | 1.06              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:CC:68:ARG:HD2   | 9:CC:127:ASN:HD21  | 1.10                     | 1.06              |
| 12:CF:28:PRO:HB2  | 12:CF:168:LEU:HD11 | 1.30                     | 1.06              |
| 33:DA:434:U:H2'   | 33:DA:435:A:H8     | 1.10                     | 1.06              |
| 43:DK:124:LYS:HA  | 53:DU:33:ARG:HH12  | 1.17                     | 1.06              |
| 8:AB:2270:A:H4'   | 29:AW:18:LYS:HG3   | 1.31                     | 1.06              |
| 34:BB:68:PHE:HB2  | 34:BB:90:PHE:HB2   | 1.38                     | 1.06              |
| 33:DA:1226:C:H2'  | 45:DM:102:LYS:HA   | 1.34                     | 1.06              |
| 8:AB:1784:A:H4'   | 8:AB:1785:A:H5''   | 1.31                     | 1.06              |
| 8:CB:1752:C:N4    | 8:CB:1756:G:H1     | 1.50                     | 1.06              |
| 37:DE:75:LEU:HD21 | 37:DE:119:VAL:HG13 | 1.38                     | 1.06              |
| 48:BP:61:VAL:HA   | 48:BP:65:ALA:HB3   | 1.30                     | 1.05              |
| 7:CA:47:C:H5''    | 21:CO:97:PHE:HZ    | 1.17                     | 1.05              |
| 9:CC:220:ARG:NE   | 9:CC:220:ARG:HA    | 1.72                     | 1.05              |
| 33:DA:1314:C:OP2  | 51:DS:5:LYS:HG2    | 1.56                     | 1.05              |
| 8:AB:1353:A:H2'   | 8:AB:1354:A:H8     | 1.15                     | 1.05              |
| 19:AM:49:ALA:HB1  | 19:AM:116:ALA:HB1  | 1.33                     | 1.05              |
| 33:BA:872:A:H4'   | 33:BA:873:A:OP1    | 1.54                     | 1.05              |
| 8:CB:2205:A:H2'   | 8:CB:2206:C:C6     | 1.90                     | 1.05              |
| 25:CS:110:ARG:HG3 | 25:CS:110:ARG:HH11 | 1.18                     | 1.05              |
| 33:DA:920:U:H2'   | 33:DA:921:U:C6     | 1.92                     | 1.05              |
| 8:AB:1216:G:C6    | 8:AB:1217:U:H5     | 1.75                     | 1.05              |
| 9:AC:68:ARG:HD2   | 9:AC:127:ASN:HD21  | 1.12                     | 1.05              |
| 33:BA:662:U:H2'   | 33:BA:663:A:C8     | 1.92                     | 1.05              |
| 3:C2:5:PHE:HE2    | 3:C2:7:PRO:HB3     | 1.15                     | 1.05              |
| 8:CB:666:A:C4     | 8:CB:667:U:H5      | 1.73                     | 1.05              |
| 8:CB:1028:A:H2'   | 8:CB:1029:A:H8     | 1.17                     | 1.05              |
| 8:CB:2239:G:H5'   | 9:CC:246:PRO:HG2   | 1.37                     | 1.05              |
| 33:DA:1106:G:H5'  | 33:DA:1106:G:H8    | 0.90                     | 1.05              |
| 8:AB:351:C:H2'    | 8:AB:352:A:H8      | 1.22                     | 1.05              |
| 8:AB:608:A:H2'    | 8:AB:609:A:C8      | 1.91                     | 1.05              |
| 8:AB:666:A:C4     | 8:AB:667:U:H5      | 1.74                     | 1.05              |
| 8:AB:2095:A:H8    | 8:AB:2095:A:H5'    | 1.20                     | 1.05              |
| 8:CB:2222:C:H2'   | 8:CB:2223:G:H8     | 1.14                     | 1.05              |
| 8:CB:2736:A:H2'   | 8:CB:2737:G:C8     | 1.91                     | 1.05              |
| 18:CL:92:LEU:CA   | 18:CL:96:LYS:HB2   | 1.85                     | 1.05              |
| 19:CM:49:ALA:HB1  | 19:CM:116:ALA:HB1  | 1.36                     | 1.05              |
| 26:CT:68:LYS:HE2  | 26:CT:75:GLY:HA3   | 1.32                     | 1.05              |
| 33:BA:373:A:H5'   | 33:BA:373:A:H8     | 1.20                     | 1.05              |
| 37:DE:53:ARG:HH11 | 37:DE:53:ARG:HB3   | 1.20                     | 1.05              |
| 23:AQ:39:ILE:HD13 | 24:AR:80:ARG:HH12  | 1.21                     | 1.04              |
| 11:AE:3:LEU:HB2   | 11:AE:12:LEU:HB3   | 1.35                     | 1.04              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BB:45:THR:HG23  | 34:BB:200:PRO:HG2 | 1.36                     | 1.04              |
| 50:BR:67:LEU:HD12  | 50:BR:67:LEU:H    | 1.20                     | 1.04              |
| 16:CJ:41:LYS:HZ3   | 16:CJ:46:PRO:HG3  | 1.22                     | 1.04              |
| 30:CX:28:LEU:HD22  | 30:CX:42:LEU:HG   | 1.06                     | 1.04              |
| 9:AC:181:ARG:HA    | 9:AC:263:ASP:HB2  | 1.38                     | 1.04              |
| 21:AO:48:LEU:HD23  | 21:AO:49:VAL:H    | 1.22                     | 1.04              |
| 24:AR:40:MET:SD    | 24:AR:54:VAL:HG21 | 1.98                     | 1.04              |
| 25:AS:11:ARG:HH11  | 25:AS:11:ARG:HG3  | 1.19                     | 1.04              |
| 44:BL:35:ARG:HH12  | 44:BL:75:GLU:HB3  | 1.16                     | 1.04              |
| 10:CD:127:PHE:C    | 10:CD:128:ARG:HD3 | 1.78                     | 1.04              |
| 8:AB:2205:A:H2'    | 8:AB:2206:C:C6    | 1.91                     | 1.04              |
| 21:AO:1:MET:HG2    | 21:AO:2:ASP:H     | 1.16                     | 1.04              |
| 21:CO:19:GLN:HE21  | 29:CW:76:ARG:HG2  | 1.17                     | 1.04              |
| 22:CP:27:VAL:HG21  | 22:CP:84:SER:O    | 1.56                     | 1.04              |
| 33:DA:469:C:H2'    | 33:DA:470:C:H6    | 1.20                     | 1.04              |
| 33:DA:1057:G:H5''  | 35:DC:153:SER:HB2 | 1.40                     | 1.04              |
| 33:DA:1412:C:H2'   | 33:DA:1413:A:H8   | 1.19                     | 1.04              |
| 7:AA:114:C:H2'     | 7:AA:115:A:C8     | 1.92                     | 1.04              |
| 9:AC:51:ARG:HD3    | 9:AC:51:ARG:O     | 1.58                     | 1.04              |
| 33:BA:1129:C:H2'   | 33:BA:1139:G:N7   | 1.72                     | 1.04              |
| 8:CB:1716:U:H2'    | 8:CB:1717:A:H8    | 1.22                     | 1.04              |
| 22:CP:62:LYS:HA    | 22:CP:74:GLN:NE2  | 1.72                     | 1.04              |
| 26:CT:76:ARG:HG2   | 26:CT:77:ARG:H    | 1.23                     | 1.04              |
| 29:CW:23:LYS:HE3   | 29:CW:24:ARG:HB3  | 1.40                     | 1.04              |
| 40:DH:17:GLN:HE21  | 40:DH:71:VAL:HG22 | 1.21                     | 1.04              |
| 8:AB:2575:C:H4'    | 10:AD:149:ASN:HB3 | 1.39                     | 1.03              |
| 23:CQ:87:VAL:HB    | 24:CR:54:VAL:HB   | 1.35                     | 1.03              |
| 32:CZ:36:VAL:HG13  | 32:CZ:42:PRO:HG3  | 1.36                     | 1.03              |
| 8:AB:540:C:H2'     | 8:AB:541:A:H8     | 1.23                     | 1.03              |
| 32:AZ:36:VAL:HG13  | 32:AZ:42:PRO:HG3  | 1.38                     | 1.03              |
| 8:CB:608:A:H2'     | 8:CB:609:A:C8     | 1.93                     | 1.03              |
| 8:CB:2678:C:H2'    | 8:CB:2679:A:C8    | 1.94                     | 1.03              |
| 41:DI:11:ARG:HE    | 41:DI:106:ASP:HB3 | 1.21                     | 1.03              |
| 44:DL:35:ARG:HH21  | 44:DL:36:VAL:HG22 | 1.23                     | 1.03              |
| 11:AE:148:ILE:HA   | 11:AE:185:LYS:O   | 1.56                     | 1.03              |
| 14:AH:130:VAL:HB   | 14:AH:142:VAL:HB  | 1.32                     | 1.03              |
| 18:AL:117:THR:HG23 | 18:AL:118:THR:H   | 1.23                     | 1.03              |
| 17:CK:78:ARG:HE    | 22:CP:72:VAL:HG21 | 1.22                     | 1.03              |
| 19:CM:16:ARG:NH1   | 19:CM:72:PRO:HG2  | 1.73                     | 1.03              |
| 21:CO:48:LEU:H     | 21:CO:48:LEU:HD22 | 1.22                     | 1.03              |
| 28:CV:29:ILE:HD13  | 28:CV:30:ILE:H    | 1.22                     | 1.03              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1400:C:H4'   | 33:BA:1401:G:OP2   | 1.59                     | 1.03              |
| 8:CB:851:C:H2'     | 8:CB:852:U:C6      | 1.92                     | 1.03              |
| 8:CB:1353:A:H2'    | 8:CB:1354:A:H8     | 1.17                     | 1.03              |
| 8:CB:2749:A:H3'    | 8:CB:2750:A:H2'    | 1.40                     | 1.03              |
| 13:CG:97:VAL:HG21  | 13:CG:124:CYS:H    | 1.18                     | 1.03              |
| 19:CM:42:THR:OG1   | 19:CM:45:GLN:HB2   | 1.59                     | 1.03              |
| 20:CN:12:ARG:HD2   | 20:CN:16:HIS:HD2   | 1.21                     | 1.03              |
| 35:DC:10:ARG:HE    | 35:DC:179:ALA:HB3  | 1.20                     | 1.03              |
| 38:DF:3:HIS:HB2    | 38:DF:92:THR:HA    | 1.39                     | 1.03              |
| 47:DO:34:GLN:HE21  | 47:DO:38:LEU:HD21  | 1.21                     | 1.03              |
| 16:AJ:45:THR:HG23  | 23:AQ:63:ARG:NE    | 1.74                     | 1.03              |
| 28:AV:36:ALA:HB1   | 28:AV:37:PRO:HD2   | 1.39                     | 1.03              |
| 33:BA:253:A:H2'    | 33:BA:254:G:H8     | 1.24                     | 1.03              |
| 8:CB:2512:C:OP1    | 10:CD:128:ARG:HA   | 1.58                     | 1.03              |
| 11:CE:29:HIS:CD2   | 18:CL:19:LEU:HD11  | 1.94                     | 1.03              |
| 13:CG:30:GLY:H     | 13:CG:78:VAL:HG23  | 1.24                     | 1.03              |
| 33:BA:1270:G:H2'   | 33:BA:1271:A:H8    | 1.23                     | 1.02              |
| 24:CR:33:VAL:HG22  | 24:CR:34:GLU:H     | 1.24                     | 1.02              |
| 24:CR:66:HIS:HA    | 24:CR:98:ILE:HA    | 1.41                     | 1.02              |
| 33:DA:409:U:H2'    | 33:DA:410:G:C8     | 1.94                     | 1.02              |
| 8:AB:1399:C:H5''   | 26:AT:26:LYS:HG2   | 1.40                     | 1.02              |
| 8:AB:2391:G:H22    | 8:AB:2424:C:H2'    | 1.21                     | 1.02              |
| 16:AJ:116:ARG:HG2  | 16:AJ:116:ARG:HH11 | 1.24                     | 1.02              |
| 18:CL:117:THR:HG23 | 18:CL:118:THR:H    | 1.20                     | 1.02              |
| 38:DF:100:SER:HB2  | 50:DR:23:LYS:HD3   | 1.37                     | 1.02              |
| 8:AB:307:G:N2      | 8:AB:310:A:H8      | 1.56                     | 1.02              |
| 8:AB:2751:G:H21    | 13:AG:1:SER:HB3    | 1.21                     | 1.02              |
| 20:AN:12:ARG:HD2   | 20:AN:16:HIS:HD2   | 1.24                     | 1.02              |
| 4:C3:54:LEU:O      | 4:C3:58:ILE:HG12   | 1.60                     | 1.02              |
| 5:C4:26:ILE:HG21   | 5:C4:35:GLN:H      | 1.21                     | 1.02              |
| 8:CB:2330:G:H1'    | 29:CW:36:ILE:HD13  | 1.41                     | 1.02              |
| 8:AB:2052:A:O3'    | 10:AD:149:ASN:HA   | 1.60                     | 1.02              |
| 8:AB:2205:A:H2'    | 8:AB:2206:C:H6     | 1.17                     | 1.02              |
| 8:AB:2222:C:H2'    | 8:AB:2223:G:H8     | 1.14                     | 1.02              |
| 30:AX:49:ASP:HB2   | 30:AX:52:ARG:HG3   | 1.37                     | 1.02              |
| 42:BJ:53:ILE:HB    | 42:BJ:61:ALA:HB1   | 1.41                     | 1.02              |
| 43:BK:108:ASN:HB3  | 53:BU:6:ARG:HB2    | 1.41                     | 1.02              |
| 13:CG:156:TYR:HA   | 13:CG:171:LYS:HB3  | 1.39                     | 1.02              |
| 27:CU:82:VAL:HB    | 27:CU:94:PHE:HB3   | 1.42                     | 1.02              |
| 33:DA:381:C:H2'    | 33:DA:382:A:H8     | 1.24                     | 1.02              |
| 33:DA:1394:A:H8    | 33:DA:1501:C:H1'   | 1.21                     | 1.02              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:AM:42:THR:OG1   | 19:AM:45:GLN:HB2   | 1.57                     | 1.02              |
| 33:BA:1226:C:H5''  | 45:BM:102:LYS:HA   | 1.41                     | 1.02              |
| 33:BA:1465:A:C5    | 33:BA:1466:C:H5    | 1.78                     | 1.02              |
| 8:CB:2332:C:OP1    | 29:CW:73:PRO:HG3   | 1.60                     | 1.02              |
| 16:CJ:116:ARG:HG2  | 16:CJ:116:ARG:HH11 | 1.22                     | 1.02              |
| 8:AB:1028:A:H8     | 8:AB:1028:A:H5'    | 1.23                     | 1.01              |
| 27:AU:58:VAL:HG12  | 27:AU:59:GLU:HG3   | 1.38                     | 1.01              |
| 52:BT:66:ILE:HG23  | 52:BT:70:LYS:HE3   | 1.37                     | 1.01              |
| 8:CB:826:U:H3'     | 8:CB:828:U:H6      | 1.25                     | 1.01              |
| 8:CB:1256:G:C4     | 8:CB:1257:C:H5     | 1.77                     | 1.01              |
| 8:CB:1848:A:H2'    | 8:CB:1849:G:C8     | 1.94                     | 1.01              |
| 8:CB:2213:U:H3'    | 8:CB:2213:U:O2     | 1.59                     | 1.01              |
| 8:CB:2591:C:H2'    | 8:CB:2592:G:H8     | 1.19                     | 1.01              |
| 11:CE:29:HIS:HD2   | 18:CL:19:LEU:HD11  | 1.22                     | 1.01              |
| 24:CR:32:THR:HB    | 24:CR:35:PHE:HZ    | 1.25                     | 1.01              |
| 33:DA:685:G:H21    | 33:DA:706:A:N6     | 1.56                     | 1.01              |
| 8:AB:1256:G:C4     | 8:AB:1257:C:H5     | 1.78                     | 1.01              |
| 8:AB:2014:A:H2'    | 8:AB:2015:A:H8     | 1.18                     | 1.01              |
| 8:AB:2512:C:H1'    | 10:AD:146:ILE:HD11 | 1.37                     | 1.01              |
| 8:AB:2572:A:OP2    | 10:AD:152:PRO:HD2  | 1.58                     | 1.01              |
| 29:CW:39:GLN:HA    | 29:CW:68:PHE:HB2   | 1.41                     | 1.01              |
| 37:DE:82:HIS:HB2   | 37:DE:83:PRO:HD2   | 1.36                     | 1.01              |
| 1:A0:47:TYR:HA     | 1:A0:52:LYS:HB2    | 1.42                     | 1.01              |
| 7:AA:32:U:H2'      | 7:AA:33:G:H8       | 1.25                     | 1.01              |
| 8:AB:756:A:H8      | 8:AB:756:A:H5'     | 1.21                     | 1.01              |
| 16:AJ:135:GLN:HG2  | 16:AJ:137:PRO:HG2  | 1.42                     | 1.01              |
| 17:AK:35:VAL:HG13  | 17:AK:65:THR:HG23  | 1.41                     | 1.01              |
| 21:AO:87:ILE:HG13  | 21:AO:88:LYS:N     | 1.75                     | 1.01              |
| 23:AQ:111:LYS:HD3  | 24:AR:52:PRO:HB3   | 1.42                     | 1.01              |
| 47:BO:34:GLN:HE21  | 47:BO:38:LEU:HD21  | 1.24                     | 1.01              |
| 8:CB:2014:A:H2'    | 8:CB:2015:A:H8     | 1.16                     | 1.01              |
| 28:CV:36:ALA:HB1   | 28:CV:37:PRO:HD2   | 1.39                     | 1.01              |
| 8:AB:2213:U:H3'    | 8:AB:2213:U:O2     | 1.61                     | 1.01              |
| 11:AE:153:LEU:HD22 | 11:AE:193:VAL:HB   | 1.42                     | 1.01              |
| 27:AU:5:ARG:HG2    | 27:AU:6:ARG:H      | 1.25                     | 1.01              |
| 44:BL:35:ARG:HH21  | 44:BL:36:VAL:HG22  | 1.21                     | 1.01              |
| 8:CB:2645:G:H3'    | 8:CB:2646:C:H5'    | 1.42                     | 1.01              |
| 9:CC:264:LYS:NZ    | 9:CC:264:LYS:H     | 1.56                     | 1.01              |
| 33:DA:705:G:H8     | 33:DA:705:G:H5'    | 1.22                     | 1.01              |
| 8:AB:132:G:N2      | 8:AB:148:U:H3      | 1.59                     | 1.01              |
| 8:AB:1353:A:H2'    | 8:AB:1354:A:C8     | 1.96                     | 1.01              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AG:51:PHE:HD2  | 13:AG:52:GLY:H     | 1.03                     | 1.01              |
| 24:CR:77:PHE:HB2  | 24:CR:89:HIS:HE2   | 1.21                     | 1.01              |
| 8:AB:2354:C:H4'   | 29:AW:30:VAL:HG13  | 1.43                     | 1.00              |
| 8:AB:2840:C:H5''  | 20:AN:53:THR:HG21  | 1.41                     | 1.00              |
| 29:AW:23:LYS:HE3  | 29:AW:24:ARG:HB3   | 1.42                     | 1.00              |
| 8:CB:756:A:H8     | 8:CB:756:A:H5'     | 1.23                     | 1.00              |
| 8:CB:1425:G:H2'   | 8:CB:1426:G:C8     | 1.96                     | 1.00              |
| 8:CB:1784:A:H4'   | 8:CB:1785:A:H5''   | 1.38                     | 1.00              |
| 25:CS:74:ILE:HG22 | 25:CS:105:VAL:HG22 | 1.39                     | 1.00              |
| 33:DA:712:A:H8    | 33:DA:712:A:H5'    | 1.25                     | 1.00              |
| 37:DE:35:LEU:HD21 | 37:DE:136:VAL:HG21 | 1.39                     | 1.00              |
| 3:A2:16:HIS:CE1   | 8:AB:684:G:OP1     | 2.13                     | 1.00              |
| 8:AB:482:A:N3     | 8:AB:482:A:H2'     | 1.76                     | 1.00              |
| 8:AB:851:C:H2'    | 8:AB:852:U:C6      | 1.96                     | 1.00              |
| 13:AG:97:VAL:HG21 | 13:AG:123:GLU:HA   | 1.42                     | 1.00              |
| 17:AK:78:ARG:HE   | 22:AP:72:VAL:HG21  | 1.24                     | 1.00              |
| 33:BA:1097:C:H2'  | 33:BA:1098:C:H6    | 1.24                     | 1.00              |
| 36:BD:56:GLU:HG3  | 36:BD:59:LYS:HD2   | 1.42                     | 1.00              |
| 8:CB:336:C:H4'    | 27:CU:66:VAL:HG21  | 1.40                     | 1.00              |
| 29:CW:23:LYS:HE3  | 29:CW:24:ARG:H     | 1.26                     | 1.00              |
| 33:DA:465:A:H1'   | 33:DA:466:A:C5     | 1.96                     | 1.00              |
| 33:DA:484:G:H4'   | 33:DA:485:U:C5'    | 1.91                     | 1.00              |
| 8:AB:1372:U:H2'   | 8:AB:1373:A:H8     | 1.27                     | 1.00              |
| 29:AW:23:LYS:HE3  | 29:AW:24:ARG:H     | 1.26                     | 1.00              |
| 33:BA:900:A:H2'   | 33:BA:901:A:C8     | 1.96                     | 1.00              |
| 33:BA:1053:G:H2'  | 33:BA:1199:U:H5    | 1.27                     | 1.00              |
| 46:BN:50:LEU:HG   | 46:BN:51:PRO:HD3   | 1.37                     | 1.00              |
| 7:CA:12:C:H5      | 29:CW:50:VAL:HA    | 1.23                     | 1.00              |
| 8:CB:482:A:N3     | 8:CB:482:A:H2'     | 1.77                     | 1.00              |
| 8:CB:1030:C:OP1   | 19:CM:117:PHE:HZ   | 1.42                     | 1.00              |
| 40:DH:10:LEU:HD13 | 40:DH:74:ILE:HD11  | 1.41                     | 1.00              |
| 8:AB:1258:U:H2'   | 8:AB:1259:G:C8     | 1.96                     | 1.00              |
| 9:AC:155:ARG:HD2  | 9:AC:157:ALA:HB3   | 1.40                     | 1.00              |
| 8:CB:948:C:H2'    | 8:CB:949:G:H8      | 1.27                     | 1.00              |
| 41:BI:39:GLY:HA2  | 41:BI:44:ARG:HD3   | 1.41                     | 1.00              |
| 33:DA:432:A:H2'   | 33:DA:433:G:H5'    | 1.44                     | 1.00              |
| 14:AH:78:VAL:HG11 | 14:AH:102:ALA:HB1  | 1.40                     | 1.00              |
| 33:BA:15:G:H2'    | 33:BA:16:A:C8      | 1.97                     | 1.00              |
| 48:BP:4:ILE:HD11  | 48:BP:65:ALA:HB1   | 1.43                     | 1.00              |
| 5:C4:24:ARG:HE    | 5:C4:37:GLN:HA     | 1.23                     | 1.00              |
| 14:CH:78:VAL:HG12 | 14:CH:79:THR:H     | 1.27                     | 1.00              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:CP:58:PHE:O     | 22:CP:60:VAL:HG22  | 1.61                     | 1.00              |
| 33:DA:831:A:H3'    | 33:DA:831:A:C8     | 1.94                     | 1.00              |
| 33:DA:947:G:H5''   | 45:DM:106:ARG:HB2  | 1.43                     | 1.00              |
| 36:BD:84:ASN:ND2   | 36:BD:87:GLU:H     | 1.60                     | 0.99              |
| 7:CA:42:C:H5       | 12:CF:65:LEU:HD22  | 1.25                     | 0.99              |
| 7:CA:49:C:OP1      | 21:CO:101:GLY:HA3  | 1.62                     | 0.99              |
| 29:CW:39:GLN:CA    | 29:CW:68:PHE:HB2   | 1.91                     | 0.99              |
| 33:DA:15:G:H2'     | 33:DA:16:A:C8      | 1.97                     | 0.99              |
| 33:DA:467:U:H3'    | 33:DA:468:A:H5''   | 1.44                     | 0.99              |
| 33:BA:1370:G:H2'   | 33:BA:1371:G:H5''  | 1.41                     | 0.99              |
| 7:CA:30:C:H2'      | 7:CA:31:C:H5'      | 1.43                     | 0.99              |
| 8:CB:2222:C:H2'    | 8:CB:2223:G:C8     | 1.96                     | 0.99              |
| 10:AD:138:LEU:H    | 10:AD:138:LEU:HD23 | 1.27                     | 0.99              |
| 26:AT:76:ARG:HG2   | 26:AT:77:ARG:H     | 1.25                     | 0.99              |
| 33:BA:1270:G:H2'   | 33:BA:1271:A:C8    | 1.98                     | 0.99              |
| 35:BC:15:LYS:HD2   | 35:BC:16:PRO:HD3   | 1.43                     | 0.99              |
| 24:CR:64:VAL:HG23  | 24:CR:100:GLY:HA2  | 1.42                     | 0.99              |
| 34:BB:163:ILE:HG23 | 34:BB:164:ASP:H    | 1.25                     | 0.99              |
| 8:CB:2354:C:H4'    | 29:CW:30:VAL:HG13  | 1.41                     | 0.99              |
| 9:CC:22:GLU:HB2    | 9:CC:202:ARG:HG3   | 1.44                     | 0.99              |
| 33:DA:235:C:H2'    | 33:DA:236:A:H8     | 1.08                     | 0.99              |
| 8:AB:1318:U:H2'    | 8:AB:1319:C:H6     | 1.26                     | 0.99              |
| 8:AB:2239:G:H5'    | 9:AC:246:PRO:HG2   | 1.44                     | 0.99              |
| 11:AE:109:LEU:HB2  | 11:AE:117:ARG:HD3  | 1.45                     | 0.99              |
| 22:AP:58:PHE:O     | 22:AP:60:VAL:HG22  | 1.60                     | 0.99              |
| 33:BA:668:G:H21    | 47:BO:45:HIS:CE1   | 1.79                     | 0.99              |
| 8:CB:264:C:H2'     | 8:CB:265:A:H5''    | 1.44                     | 0.99              |
| 8:CB:1372:U:H2'    | 8:CB:1373:A:H8     | 1.26                     | 0.99              |
| 17:AK:71:ARG:HB3   | 17:AK:72:PRO:CD    | 1.92                     | 0.99              |
| 10:CD:69:ALA:HB2   | 10:CD:91:THR:HB    | 1.44                     | 0.99              |
| 33:DA:598:U:H4'    | 40:DH:85:TYR:CD2   | 1.97                     | 0.99              |
| 27:CU:66:VAL:HG13  | 27:CU:67:SER:H     | 1.23                     | 0.99              |
| 1:A0:29:VAL:HG12   | 1:A0:31:LYS:H      | 1.27                     | 0.99              |
| 8:AB:311:A:H3'     | 8:AB:312:G:C8      | 1.98                     | 0.99              |
| 8:AB:2575:C:H5'    | 10:AD:150:GLN:HE21 | 1.26                     | 0.99              |
| 8:AB:2807:U:H1'    | 8:AB:2892:G:N2     | 1.78                     | 0.99              |
| 29:AW:48:ALA:H     | 29:AW:72:GLY:HA3   | 1.28                     | 0.99              |
| 48:BP:76:LYS:HD2   | 48:BP:80:LYS:HD2   | 1.45                     | 0.99              |
| 29:CW:47:GLY:HA2   | 29:CW:72:GLY:HA3   | 1.41                     | 0.99              |
| 33:DA:382:A:H2'    | 33:DA:383:A:C8     | 1.97                     | 0.99              |
| 3:A2:34:ARG:HE     | 3:A2:42:LEU:HD13   | 1.28                     | 0.99              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1848:A:H2'   | 8:AB:1849:G:C8     | 1.98                     | 0.99              |
| 8:AB:2645:G:H3'   | 8:AB:2646:C:H5'    | 1.42                     | 0.99              |
| 8:AB:2730:C:H2'   | 8:AB:2731:G:C8     | 1.98                     | 0.99              |
| 33:BA:1490:U:H5'  | 33:BA:1491:G:OP2   | 1.61                     | 0.99              |
| 8:CB:1353:A:H2'   | 8:CB:1354:A:C8     | 1.97                     | 0.99              |
| 8:CB:1613:G:H2'   | 8:CB:1617:C:H42    | 1.26                     | 0.99              |
| 9:CC:51:ARG:HH22  | 9:CC:54:GLY:HA3    | 1.24                     | 0.99              |
| 25:CS:33:LEU:HD21 | 25:CS:51:LEU:HD12  | 1.44                     | 0.99              |
| 8:AB:599:A:H4'    | 11:AE:26:ALA:HB1   | 1.45                     | 0.99              |
| 8:AB:826:U:H3'    | 8:AB:828:U:H6      | 1.27                     | 0.99              |
| 13:AG:88:LEU:HD22 | 13:AG:93:TYR:HB3   | 1.45                     | 0.99              |
| 23:CQ:47:ARG:HH12 | 23:CQ:50:ARG:HG3   | 1.20                     | 0.99              |
| 28:CV:29:ILE:HD13 | 28:CV:30:ILE:N     | 1.76                     | 0.99              |
| 33:DA:714:G:H21   | 33:DA:777:A:C1'    | 1.76                     | 0.99              |
| 8:AB:1216:G:C5    | 8:AB:1217:U:C5     | 2.51                     | 0.98              |
| 8:AB:1291:C:H5'   | 8:AB:1291:C:H6     | 1.27                     | 0.98              |
| 10:AD:154:LYS:O   | 10:AD:155:VAL:HG12 | 1.61                     | 0.98              |
| 21:AO:6:ALA:HA    | 21:AO:10:ARG:HD3   | 1.43                     | 0.98              |
| 10:CD:184:ARG:NH1 | 22:CP:4:ILE:HG21   | 1.78                     | 0.98              |
| 16:CJ:45:THR:N    | 23:CQ:63:ARG:HH21  | 1.61                     | 0.98              |
| 38:DF:60:VAL:HG12 | 38:DF:61:LEU:H     | 1.24                     | 0.98              |
| 38:BF:60:VAL:HG12 | 38:BF:61:LEU:H     | 1.24                     | 0.98              |
| 9:CC:179:GLU:HG2  | 9:CC:266:ILE:HA    | 1.44                     | 0.98              |
| 13:CG:84:LYS:HB2  | 13:CG:132:LEU:HD11 | 1.46                     | 0.98              |
| 18:CL:58:TYR:N    | 18:CL:58:TYR:HD2   | 1.59                     | 0.98              |
| 33:DA:663:A:H2'   | 33:DA:664:G:H5''   | 1.44                     | 0.98              |
| 8:AB:196:A:H3'    | 8:AB:197:A:C5'     | 1.94                     | 0.98              |
| 8:AB:1026:G:HO2'  | 8:AB:1027:A:H8     | 1.03                     | 0.98              |
| 10:CD:130:GLN:HB3 | 10:CD:140:HIS:HA   | 1.44                     | 0.98              |
| 37:DE:53:ARG:HB3  | 37:DE:53:ARG:NH1   | 1.75                     | 0.98              |
| 41:DI:98:ARG:HG3  | 41:DI:103:VAL:HG21 | 1.44                     | 0.98              |
| 19:AM:50:ARG:HH22 | 19:AM:53:MET:HB3   | 1.24                     | 0.98              |
| 48:BP:39:PHE:HA   | 48:BP:50:THR:HG23  | 1.42                     | 0.98              |
| 17:CK:71:ARG:HB3  | 17:CK:72:PRO:CD    | 1.93                     | 0.98              |
| 18:CL:92:LEU:HA   | 18:CL:96:LYS:HB2   | 0.99                     | 0.98              |
| 6:A5:153:ARG:HG2  | 6:A5:154:ILE:H     | 1.28                     | 0.98              |
| 18:AL:56:PRO:HA   | 18:AL:60:ARG:NH1   | 1.79                     | 0.98              |
| 27:AU:96:LYS:HG3  | 27:AU:98:ASN:HB3   | 1.43                     | 0.98              |
| 8:CB:443:A:OP1    | 11:CE:40:ARG:HA    | 1.63                     | 0.98              |
| 8:CB:1258:U:H2'   | 8:CB:1259:G:C8     | 1.98                     | 0.98              |
| 10:CD:11:MET:O    | 10:CD:23:PRO:HD2   | 1.63                     | 0.98              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:253:A:H2'   | 33:DA:254:G:H8    | 1.23                     | 0.98              |
| 33:DA:631:C:H5''  | 33:DA:632:U:H5'   | 1.44                     | 0.98              |
| 22:AP:1:SER:CB    | 22:AP:5:LYS:HG2   | 1.92                     | 0.98              |
| 26:AT:62:VAL:HG23 | 26:AT:63:VAL:H    | 1.25                     | 0.98              |
| 8:CB:322:A:H5'    | 8:CB:340:A:C1'    | 1.93                     | 0.98              |
| 8:CB:1019:U:H3    | 8:CB:1142:A:H62   | 1.08                     | 0.98              |
| 8:CB:1165:A:H2'   | 8:CB:1166:G:H8    | 1.25                     | 0.98              |
| 23:CQ:79:ILE:HA   | 23:CQ:82:LEU:HD12 | 1.43                     | 0.98              |
| 25:CS:11:ARG:HG3  | 25:CS:11:ARG:HH11 | 1.24                     | 0.98              |
| 25:AS:24:ILE:HA   | 25:AS:28:LYS:HD2  | 1.42                     | 0.98              |
| 27:AU:11:ILE:HB   | 27:AU:69:VAL:HG11 | 1.46                     | 0.98              |
| 32:AZ:30:HIS:O    | 32:AZ:31:ASP:HB3  | 1.61                     | 0.98              |
| 16:CJ:77:HIS:CE1  | 16:CJ:84:ILE:HD13 | 1.98                     | 0.98              |
| 20:AN:25:ALA:HB2  | 20:AN:44:LEU:HD11 | 1.45                     | 0.98              |
| 33:BA:253:A:H2'   | 33:BA:254:G:C8    | 1.98                     | 0.98              |
| 9:CC:139:THR:HG22 | 9:CC:193:GLU:HB3  | 1.46                     | 0.98              |
| 18:CL:19:LEU:HD13 | 18:CL:19:LEU:H    | 1.26                     | 0.98              |
| 20:CN:25:ALA:HB2  | 20:CN:44:LEU:HD11 | 1.45                     | 0.98              |
| 24:CR:77:PHE:HB2  | 24:CR:89:HIS:NE2  | 1.77                     | 0.98              |
| 33:DA:659:U:H2'   | 33:DA:660:C:H6    | 1.26                     | 0.98              |
| 39:DG:45:ALA:HB2  | 39:DG:116:ALA:HA  | 1.46                     | 0.98              |
| 8:AB:751:A:O4'    | 25:AS:90:LYS:HE2  | 1.64                     | 0.98              |
| 8:AB:1799:G:OP1   | 9:AC:255:LYS:HG2  | 1.62                     | 0.98              |
| 11:AE:133:LEU:HB3 | 11:AE:136:GLN:HG3 | 1.46                     | 0.98              |
| 8:CB:1216:G:C6    | 8:CB:1217:U:H5    | 1.80                     | 0.98              |
| 15:CI:52:LEU:HD23 | 15:CI:53:PRO:HD2  | 1.46                     | 0.98              |
| 16:CJ:41:LYS:NZ   | 16:CJ:46:PRO:HG3  | 1.76                     | 0.98              |
| 21:CO:73:ALA:HA   | 21:CO:76:LYS:HD2  | 1.44                     | 0.98              |
| 34:DB:46:VAL:HG13 | 34:DB:47:PRO:HD3  | 1.45                     | 0.98              |
| 8:AB:2640:G:H2'   | 8:AB:2641:G:H5''  | 1.46                     | 0.97              |
| 33:BA:1441:A:H61  | 33:BA:1462:C:H1'  | 1.28                     | 0.97              |
| 9:CC:24:HIS:HB3   | 9:CC:27:LYS:HE2   | 1.44                     | 0.97              |
| 33:DA:253:A:H2'   | 33:DA:254:G:C8    | 1.97                     | 0.97              |
| 33:DA:585:G:H8    | 33:DA:585:G:C5'   | 1.77                     | 0.97              |
| 5:A4:16:ILE:HD12  | 5:A4:17:VAL:H     | 1.24                     | 0.97              |
| 8:AB:1425:G:H2'   | 8:AB:1426:G:C8    | 1.99                     | 0.97              |
| 8:AB:2682:A:H2    | 8:AB:2683:C:C2    | 1.80                     | 0.97              |
| 9:CC:155:ARG:HD2  | 9:CC:157:ALA:HB3  | 1.43                     | 0.97              |
| 8:AB:448:U:H5     | 8:AB:583:G:N3     | 1.63                     | 0.97              |
| 8:AB:654:A:H2'    | 8:AB:655:A:H5''   | 1.46                     | 0.97              |
| 16:AJ:78:THR:H    | 16:AJ:84:ILE:HG21 | 1.27                     | 0.97              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 31:AY:9:THR:HB     | 31:AY:53:MET:O    | 1.64                     | 0.97              |
| 40:BH:105:THR:HG22 | 40:BH:122:GLY:HA3 | 1.43                     | 0.97              |
| 10:CD:62:LYS:HG2   | 10:CD:63:PRO:HD3  | 1.45                     | 0.97              |
| 33:DA:162:A:H2'    | 33:DA:163:C:O4'   | 1.63                     | 0.97              |
| 8:AB:396:G:H8      | 8:AB:396:G:H5'    | 1.30                     | 0.97              |
| 9:AC:139:THR:HG22  | 9:AC:193:GLU:HB3  | 1.44                     | 0.97              |
| 10:CD:136:ASN:HA   | 10:CD:139:SER:HB2 | 1.46                     | 0.97              |
| 33:DA:750:C:H4'    | 47:DO:20:ASP:HA   | 1.44                     | 0.97              |
| 33:DA:1060:U:H4'   | 42:DJ:54:SER:HB2  | 1.44                     | 0.97              |
| 8:AB:2222:C:H2'    | 8:AB:2223:G:C8    | 1.99                     | 0.97              |
| 9:AC:220:ARG:NE    | 9:AC:220:ARG:HA   | 1.76                     | 0.97              |
| 11:AE:48:THR:HA    | 11:AE:83:VAL:HG21 | 1.45                     | 0.97              |
| 30:CX:49:ASP:HA    | 30:CX:52:ARG:HD2  | 1.46                     | 0.97              |
| 33:DA:1347:G:C8    | 41:DI:108:ARG:HG3 | 1.98                     | 0.97              |
| 11:CE:20:GLY:HA2   | 11:CE:106:LYS:HD2 | 1.43                     | 0.97              |
| 33:DA:1169:A:H2'   | 33:DA:1170:A:H8   | 1.24                     | 0.97              |
| 3:A2:5:PHE:CE2     | 3:A2:7:PRO:HB3    | 1.99                     | 0.97              |
| 8:AB:1824:G:H21    | 9:AC:249:VAL:HG12 | 1.26                     | 0.97              |
| 18:AL:81:ASP:HB2   | 18:AL:99:ASN:HD22 | 1.28                     | 0.97              |
| 8:CB:283:G:H1      | 8:CB:357:C:H42    | 1.12                     | 0.97              |
| 33:DA:401:C:H6     | 33:DA:401:C:H3'   | 1.28                     | 0.97              |
| 51:DS:10:ILE:HG22  | 51:DS:37:SER:HB2  | 1.43                     | 0.97              |
| 11:AE:3:LEU:HD12   | 11:AE:13:THR:H    | 1.28                     | 0.97              |
| 9:CC:68:ARG:HD2    | 9:CC:127:ASN:ND2  | 1.79                     | 0.97              |
| 3:A2:9:VAL:HG23    | 3:A2:10:LEU:HD13  | 1.47                     | 0.97              |
| 8:AB:634:C:H2'     | 8:AB:635:C:H6     | 1.30                     | 0.97              |
| 16:AJ:84:ILE:HD12  | 16:AJ:84:ILE:H    | 1.26                     | 0.97              |
| 16:CJ:41:LYS:HG3   | 23:CQ:63:ARG:HH22 | 1.28                     | 0.97              |
| 33:DA:714:G:H21    | 33:DA:777:A:H1'   | 0.81                     | 0.97              |
| 19:AM:65:ILE:HG22  | 19:AM:101:VAL:HA  | 1.45                     | 0.97              |
| 8:CB:1291:C:H5'    | 8:CB:1291:C:H6    | 1.29                     | 0.97              |
| 8:CB:1298:C:N4     | 8:CB:1642:G:H1    | 1.61                     | 0.97              |
| 23:CQ:49:ARG:HG3   | 24:CR:77:PHE:HZ   | 1.17                     | 0.97              |
| 32:CZ:34:LEU:HD12  | 32:CZ:35:ASP:H    | 1.27                     | 0.97              |
| 8:AB:1216:G:C6     | 8:AB:1217:U:C5    | 2.52                     | 0.96              |
| 45:BM:78:ARG:HG2   | 45:BM:78:ARG:HH11 | 1.30                     | 0.96              |
| 8:CB:1028:A:H2'    | 8:CB:1029:A:C8    | 1.99                     | 0.96              |
| 8:CB:1799:G:OP1    | 9:CC:255:LYS:HG2  | 1.64                     | 0.96              |
| 8:CB:2736:A:H2'    | 8:CB:2737:G:H8    | 1.24                     | 0.96              |
| 11:CE:149:ILE:HG13 | 11:CE:186:VAL:HA  | 1.47                     | 0.96              |
| 14:CH:115:VAL:HG22 | 14:CH:117:LEU:HB2 | 1.42                     | 0.96              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:CJ:84:ILE:HD12 | 16:CJ:84:ILE:H     | 1.29                     | 0.96              |
| 19:CM:50:ARG:HH22 | 19:CM:53:MET:HB3   | 1.28                     | 0.96              |
| 8:AB:67:U:H2'     | 8:AB:68:G:H8       | 1.29                     | 0.96              |
| 16:AJ:77:HIS:CE1  | 16:AJ:84:ILE:HD13  | 1.99                     | 0.96              |
| 25:AS:74:ILE:HG22 | 25:AS:105:VAL:HG22 | 1.47                     | 0.96              |
| 33:BA:401:C:H2'   | 33:BA:402:G:C8     | 2.00                     | 0.96              |
| 8:CB:1392:A:H62   | 26:CT:18:GLU:HG3   | 1.25                     | 0.96              |
| 17:CK:66:LYS:HA   | 17:CK:79:PHE:O     | 1.64                     | 0.96              |
| 18:CL:77:ILE:HD11 | 18:CL:110:VAL:HA   | 1.43                     | 0.96              |
| 33:DA:1415:G:H2'  | 33:DA:1416:G:H8    | 1.29                     | 0.96              |
| 9:AC:68:ARG:HD2   | 9:AC:127:ASN:ND2   | 1.80                     | 0.96              |
| 27:AU:12:VAL:HA   | 27:AU:68:ASN:HD21  | 1.30                     | 0.96              |
| 22:CP:27:VAL:HB   | 22:CP:86:LYS:O     | 1.65                     | 0.96              |
| 8:AB:398:C:H3'    | 32:AZ:49:ARG:HH22  | 1.29                     | 0.96              |
| 16:AJ:45:THR:HG21 | 23:AQ:59:LEU:HD11  | 1.44                     | 0.96              |
| 18:AL:33:ARG:HG3  | 18:AL:33:ARG:HH11  | 1.27                     | 0.96              |
| 33:BA:537:G:C8    | 33:BA:537:G:H3'    | 2.00                     | 0.96              |
| 9:AC:22:GLU:HB2   | 9:AC:202:ARG:HG3   | 1.43                     | 0.96              |
| 33:BA:235:C:H2'   | 33:BA:236:A:H8     | 1.13                     | 0.96              |
| 8:CB:1803:A:O3'   | 9:CC:254:LYS:HD2   | 1.65                     | 0.96              |
| 17:CK:19:VAL:HB   | 17:CK:41:ILE:HD11  | 1.43                     | 0.96              |
| 19:CM:86:LYS:HG2  | 19:CM:87:GLY:H     | 1.28                     | 0.96              |
| 42:DJ:53:ILE:HG22 | 42:DJ:61:ALA:HB1   | 1.47                     | 0.96              |
| 8:AB:2519:U:H4'   | 8:AB:2520:C:OP1    | 1.65                     | 0.96              |
| 16:AJ:5:THR:HG23  | 16:AJ:45:THR:OG1   | 1.66                     | 0.96              |
| 8:CB:1809:A:H2'   | 8:CB:1810:A:C8     | 2.00                     | 0.96              |
| 11:CE:194:LYS:H   | 11:CE:194:LYS:HZ2  | 1.01                     | 0.96              |
| 19:CM:5:LYS:HZ3   | 19:CM:8:LYS:HE3    | 1.31                     | 0.96              |
| 33:DA:1259:C:H42  | 33:DA:1276:G:H1    | 1.07                     | 0.96              |
| 8:AB:91:A:H2'     | 8:AB:92:U:H6       | 1.25                     | 0.96              |
| 13:AG:156:TYR:HE1 | 13:AG:173:ALA:HA   | 1.30                     | 0.96              |
| 25:AS:29:VAL:HG11 | 25:AS:69:LEU:HB2   | 1.47                     | 0.96              |
| 8:CB:654:A:H2'    | 8:CB:655:A:H5''    | 1.44                     | 0.96              |
| 8:CB:1372:U:H2'   | 8:CB:1373:A:C8     | 2.00                     | 0.96              |
| 16:CJ:78:THR:H    | 16:CJ:84:ILE:HG21  | 1.27                     | 0.96              |
| 17:CK:17:ARG:HB3  | 17:CK:45:GLU:HG2   | 1.48                     | 0.96              |
| 8:AB:2331:G:O2'   | 29:AW:69:GLU:HG3   | 1.65                     | 0.96              |
| 8:CB:1804:C:H4'   | 9:CC:247:TRP:CZ2   | 2.00                     | 0.96              |
| 8:CB:2678:C:H2'   | 8:CB:2679:A:H8     | 1.30                     | 0.96              |
| 9:CC:104:LEU:O    | 9:CC:106:PRO:HD3   | 1.64                     | 0.96              |
| 20:CN:4:ARG:HE    | 20:CN:4:ARG:C      | 1.69                     | 0.96              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:CN:55:ALA:HA    | 20:CN:80:PHE:CD2   | 2.01                     | 0.96              |
| 35:DC:172:VAL:HG13 | 35:DC:202:PHE:HB2  | 1.47                     | 0.96              |
| 26:AT:80:TRP:HD1   | 26:AT:81:LYS:H     | 1.11                     | 0.96              |
| 18:CL:92:LEU:HD13  | 18:CL:96:LYS:HB3   | 1.46                     | 0.96              |
| 22:CP:93:LYS:HE3   | 22:CP:97:TYR:CZ    | 2.00                     | 0.96              |
| 8:CB:1752:C:H42    | 8:CB:1756:G:H1     | 1.14                     | 0.96              |
| 8:CB:2282:G:C6     | 8:CB:2425:A:C2     | 2.54                     | 0.96              |
| 45:DM:106:ARG:HG2  | 45:DM:106:ARG:HH11 | 1.29                     | 0.96              |
| 52:DT:11:ILE:O     | 52:DT:15:LYS:HG2   | 1.66                     | 0.96              |
| 8:CB:1053:C:H42    | 8:CB:1106:G:H1     | 1.07                     | 0.95              |
| 21:CO:10:ARG:HG3   | 21:CO:96:GLY:HA2   | 1.48                     | 0.95              |
| 33:DA:805:C:H2'    | 33:DA:806:C:H6     | 1.30                     | 0.95              |
| 21:AO:27:VAL:HA    | 21:AO:94:ARG:HB3   | 1.49                     | 0.95              |
| 20:CN:3:HIS:HB2    | 20:CN:4:ARG:NH2    | 1.80                     | 0.95              |
| 26:CT:76:ARG:HB3   | 26:CT:76:ARG:HH11  | 1.25                     | 0.95              |
| 8:AB:2335:A:OP2    | 21:AO:9:ARG:HG3    | 1.66                     | 0.95              |
| 20:AN:32:GLU:HG3   | 20:AN:33:ILE:HG13  | 1.48                     | 0.95              |
| 26:AT:76:ARG:HB3   | 26:AT:76:ARG:HH11  | 1.25                     | 0.95              |
| 33:BA:1182:G:H4'   | 33:BA:1183:U:H5'   | 1.48                     | 0.95              |
| 8:CB:1665:A:O2'    | 17:CK:67:LYS:HE2   | 1.67                     | 0.95              |
| 34:DB:54:ALA:HA    | 34:DB:57:ASN:HB3   | 1.48                     | 0.95              |
| 8:AB:1165:A:H2'    | 8:AB:1166:G:H8     | 1.30                     | 0.95              |
| 17:AK:17:ARG:HB3   | 17:AK:45:GLU:HG2   | 1.47                     | 0.95              |
| 8:CB:6:A:H4'       | 16:CJ:133:ALA:HB1  | 1.48                     | 0.95              |
| 8:CB:634:C:H2'     | 8:CB:635:C:H6      | 1.30                     | 0.95              |
| 8:CB:2519:U:H4'    | 8:CB:2520:C:OP1    | 1.67                     | 0.95              |
| 15:CI:23:VAL:HG12  | 15:CI:27:LEU:HD22  | 1.48                     | 0.95              |
| 18:CL:17:LYS:HG3   | 18:CL:18:ARG:H     | 1.30                     | 0.95              |
| 31:CY:9:THR:HB     | 31:CY:53:MET:O     | 1.64                     | 0.95              |
| 49:DQ:67:SER:OG    | 49:DQ:70:LYS:HB3   | 1.67                     | 0.95              |
| 8:AB:1372:U:H2'    | 8:AB:1373:A:C8     | 2.01                     | 0.95              |
| 8:AB:1809:A:H2'    | 8:AB:1810:A:C8     | 2.01                     | 0.95              |
| 8:AB:2633:G:H1'    | 10:AD:62:LYS:CG    | 1.95                     | 0.95              |
| 11:AE:11:ALA:C     | 11:AE:12:LEU:HG    | 1.84                     | 0.95              |
| 8:CB:2807:U:H1'    | 8:CB:2892:G:N2     | 1.80                     | 0.95              |
| 8:CB:2888:C:H2'    | 8:CB:2889:C:H6     | 1.28                     | 0.95              |
| 20:CN:32:GLU:HG3   | 20:CN:33:ILE:HG13  | 1.47                     | 0.95              |
| 36:DD:43:ARG:O     | 36:DD:45:PRO:HD3   | 1.66                     | 0.95              |
| 36:DD:167:PRO:HB2  | 36:DD:170:LEU:HD11 | 1.49                     | 0.95              |
| 8:AB:1019:U:H3     | 8:AB:1142:A:H62    | 1.08                     | 0.95              |
| 8:AB:1056:G:H4'    | 8:AB:1086:A:C8     | 2.00                     | 0.95              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1829:A:H5''  | 8:AB:1829:A:H8     | 1.29                     | 0.95              |
| 9:AC:107:LYS:H    | 9:AC:194:VAL:HG21  | 1.29                     | 0.95              |
| 10:AD:7:LYS:HB3   | 10:AD:201:LEU:HD21 | 1.48                     | 0.95              |
| 14:AH:3:VAL:HG22  | 14:AH:21:VAL:HG11  | 1.45                     | 0.95              |
| 8:CB:56:A:H61     | 8:CB:114:U:H3      | 1.01                     | 0.95              |
| 8:CB:196:A:H3'    | 8:CB:197:A:C5'     | 1.94                     | 0.95              |
| 33:DA:238:A:H2'   | 33:DA:239:U:H5''   | 1.45                     | 0.95              |
| 33:DA:494:G:HO2'  | 33:DA:496:A:H8     | 0.96                     | 0.95              |
| 33:DA:495:A:H4'   | 33:DA:496:A:O5'    | 1.64                     | 0.95              |
| 8:AB:993:G:C2     | 8:AB:994:C:H5      | 1.84                     | 0.95              |
| 8:AB:2282:G:C6    | 8:AB:2425:A:C2     | 2.55                     | 0.95              |
| 9:AC:24:HIS:HB3   | 9:AC:27:LYS:HE2    | 1.49                     | 0.95              |
| 33:BA:1438:G:H2'  | 33:BA:1439:G:H8    | 1.28                     | 0.95              |
| 8:CB:398:C:H3'    | 32:CZ:49:ARG:NH2   | 1.82                     | 0.95              |
| 27:CU:5:ARG:HG2   | 27:CU:6:ARG:H      | 1.28                     | 0.95              |
| 33:DA:659:U:H2'   | 33:DA:660:C:C6     | 2.01                     | 0.95              |
| 37:DE:55:VAL:HB   | 37:DE:56:PRO:HD3   | 1.48                     | 0.95              |
| 44:DL:93:ARG:HD2  | 44:DL:93:ARG:H     | 1.31                     | 0.95              |
| 7:AA:55:U:H2'     | 7:AA:56:G:C8       | 2.02                     | 0.95              |
| 8:AB:2866:U:O2    | 8:AB:2868:A:H1'    | 1.66                     | 0.95              |
| 27:AU:39:ASN:HD22 | 27:AU:42:LYS:HE2   | 1.28                     | 0.95              |
| 33:BA:1471:U:H3'  | 33:BA:1472:U:H5''  | 1.48                     | 0.95              |
| 8:CB:1820:U:C5    | 9:CC:158:GLY:HA3   | 2.02                     | 0.95              |
| 21:CO:83:LEU:O    | 21:CO:87:ILE:HD12  | 1.67                     | 0.95              |
| 33:DA:889:A:H5'   | 33:DA:891:U:H1'    | 1.48                     | 0.95              |
| 34:DB:127:LYS:O   | 34:DB:128:LEU:HB3  | 1.66                     | 0.95              |
| 35:DC:8:GLY:HA2   | 35:DC:11:LEU:HG    | 1.44                     | 0.95              |
| 39:DG:73:GLU:HA   | 39:DG:140:VAL:HG11 | 1.49                     | 0.95              |
| 41:DI:18:VAL:HG12 | 41:DI:64:ILE:HD13  | 1.49                     | 0.95              |
| 8:AB:1291:C:H5'   | 8:AB:1291:C:C6     | 2.02                     | 0.95              |
| 9:AC:51:ARG:HH22  | 9:AC:54:GLY:HA3    | 1.30                     | 0.95              |
| 26:AT:15:HIS:HE2  | 26:AT:80:TRP:HZ2   | 1.09                     | 0.95              |
| 33:BA:936:C:H1'   | 33:BA:1382:C:H42   | 1.32                     | 0.95              |
| 3:C2:9:VAL:HG23   | 3:C2:10:LEU:HD13   | 1.48                     | 0.95              |
| 8:CB:2303:G:H1'   | 12:CF:122:ASP:HA   | 1.47                     | 0.95              |
| 55:CB:5460:HOH:O  | 10:CD:135:GLY:HA2  | 1.67                     | 0.95              |
| 24:CR:79:ARG:HD3  | 24:CR:81:LYS:HE2   | 1.49                     | 0.95              |
| 33:BA:162:A:H2'   | 33:BA:163:C:O4'    | 1.65                     | 0.95              |
| 3:C2:5:PHE:CE2    | 3:C2:7:PRO:HB3     | 2.02                     | 0.95              |
| 8:CB:1824:G:H21   | 9:CC:249:VAL:HG12  | 1.32                     | 0.95              |
| 18:CL:35:HIS:HE1  | 24:CR:84:ARG:O     | 1.50                     | 0.95              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:552:U:H2'   | 33:DA:553:A:H8    | 1.27                     | 0.95              |
| 33:DA:1425:U:H1'  | 33:DA:1476:A:H2   | 1.27                     | 0.95              |
| 5:A4:15:LYS:HD3   | 5:A4:26:ILE:HG13  | 1.47                     | 0.94              |
| 8:AB:1020:A:H4'   | 8:AB:1021:A:H5'   | 1.49                     | 0.94              |
| 8:AB:1298:C:N4    | 8:AB:1642:G:H1    | 1.62                     | 0.94              |
| 9:AC:220:ARG:HG3  | 9:AC:220:ARG:HH11 | 1.30                     | 0.94              |
| 11:AE:22:ASP:O    | 11:AE:23:PHE:HB2  | 1.65                     | 0.94              |
| 33:BA:437:U:H2'   | 33:BA:438:U:H5''  | 1.49                     | 0.94              |
| 2:C1:26:LYS:HD2   | 2:C1:29:LYS:HG2   | 1.47                     | 0.94              |
| 8:AB:1804:C:H4'   | 9:AC:247:TRP:CZ2  | 2.02                     | 0.94              |
| 8:CB:397:U:OP1    | 32:CZ:29:GLY:HA2  | 1.67                     | 0.94              |
| 8:CB:1216:G:C5    | 8:CB:1217:U:C5    | 2.54                     | 0.94              |
| 41:BI:44:ARG:HG3  | 41:BI:44:ARG:NH1  | 1.79                     | 0.94              |
| 45:BM:15:VAL:HG23 | 45:BM:33:LEU:HD12 | 1.46                     | 0.94              |
| 8:CB:1291:C:H5'   | 8:CB:1291:C:C6    | 2.02                     | 0.94              |
| 8:CB:2693:G:C2'   | 8:CB:2694:G:H5''  | 1.97                     | 0.94              |
| 33:DA:382:A:H2'   | 33:DA:383:A:H8    | 1.32                     | 0.94              |
| 47:DO:63:ARG:HG3  | 47:DO:63:ARG:HH11 | 1.33                     | 0.94              |
| 53:DU:4:LYS:HG2   | 53:DU:6:ARG:HH22  | 1.32                     | 0.94              |
| 8:AB:536:G:H21    | 16:AJ:48:VAL:HG22 | 1.30                     | 0.94              |
| 23:AQ:52:ARG:CZ   | 23:AQ:55:GLN:HG2  | 1.97                     | 0.94              |
| 35:BC:13:ILE:HG22 | 35:BC:14:VAL:HG22 | 1.50                     | 0.94              |
| 51:BS:4:LEU:HD13  | 51:BS:9:PHE:H     | 1.32                     | 0.94              |
| 8:CB:1651:G:OP1   | 20:CN:37:THR:HG21 | 1.67                     | 0.94              |
| 10:CD:156:PHE:HD1 | 16:CJ:81:ILE:HG12 | 1.31                     | 0.94              |
| 13:CG:23:ILE:HD13 | 13:CG:36:LEU:HD11 | 1.49                     | 0.94              |
| 53:DU:24:LYS:HD2  | 53:DU:25:ALA:H    | 1.33                     | 0.94              |
| 5:A4:15:LYS:HD3   | 5:A4:26:ILE:CG1   | 1.98                     | 0.94              |
| 8:AB:2730:C:H2'   | 8:AB:2731:G:H8    | 1.28                     | 0.94              |
| 23:AQ:57:ARG:HH21 | 23:AQ:92:LYS:NZ   | 1.64                     | 0.94              |
| 24:AR:58:VAL:HG13 | 24:AR:59:ILE:HG23 | 1.47                     | 0.94              |
| 31:AY:1:ALA:HA    | 31:AY:44:ARG:HD3  | 1.50                     | 0.94              |
| 33:BA:1077:G:N2   | 33:BA:1079:G:H3'  | 1.82                     | 0.94              |
| 8:CB:1729:U:H3'   | 8:CB:1730:C:H4'   | 1.49                     | 0.94              |
| 8:CB:2640:G:H2'   | 8:CB:2641:G:H5''  | 1.48                     | 0.94              |
| 33:DA:801:U:H2'   | 33:DA:802:A:C8    | 2.03                     | 0.94              |
| 33:DA:1412:C:H2'  | 33:DA:1413:A:C8   | 2.02                     | 0.94              |
| 39:DG:14:ASP:HB3  | 39:DG:18:GLY:N    | 1.82                     | 0.94              |
| 52:DT:65:LEU:HD12 | 52:DT:66:ILE:HD13 | 1.49                     | 0.94              |
| 3:A2:19:ARG:HB2   | 3:A2:19:ARG:HH11  | 1.32                     | 0.94              |
| 8:AB:994:C:H42    | 8:AB:1160:G:H1    | 1.16                     | 0.94              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2058:A:H5''  | 8:AB:2058:A:H8     | 1.30                     | 0.94              |
| 8:AB:2438:U:O2'   | 8:AB:2439:A:H5''   | 1.66                     | 0.94              |
| 17:AK:66:LYS:HA   | 17:AK:79:PHE:O     | 1.66                     | 0.94              |
| 33:BA:1084:G:C8   | 33:BA:1085:U:H2'   | 2.03                     | 0.94              |
| 34:BB:13:VAL:HG21 | 34:BB:211:LEU:HD12 | 1.46                     | 0.94              |
| 34:BB:187:ASP:HB2 | 34:BB:203:ASP:HB3  | 1.45                     | 0.94              |
| 36:BD:94:GLU:HG3  | 36:BD:103:ARG:HH22 | 1.32                     | 0.94              |
| 3:C2:10:LEU:HB3   | 8:CB:125:A:C2      | 2.00                     | 0.94              |
| 19:CM:133:LYS:HD2 | 19:CM:134:THR:H    | 1.29                     | 0.94              |
| 33:DA:802:A:H2'   | 33:DA:803:G:H5'    | 1.47                     | 0.94              |
| 33:DA:1510:C:H42  | 33:DA:1525:G:H1    | 1.08                     | 0.94              |
| 12:AF:133:GLU:HG3 | 12:AF:134:GLN:N    | 1.82                     | 0.94              |
| 8:CB:2239:G:H5'   | 9:CC:246:PRO:CG    | 1.97                     | 0.94              |
| 34:DB:22:TRP:CZ3  | 34:DB:24:PRO:HA    | 2.03                     | 0.94              |
| 52:DT:66:ILE:HG23 | 52:DT:70:LYS:HD3   | 1.47                     | 0.94              |
| 3:A2:19:ARG:CG    | 3:A2:20:ALA:H      | 1.81                     | 0.94              |
| 4:A3:11:LYS:HD3   | 18:AL:63:LYS:HB2   | 1.49                     | 0.94              |
| 30:AX:18:LEU:HD13 | 30:AX:19:LEU:H     | 1.33                     | 0.94              |
| 39:BG:149:ALA:HB1 | 43:BK:58:THR:HG21  | 1.49                     | 0.94              |
| 44:BL:13:ARG:O    | 44:BL:14:LYS:HB3   | 1.68                     | 0.94              |
| 8:CB:135:U:H3     | 8:CB:144:A:H61     | 1.11                     | 0.94              |
| 8:CB:136:G:N2     | 26:CT:3:ARG:HE     | 1.65                     | 0.94              |
| 8:CB:1816:C:H3'   | 9:CC:62:ARG:HH12   | 1.30                     | 0.94              |
| 15:CI:118:GLY:HA3 | 15:CI:124:MET:HB3  | 1.49                     | 0.94              |
| 22:CP:73:PHE:CE2  | 22:CP:75:THR:HG23  | 2.02                     | 0.94              |
| 25:CS:29:VAL:HG11 | 25:CS:69:LEU:HB2   | 1.49                     | 0.94              |
| 44:DL:13:ARG:O    | 44:DL:14:LYS:HB3   | 1.65                     | 0.94              |
| 8:AB:38:A:O4'     | 11:AE:46:GLN:HG3   | 1.67                     | 0.94              |
| 25:AS:110:ARG:HD3 | 25:AS:110:ARG:H    | 1.31                     | 0.94              |
| 40:BH:79:ARG:HG3  | 40:BH:79:ARG:HH11  | 1.33                     | 0.94              |
| 7:CA:47:C:H5''    | 21:CO:97:PHE:CZ    | 2.02                     | 0.94              |
| 8:CB:2621:G:O2'   | 10:CD:164:GLN:HB3  | 1.68                     | 0.94              |
| 16:CJ:41:LYS:HG3  | 23:CQ:63:ARG:NH2   | 1.82                     | 0.94              |
| 21:CO:7:ARG:HH21  | 21:CO:8:ILE:HG12   | 1.32                     | 0.94              |
| 27:CU:41:VAL:HA   | 27:CU:57:ILE:HD12  | 1.48                     | 0.94              |
| 43:DK:91:GLY:HA2  | 43:DK:94:SER:HB3   | 1.47                     | 0.94              |
| 45:DM:47:LEU:HD11 | 45:DM:52:ILE:HB    | 1.50                     | 0.94              |
| 8:AB:1729:U:H3'   | 8:AB:1730:C:H4'    | 1.49                     | 0.94              |
| 8:CB:508:A:H2     | 25:CS:9:HIS:HE2    | 1.14                     | 0.94              |
| 9:CC:264:LYS:H    | 9:CC:264:LYS:HZ2   | 1.04                     | 0.94              |
| 10:CD:7:LYS:HB3   | 10:CD:201:LEU:HD21 | 1.49                     | 0.94              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1218:C:H2'  | 33:DA:1219:A:H8   | 1.30                     | 0.94              |
| 3:A2:25:LYS:H     | 3:A2:25:LYS:HE2   | 1.33                     | 0.93              |
| 8:AB:484:C:H42    | 8:AB:496:G:H1     | 1.16                     | 0.93              |
| 30:AX:22:LEU:HG   | 30:AX:47:ARG:HH22 | 1.33                     | 0.93              |
| 5:A4:1:MET:HG3    | 8:AB:2479:U:OP1   | 1.68                     | 0.93              |
| 13:AG:51:PHE:HB2  | 13:AG:68:ARG:HD3  | 1.48                     | 0.93              |
| 15:AI:85:ILE:HG21 | 15:AI:97:VAL:HG12 | 1.50                     | 0.93              |
| 18:AL:90:VAL:HG11 | 18:AL:121:THR:H   | 1.31                     | 0.93              |
| 36:BD:8:LEU:HD21  | 36:BD:31:CYS:HB3  | 1.50                     | 0.93              |
| 9:CC:42:ARG:HG2   | 9:CC:43:ASN:H     | 1.32                     | 0.93              |
| 16:CJ:10:THR:HG21 | 16:CJ:50:THR:CB   | 1.97                     | 0.93              |
| 26:CT:80:TRP:HD1  | 26:CT:81:LYS:H    | 1.13                     | 0.93              |
| 31:CY:2:LYS:HB2   | 31:CY:37:ARG:N    | 1.84                     | 0.93              |
| 33:DA:1387:G:H2'  | 33:DA:1388:C:C6   | 2.03                     | 0.93              |
| 41:DI:11:ARG:HG3  | 41:DI:11:ARG:HH11 | 1.31                     | 0.93              |
| 15:AI:18:ASN:H    | 15:AI:19:PRO:HD2  | 1.29                     | 0.93              |
| 18:AL:123:ARG:HA  | 18:AL:142:ILE:HA  | 1.49                     | 0.93              |
| 19:AM:108:VAL:O   | 19:AM:112:LEU:HG  | 1.69                     | 0.93              |
| 33:BA:698:G:H8    | 33:BA:698:G:O5'   | 1.50                     | 0.93              |
| 52:BT:70:LYS:HA   | 52:BT:73:ARG:HG2  | 1.49                     | 0.93              |
| 5:C4:1:MET:HG3    | 5:C4:2:LYS:N      | 1.82                     | 0.93              |
| 8:CB:2307:G:H21   | 8:CB:2308:G:H4'   | 1.33                     | 0.93              |
| 16:CJ:81:ILE:HA   | 16:CJ:84:ILE:HD11 | 1.48                     | 0.93              |
| 33:DA:469:C:H2'   | 33:DA:470:C:C6    | 2.02                     | 0.93              |
| 1:A0:32:THR:HB    | 1:A0:42:ILE:HG13  | 1.47                     | 0.93              |
| 8:AB:1803:A:O3'   | 9:AC:254:LYS:HD2  | 1.69                     | 0.93              |
| 22:AP:93:LYS:HE3  | 22:AP:97:TYR:CZ   | 2.03                     | 0.93              |
| 8:CB:302:C:O2'    | 8:CB:303:G:H8     | 1.50                     | 0.93              |
| 8:CB:2438:U:O2'   | 8:CB:2439:A:H5''  | 1.69                     | 0.93              |
| 8:CB:2724:U:O2'   | 8:CB:2725:A:H5'   | 1.67                     | 0.93              |
| 14:CH:90:LEU:HG   | 14:CH:92:GLY:H    | 1.30                     | 0.93              |
| 26:CT:15:HIS:HE2  | 26:CT:80:TRP:HZ2  | 1.09                     | 0.93              |
| 33:DA:312:C:H2'   | 33:DA:313:A:C8    | 2.04                     | 0.93              |
| 33:DA:562:U:H1'   | 44:DL:11:ARG:HB3  | 1.48                     | 0.93              |
| 43:DK:16:SER:HA   | 43:DK:78:ILE:HG23 | 1.51                     | 0.93              |
| 3:A2:43:THR:C     | 3:A2:45:SER:H     | 1.71                     | 0.93              |
| 8:AB:508:A:H2     | 25:AS:9:HIS:HE2   | 1.12                     | 0.93              |
| 8:AB:581:C:H5'    | 23:AQ:30:VAL:CG1  | 1.98                     | 0.93              |
| 8:AB:2678:C:H2'   | 8:AB:2679:A:H8    | 1.22                     | 0.93              |
| 11:AE:194:LYS:HZ2 | 11:AE:194:LYS:H   | 0.98                     | 0.93              |
| 33:BA:137:U:H2'   | 33:BA:138:G:C8    | 2.04                     | 0.93              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:784:G:H5''   | 9:CC:225:ASN:HD21  | 1.34                     | 0.93              |
| 8:CB:1318:U:H2'   | 8:CB:1319:C:H6     | 1.31                     | 0.93              |
| 8:CB:1813:G:C2'   | 8:CB:1814:G:H5''   | 1.99                     | 0.93              |
| 8:CB:2305:U:C5'   | 12:CF:130:GLY:HA3  | 1.98                     | 0.93              |
| 10:CD:184:ARG:HE  | 10:CD:184:ARG:HA   | 1.34                     | 0.93              |
| 33:DA:465:A:H1'   | 33:DA:466:A:C4     | 2.03                     | 0.93              |
| 33:DA:1428:A:C2   | 33:DA:1473:G:C2    | 2.55                     | 0.93              |
| 43:DK:92:ARG:HG3  | 43:DK:92:ARG:NH1   | 1.79                     | 0.93              |
| 8:AB:19:A:H1'     | 8:AB:553:G:O2'     | 1.66                     | 0.93              |
| 8:AB:968:C:H2'    | 8:AB:969:G:H5''    | 1.51                     | 0.93              |
| 8:AB:2345:G:H8    | 8:AB:2345:G:H5'    | 1.33                     | 0.93              |
| 22:AP:73:PHE:CE2  | 22:AP:75:THR:HG23  | 2.03                     | 0.93              |
| 8:CB:2636:C:H5'   | 10:CD:80:TRP:HZ2   | 1.34                     | 0.93              |
| 16:CJ:81:ILE:HG23 | 16:CJ:82:GLY:H     | 1.33                     | 0.93              |
| 18:CL:123:ARG:HA  | 18:CL:142:ILE:HA   | 1.49                     | 0.93              |
| 19:CM:8:LYS:HG2   | 19:CM:9:PHE:H      | 1.32                     | 0.93              |
| 20:CN:8:ARG:HH21  | 20:CN:46:ARG:HG3   | 1.32                     | 0.93              |
| 33:DA:382:A:O2'   | 33:DA:383:A:H5'    | 1.68                     | 0.93              |
| 33:DA:669:G:H5'   | 33:DA:669:G:C8     | 2.04                     | 0.93              |
| 8:AB:948:C:H2'    | 8:AB:949:G:H8      | 1.31                     | 0.93              |
| 10:AD:149:ASN:O   | 10:AD:150:GLN:HG2  | 1.67                     | 0.93              |
| 34:BB:22:TRP:HB3  | 34:BB:38:HIS:CE1   | 2.04                     | 0.93              |
| 36:BD:18:LEU:HD13 | 36:BD:63:ILE:HG12  | 1.50                     | 0.93              |
| 8:CB:1392:A:N6    | 26:CT:18:GLU:HG3   | 1.84                     | 0.93              |
| 8:CB:2074:U:H2'   | 8:CB:2075:U:H6     | 1.33                     | 0.93              |
| 8:CB:2503:A:H4'   | 8:CB:2504:U:OP1    | 1.62                     | 0.93              |
| 24:CR:35:PHE:HB3  | 24:CR:64:VAL:HG13  | 1.51                     | 0.93              |
| 29:CW:67:LYS:HD2  | 29:CW:71:LYS:HB3   | 1.47                     | 0.93              |
| 33:DA:831:A:H3'   | 33:DA:831:A:H8     | 1.29                     | 0.93              |
| 33:DA:1239:A:H62  | 33:DA:1299:A:H62   | 1.14                     | 0.93              |
| 39:DG:129:ASN:HB3 | 39:DG:134:VAL:HG21 | 1.48                     | 0.93              |
| 11:AE:128:ALA:HA  | 11:AE:157:LEU:HD22 | 1.51                     | 0.93              |
| 36:BD:13:ARG:HG3  | 36:BD:14:GLU:N     | 1.80                     | 0.93              |
| 7:CA:42:C:C5      | 12:CF:65:LEU:HD22  | 2.03                     | 0.93              |
| 26:CT:28:ASN:HB2  | 26:CT:87:LEU:HB2   | 1.50                     | 0.93              |
| 26:CT:62:VAL:HG23 | 26:CT:63:VAL:H     | 1.31                     | 0.93              |
| 33:DA:355:C:H2'   | 33:DA:356:A:H8     | 1.32                     | 0.93              |
| 34:DB:165:ALA:HB1 | 34:DB:169:HIS:HA   | 1.49                     | 0.93              |
| 39:DG:14:ASP:HB3  | 39:DG:18:GLY:H     | 1.30                     | 0.93              |
| 3:A2:13:ASN:HA    | 3:A2:18:PHE:CD1    | 2.04                     | 0.93              |
| 8:AB:784:G:H5''   | 9:AC:225:ASN:HD21  | 1.32                     | 0.93              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:C3:12:ARG:NH1    | 18:CL:62:PRO:HG3  | 1.83                     | 0.93              |
| 7:CA:29:A:H2       | 7:CA:30:C:C4      | 1.87                     | 0.93              |
| 16:CJ:89:PHE:HB2   | 16:CJ:92:MET:H    | 1.33                     | 0.93              |
| 17:CK:35:VAL:HG13  | 17:CK:65:THR:HG23 | 1.49                     | 0.93              |
| 33:DA:1394:A:C8    | 33:DA:1501:C:H1'  | 2.02                     | 0.93              |
| 49:DQ:58:VAL:HG12  | 49:DQ:77:VAL:HG22 | 1.49                     | 0.93              |
| 10:AD:33:ARG:HD3   | 10:AD:94:GLN:N    | 1.83                     | 0.93              |
| 13:AG:18:ILE:HG22  | 13:AG:23:ILE:HD11 | 1.51                     | 0.93              |
| 14:AH:31:VAL:HG13  | 14:AH:36:ALA:HA   | 1.51                     | 0.93              |
| 40:BH:91:LEU:HB3   | 40:BH:92:PRO:HD3  | 1.50                     | 0.93              |
| 5:C4:1:MET:CG      | 5:C4:2:LYS:H      | 1.82                     | 0.93              |
| 8:CB:271:G:H1'     | 8:CB:272:A:C8     | 2.04                     | 0.93              |
| 8:CB:1216:G:C6     | 8:CB:1217:U:C5    | 2.57                     | 0.93              |
| 8:CB:1617:C:H2'    | 8:CB:1617:C:O2    | 1.65                     | 0.93              |
| 10:CD:184:ARG:HH11 | 22:CP:4:ILE:HG21  | 1.33                     | 0.93              |
| 33:DA:550:G:H2'    | 33:DA:551:U:H6    | 1.34                     | 0.93              |
| 33:DA:674:G:C2'    | 33:DA:675:A:H8    | 1.80                     | 0.93              |
| 6:A5:153:ARG:HG2   | 6:A5:154:ILE:N    | 1.84                     | 0.92              |
| 8:AB:1752:C:H42    | 8:AB:1756:G:H1    | 1.14                     | 0.92              |
| 8:AB:2060:A:H1'    | 55:AB:4594:HOH:O  | 1.68                     | 0.92              |
| 8:AB:2888:C:H2'    | 8:AB:2889:C:H6    | 1.32                     | 0.92              |
| 16:AJ:81:ILE:HG23  | 16:AJ:82:GLY:H    | 1.31                     | 0.92              |
| 18:AL:94:THR:HG23  | 18:AL:95:LEU:H    | 1.31                     | 0.92              |
| 15:CI:21:PRO:HB2   | 15:CI:22:PRO:HD3  | 1.50                     | 0.92              |
| 33:DA:125:U:H2'    | 33:DA:126:G:C8    | 2.04                     | 0.92              |
| 7:AA:55:U:H2'      | 7:AA:56:G:H8      | 1.34                     | 0.92              |
| 8:AB:454:A:H3'     | 8:AB:455:C:H5'    | 1.50                     | 0.92              |
| 8:AB:608:A:H2'     | 8:AB:609:A:H8     | 1.34                     | 0.92              |
| 8:AB:624:C:H2'     | 8:AB:625:G:H8     | 1.33                     | 0.92              |
| 33:BA:238:A:H2'    | 33:BA:239:U:H5''  | 1.49                     | 0.92              |
| 8:CB:67:U:H2'      | 8:CB:68:G:H8      | 1.29                     | 0.92              |
| 8:CB:98:G:O2'      | 8:CB:103:A:H1'    | 1.68                     | 0.92              |
| 8:CB:1225:G:H5''   | 24:CR:90:ARG:HE   | 1.34                     | 0.92              |
| 8:CB:1651:G:H5''   | 20:CN:39:PRO:HG2  | 1.49                     | 0.92              |
| 25:CS:32:ALA:HA    | 25:CS:35:ILE:HG22 | 1.51                     | 0.92              |
| 34:DB:14:HIS:HE1   | 34:DB:42:LEU:HD21 | 1.34                     | 0.92              |
| 3:A2:16:HIS:HE1    | 8:AB:465:G:O2'    | 1.51                     | 0.92              |
| 42:BJ:52:LEU:HB2   | 46:BN:80:ARG:HD2  | 1.49                     | 0.92              |
| 7:CA:44:G:H1'      | 7:CA:47:C:N4      | 1.84                     | 0.92              |
| 7:CA:99:A:C4       | 7:CA:100:G:C8     | 2.57                     | 0.92              |
| 33:DA:801:U:O2'    | 33:DA:802:A:H8    | 1.51                     | 0.92              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 23:AQ:79:ILE:HA   | 23:AQ:82:LEU:HD12  | 1.50                     | 0.92              |
| 33:BA:450:G:N2    | 33:BA:482:A:H61    | 1.67                     | 0.92              |
| 33:BA:981:U:H3'   | 33:BA:982:U:H5''   | 1.50                     | 0.92              |
| 8:CB:567:U:N3     | 8:CB:568:U:C5      | 2.38                     | 0.92              |
| 10:CD:56:LYS:NZ   | 10:CD:59:ARG:HA    | 1.84                     | 0.92              |
| 21:CO:25:ARG:HB3  | 21:CO:94:ARG:HH12  | 1.33                     | 0.92              |
| 33:DA:1008:U:H2'  | 33:DA:1009:U:H4'   | 1.52                     | 0.92              |
| 8:AB:657:U:H2'    | 8:AB:658:U:C5      | 2.04                     | 0.92              |
| 8:AB:1784:A:H4'   | 8:AB:1785:A:C5'    | 1.99                     | 0.92              |
| 33:BA:227:G:H2'   | 33:BA:228:A:H8     | 1.34                     | 0.92              |
| 8:CB:1025:G:C8    | 8:CB:1135:C:H1'    | 2.04                     | 0.92              |
| 8:CB:2345:G:H8    | 8:CB:2345:G:H5'    | 1.35                     | 0.92              |
| 8:CB:2682:A:H2    | 8:CB:2683:C:C2     | 1.86                     | 0.92              |
| 13:CG:34:ARG:NE   | 13:CG:70:LEU:HD21  | 1.84                     | 0.92              |
| 22:CP:52:ARG:O    | 22:CP:60:VAL:HG11  | 1.69                     | 0.92              |
| 33:DA:137:U:H2'   | 33:DA:138:G:C8     | 2.04                     | 0.92              |
| 33:DA:1216:A:H2'  | 33:DA:1217:C:H6    | 1.29                     | 0.92              |
| 47:DO:3:SER:HB3   | 47:DO:6:ALA:HB3    | 1.52                     | 0.92              |
| 13:AG:136:ASP:HB3 | 13:AG:139:VAL:HG23 | 1.50                     | 0.92              |
| 8:CB:485:C:O2     | 25:CS:60:HIS:HE1   | 1.53                     | 0.92              |
| 8:CB:614:A:H5''   | 8:CB:616:A:H62     | 1.32                     | 0.92              |
| 9:CC:44:ASN:O     | 9:CC:45:ASN:HB3    | 1.70                     | 0.92              |
| 12:CF:133:GLU:HG3 | 12:CF:134:GLN:N    | 1.83                     | 0.92              |
| 48:DP:5:ARG:HA    | 48:DP:71:VAL:HG11  | 1.52                     | 0.92              |
| 33:BA:9:G:H2'     | 33:BA:10:A:C8      | 2.05                     | 0.92              |
| 33:BA:570:G:H2'   | 33:BA:571:U:H5     | 1.33                     | 0.92              |
| 33:BA:1320:C:H6   | 51:BS:69:LYS:HD2   | 1.35                     | 0.92              |
| 8:CB:393:C:C2     | 8:CB:394:C:H5      | 1.88                     | 0.92              |
| 33:DA:781:A:H2'   | 33:DA:782:A:H5'    | 1.48                     | 0.92              |
| 53:DU:39:LYS:C    | 53:DU:41:THR:H     | 1.72                     | 0.92              |
| 24:AR:78:ARG:HE   | 24:AR:88:GLY:HA2   | 1.34                     | 0.92              |
| 29:AW:59:PHE:CE1  | 29:AW:81:ILE:HD13  | 2.03                     | 0.92              |
| 32:AZ:21:VAL:HG12 | 32:AZ:23:LYS:HG2   | 1.50                     | 0.92              |
| 33:BA:570:G:H2'   | 33:BA:571:U:C5     | 2.04                     | 0.92              |
| 33:BA:1465:A:C5   | 33:BA:1466:C:C5    | 2.57                     | 0.92              |
| 44:BL:66:ILE:HD11 | 44:BL:73:LEU:HD12  | 1.51                     | 0.92              |
| 8:CB:65:U:H2'     | 8:CB:66:C:H6       | 1.32                     | 0.92              |
| 8:CB:2866:U:O2    | 8:CB:2868:A:H1'    | 1.70                     | 0.92              |
| 11:CE:138:LEU:C   | 11:CE:143:LEU:HD11 | 1.89                     | 0.92              |
| 18:CL:19:LEU:HD13 | 18:CL:19:LEU:N     | 1.85                     | 0.92              |
| 21:CO:92:PHE:CD2  | 21:CO:93:ASP:N     | 2.36                     | 0.92              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:970:C:H5    | 33:BA:1231:G:HO2' | 1.16                     | 0.92              |
| 33:BA:1102:A:H5'' | 33:BA:1102:A:H8   | 1.35                     | 0.92              |
| 9:CC:241:LYS:HZ2  | 9:CC:241:LYS:HB3  | 1.34                     | 0.92              |
| 28:CV:36:ALA:HB1  | 28:CV:37:PRO:CD   | 2.00                     | 0.92              |
| 33:DA:397:A:H3'   | 33:DA:397:A:N3    | 1.85                     | 0.92              |
| 42:DJ:52:LEU:HA   | 42:DJ:62:ARG:HG2  | 1.49                     | 0.92              |
| 43:DK:66:ALA:HB1  | 43:DK:99:LEU:HD13 | 1.49                     | 0.92              |
| 3:A2:21:ARG:HH21  | 8:AB:466:A:H5''   | 1.35                     | 0.92              |
| 20:AN:38:LEU:HB3  | 20:AN:39:PRO:HD3  | 1.51                     | 0.92              |
| 26:AT:28:ASN:HB2  | 26:AT:87:LEU:HB2  | 1.52                     | 0.92              |
| 29:AW:38:ARG:HG3  | 29:AW:39:GLN:N    | 1.83                     | 0.92              |
| 33:BA:576:C:H3'   | 33:BA:577:G:H5''  | 1.52                     | 0.92              |
| 33:DA:876:C:H1'   | 40:DH:11:THR:HG21 | 1.49                     | 0.92              |
| 33:DA:1458:G:OP1  | 52:DT:26:MET:HA   | 1.69                     | 0.92              |
| 8:AB:604:G:H5''   | 8:AB:604:G:H8     | 1.35                     | 0.91              |
| 8:AB:1570:A:H2'   | 8:AB:1571:A:C8    | 2.03                     | 0.91              |
| 13:AG:156:TYR:HB3 | 13:AG:157:LYS:HE3 | 1.52                     | 0.91              |
| 14:AH:26:ALA:HB2  | 14:AH:30:LEU:HD12 | 1.50                     | 0.91              |
| 23:AQ:13:HIS:HE1  | 23:AQ:31:TYR:CE2  | 1.87                     | 0.91              |
| 26:AT:53:VAL:HB   | 26:AT:87:LEU:HD11 | 1.49                     | 0.91              |
| 5:C4:24:ARG:HB2   | 5:C4:36:ARG:HA    | 1.51                     | 0.91              |
| 8:CB:782:A:H4'    | 8:CB:783:A:OP1    | 1.68                     | 0.91              |
| 18:CL:58:TYR:N    | 18:CL:58:TYR:CD2  | 2.33                     | 0.91              |
| 34:DB:85:SER:O    | 34:DB:86:CYS:HB2  | 1.69                     | 0.91              |
| 41:DI:11:ARG:HH11 | 41:DI:11:ARG:CG   | 1.82                     | 0.91              |
| 8:AB:396:G:H4'    | 32:AZ:28:VAL:HG21 | 1.52                     | 0.91              |
| 8:AB:624:C:H2'    | 8:AB:625:G:C8     | 2.04                     | 0.91              |
| 8:AB:2503:A:H4'   | 8:AB:2504:U:OP1   | 1.69                     | 0.91              |
| 8:AB:2561:U:H2'   | 8:AB:2562:U:H5''  | 1.53                     | 0.91              |
| 8:AB:2807:U:H1'   | 8:AB:2892:G:H21   | 1.35                     | 0.91              |
| 32:AZ:28:VAL:HG23 | 32:AZ:29:GLY:N    | 1.84                     | 0.91              |
| 7:CA:29:A:C2      | 7:CA:30:C:C4      | 2.56                     | 0.91              |
| 8:CB:615:U:H5''   | 8:CB:616:A:H8     | 1.32                     | 0.91              |
| 24:CR:44:GLY:HA2  | 24:CR:51:VAL:O    | 1.70                     | 0.91              |
| 33:DA:381:C:H2'   | 33:DA:382:A:C8    | 2.05                     | 0.91              |
| 33:DA:685:G:H21   | 33:DA:706:A:H62   | 1.19                     | 0.91              |
| 4:A3:34:LYS:NZ    | 4:A3:34:LYS:HB2   | 1.85                     | 0.91              |
| 5:A4:5:ALA:HB1    | 8:AB:2466:C:OP1   | 1.70                     | 0.91              |
| 8:AB:657:U:H2'    | 8:AB:658:U:H6     | 1.35                     | 0.91              |
| 8:AB:2751:G:N2    | 13:AG:1:SER:HB3   | 1.85                     | 0.91              |
| 9:AC:257:ARG:C    | 9:AC:261:ARG:HH12 | 1.74                     | 0.91              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 18:AL:57:LEU:HD12  | 18:AL:57:LEU:H    | 1.35                     | 0.91              |
| 18:AL:90:VAL:HG11  | 18:AL:121:THR:N   | 1.85                     | 0.91              |
| 51:BS:35:ARG:HB3   | 51:BS:71:GLY:HA3  | 1.52                     | 0.91              |
| 8:CB:2078:C:H2'    | 8:CB:2079:U:H6    | 1.36                     | 0.91              |
| 9:CC:261:ARG:HH11  | 9:CC:261:ARG:HG2  | 1.33                     | 0.91              |
| 22:CP:13:LYS:HD3   | 22:CP:78:PRO:HG3  | 1.50                     | 0.91              |
| 38:DF:2:ARG:HD3    | 38:DF:91:ARG:HD2  | 1.51                     | 0.91              |
| 8:AB:1429:G:H8     | 8:AB:1429:G:H5'   | 1.34                     | 0.91              |
| 33:BA:645:G:H5'    | 33:BA:645:G:H8    | 1.35                     | 0.91              |
| 33:BA:1084:G:H8    | 33:BA:1085:U:H2'  | 1.35                     | 0.91              |
| 43:DK:124:LYS:HA   | 53:DU:33:ARG:NH1  | 1.84                     | 0.91              |
| 8:AB:515:A:H1'     | 8:AB:581:C:H1'    | 1.51                     | 0.91              |
| 16:AJ:89:PHE:HB2   | 16:AJ:92:MET:H    | 1.34                     | 0.91              |
| 17:AK:19:VAL:HB    | 17:AK:41:ILE:HD11 | 1.49                     | 0.91              |
| 18:AL:56:PRO:HA    | 18:AL:60:ARG:HH12 | 1.33                     | 0.91              |
| 22:AP:52:ARG:O     | 22:AP:60:VAL:HG11 | 1.70                     | 0.91              |
| 45:BM:106:ARG:HH12 | 45:BM:109:LYS:HE2 | 1.35                     | 0.91              |
| 8:CB:396:G:H8      | 8:CB:396:G:H5'    | 1.32                     | 0.91              |
| 8:CB:1570:A:H2'    | 8:CB:1571:A:C8    | 2.05                     | 0.91              |
| 13:CG:19:ASN:HB3   | 13:CG:22:VAL:HB   | 1.50                     | 0.91              |
| 33:DA:594:U:H2'    | 33:DA:595:A:C8    | 2.06                     | 0.91              |
| 33:DA:801:U:HO2'   | 33:DA:802:A:H8    | 1.18                     | 0.91              |
| 8:AB:813:U:OP2     | 18:AL:33:ARG:HA   | 1.69                     | 0.91              |
| 9:AC:104:LEU:O     | 9:AC:106:PRO:HD3  | 1.70                     | 0.91              |
| 20:AN:65:LEU:HB3   | 20:AN:69:ARG:NH1  | 1.86                     | 0.91              |
| 47:BO:10:ILE:HD11  | 47:BO:29:ALA:HB1  | 1.51                     | 0.91              |
| 47:BO:63:ARG:HG3   | 47:BO:63:ARG:HH11 | 1.32                     | 0.91              |
| 19:CM:80:VAL:HG12  | 19:CM:81:ARG:N    | 1.83                     | 0.91              |
| 36:DD:142:VAL:HG23 | 36:DD:179:GLY:HA3 | 1.51                     | 0.91              |
| 8:AB:115:C:C4      | 8:AB:116:C:H5     | 1.88                     | 0.91              |
| 8:AB:2693:G:C2'    | 8:AB:2694:G:H5''  | 1.99                     | 0.91              |
| 16:AJ:34:ARG:HG3   | 16:AJ:39:LYS:HE2  | 1.52                     | 0.91              |
| 30:AX:41:HIS:HB3   | 30:AX:45:GLN:CD   | 1.90                     | 0.91              |
| 33:BA:677:U:H3     | 33:BA:714:G:H22   | 0.99                     | 0.91              |
| 8:CB:321:U:H4'     | 11:CE:159:LEU:HB3 | 1.53                     | 0.91              |
| 23:CQ:63:ARG:HH11  | 23:CQ:63:ARG:HB3  | 1.35                     | 0.91              |
| 33:DA:566:G:H5'    | 33:DA:566:G:C8    | 2.04                     | 0.91              |
| 33:DA:963:G:H1     | 33:DA:972:C:H42   | 1.18                     | 0.91              |
| 36:DD:116:LEU:HA   | 36:DD:119:HIS:HB2 | 1.50                     | 0.91              |
| 8:AB:2278:A:N7     | 29:AW:8:SER:HB3   | 1.85                     | 0.91              |
| 28:AV:36:ALA:HB1   | 28:AV:37:PRO:CD   | 1.99                     | 0.91              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:411:A:H62   | 33:BA:413:G:H21   | 0.91                     | 0.91              |
| 8:CB:1066:U:H6    | 8:CB:1066:U:H3'   | 1.36                     | 0.91              |
| 8:CB:2311:A:C5    | 12:CF:39:VAL:HG23 | 2.06                     | 0.91              |
| 33:DA:785:G:C2'   | 33:DA:786:G:H5''  | 2.01                     | 0.91              |
| 33:BA:240:G:H5''  | 33:BA:240:G:H8    | 1.36                     | 0.91              |
| 5:C4:16:ILE:HD11  | 8:CB:1033:U:H2'   | 1.53                     | 0.91              |
| 9:CC:220:ARG:HG3  | 9:CC:220:ARG:HH11 | 1.34                     | 0.91              |
| 21:CO:56:LYS:HB3  | 21:CO:62:LEU:HG   | 1.52                     | 0.91              |
| 33:DA:1252:A:H61  | 33:DA:1285:A:H61  | 1.13                     | 0.91              |
| 8:AB:398:C:H3'    | 32:AZ:49:ARG:NH2  | 1.86                     | 0.91              |
| 19:AM:50:ARG:HA   | 19:AM:50:ARG:NH1  | 1.85                     | 0.91              |
| 27:AU:26:ASN:HB3  | 27:AU:34:ILE:HD12 | 1.53                     | 0.91              |
| 33:BA:1055:A:H1'  | 35:BC:155:ARG:NH1 | 1.86                     | 0.91              |
| 9:CC:179:GLU:CG   | 9:CC:266:ILE:HA   | 2.01                     | 0.91              |
| 11:CE:130:LYS:O   | 11:CE:132:LYS:HE2 | 1.71                     | 0.91              |
| 20:CN:67:PHE:HE1  | 20:CN:72:ASP:H    | 1.16                     | 0.91              |
| 2:A1:22:THR:HB    | 4:A3:34:LYS:HE3   | 1.52                     | 0.90              |
| 23:AQ:63:ARG:HH11 | 23:AQ:63:ARG:HB3  | 1.31                     | 0.90              |
| 28:AV:29:ILE:HD13 | 28:AV:30:ILE:H    | 1.32                     | 0.90              |
| 52:BT:68:LYS:HG3  | 52:BT:69:ASN:H    | 1.36                     | 0.90              |
| 15:CI:4:VAL:HG22  | 15:CI:5:GLN:HG3   | 1.52                     | 0.90              |
| 33:DA:801:U:C2'   | 33:DA:802:A:H8    | 1.83                     | 0.90              |
| 35:DC:11:LEU:HB3  | 35:DC:17:TRP:NE1  | 1.85                     | 0.90              |
| 40:DH:111:THR:H   | 40:DH:114:ALA:HB3 | 1.34                     | 0.90              |
| 8:AB:1813:G:C2'   | 8:AB:1814:G:H5''  | 2.00                     | 0.90              |
| 10:AD:11:MET:O    | 10:AD:23:PRO:HD2  | 1.70                     | 0.90              |
| 16:AJ:81:ILE:HA   | 16:AJ:84:ILE:HD11 | 1.53                     | 0.90              |
| 33:BA:9:G:H2'     | 33:BA:10:A:H8     | 1.34                     | 0.90              |
| 33:BA:782:A:H62   | 33:BA:800:G:H21   | 1.20                     | 0.90              |
| 34:BB:19:THR:HA   | 34:BB:37:VAL:HB   | 1.52                     | 0.90              |
| 45:BM:44:ILE:HD12 | 45:BM:44:ILE:H    | 1.36                     | 0.90              |
| 8:CB:624:C:H2'    | 8:CB:625:G:H8     | 1.36                     | 0.90              |
| 8:CB:681:G:H2'    | 8:CB:682:G:H8     | 1.37                     | 0.90              |
| 24:CR:64:VAL:HA   | 24:CR:101:ILE:H   | 1.33                     | 0.90              |
| 25:CS:84:ARG:NH2  | 25:CS:98:LYS:HE3  | 1.85                     | 0.90              |
| 38:DF:64:VAL:HG12 | 38:DF:65:GLU:H    | 1.37                     | 0.90              |
| 1:A0:5:ASN:ND2    | 8:AB:2019:A:H62   | 1.68                     | 0.90              |
| 2:A1:12:SER:HA    | 2:A1:50:GLU:HB3   | 1.52                     | 0.90              |
| 8:AB:614:A:H5''   | 8:AB:616:A:H62    | 1.34                     | 0.90              |
| 8:AB:2512:C:H1'   | 10:AD:146:ILE:CD1 | 2.01                     | 0.90              |
| 21:AO:24:THR:HG22 | 21:AO:41:ALA:HA   | 1.53                     | 0.90              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:AV:29:ILE:HD13 | 28:AV:30:ILE:N    | 1.84                     | 0.90              |
| 8:CB:528:A:C2     | 8:CB:2043:C:H4'   | 2.06                     | 0.90              |
| 8:CB:1825:U:H5'   | 9:CC:244:VAL:HB   | 1.53                     | 0.90              |
| 8:CB:2333:A:O4'   | 8:CB:2335:A:H1'   | 1.72                     | 0.90              |
| 8:CB:2658:C:OP1   | 13:CG:159:LYS:HE3 | 1.71                     | 0.90              |
| 19:CM:80:VAL:HG12 | 19:CM:81:ARG:H    | 1.36                     | 0.90              |
| 52:DT:43:LYS:HB3  | 52:DT:86:ALA:HB3  | 1.52                     | 0.90              |
| 8:AB:553:G:C2'    | 8:AB:554:U:H5'    | 2.02                     | 0.90              |
| 9:AC:155:ARG:CD   | 9:AC:157:ALA:HB3  | 2.02                     | 0.90              |
| 36:BD:13:ARG:HG3  | 36:BD:14:GLU:H    | 1.34                     | 0.90              |
| 8:CB:251:A:OP1    | 18:CL:59:ARG:NH2  | 2.03                     | 0.90              |
| 29:CW:39:GLN:N    | 29:CW:68:PHE:HB2  | 1.87                     | 0.90              |
| 33:DA:448:A:H62   | 33:DA:486:U:H3    | 1.06                     | 0.90              |
| 18:AL:37:GLY:N    | 18:AL:41:ARG:HD3  | 1.85                     | 0.90              |
| 33:BA:679:C:H2'   | 33:BA:680:C:H5''  | 1.50                     | 0.90              |
| 33:BA:1512:U:H2'  | 33:BA:1513:A:H5'' | 1.51                     | 0.90              |
| 34:BB:187:ASP:HB2 | 34:BB:203:ASP:CB  | 2.01                     | 0.90              |
| 51:BS:54:ARG:HG2  | 51:BS:54:ARG:HH11 | 1.37                     | 0.90              |
| 3:C2:25:LYS:H     | 3:C2:25:LYS:HE2   | 1.34                     | 0.90              |
| 8:CB:141:G:H3'    | 8:CB:142:A:O4'    | 1.72                     | 0.90              |
| 8:CB:533:G:H2'    | 8:CB:534:U:C6     | 2.07                     | 0.90              |
| 8:CB:598:U:H5'    | 18:CL:21:ARG:HG3  | 1.49                     | 0.90              |
| 8:CB:624:C:H2'    | 8:CB:625:G:C8     | 2.06                     | 0.90              |
| 10:CD:31:ALA:CB   | 10:CD:95:SER:HB3  | 2.00                     | 0.90              |
| 8:CB:402:A:H2'    | 8:CB:403:U:H5'    | 1.52                     | 0.90              |
| 8:CB:1903:G:OP1   | 9:CC:239:PHE:HA   | 1.71                     | 0.90              |
| 19:CM:50:ARG:HA   | 19:CM:50:ARG:NH1  | 1.87                     | 0.90              |
| 21:CO:41:ALA:HB2  | 21:CO:48:LEU:HD21 | 1.53                     | 0.90              |
| 33:DA:18:C:H1'    | 33:DA:1079:G:H21  | 1.35                     | 0.90              |
| 48:DP:21:VAL:HB   | 48:DP:34:GLU:O    | 1.72                     | 0.90              |
| 8:AB:615:U:H5''   | 8:AB:616:A:H8     | 1.37                     | 0.90              |
| 8:AB:2307:G:H21   | 8:AB:2308:G:H4'   | 1.33                     | 0.90              |
| 33:BA:34:C:H2'    | 33:BA:35:G:C8     | 2.06                     | 0.90              |
| 33:BA:394:G:H2'   | 33:BA:395:C:C6    | 2.06                     | 0.90              |
| 34:BB:15:PHE:HD1  | 34:BB:16:GLY:H    | 1.20                     | 0.90              |
| 8:CB:1295:C:H2'   | 8:CB:1296:G:C8    | 2.07                     | 0.90              |
| 8:CB:1429:G:H8    | 8:CB:1429:G:H5'   | 1.35                     | 0.90              |
| 11:CE:142:ALA:HB1 | 11:CE:145:ASP:HB2 | 1.53                     | 0.90              |
| 18:CL:34:GLY:CA   | 24:CR:85:LYS:HD3  | 2.02                     | 0.90              |
| 24:CR:89:HIS:CD2  | 24:CR:90:ARG:H    | 1.90                     | 0.90              |
| 8:AB:458:G:H22    | 8:AB:469:G:H2'    | 1.35                     | 0.90              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:571:U:C4     | 8:AB:2030:A:N1     | 2.40                     | 0.90              |
| 37:BE:87:VAL:HG12 | 37:BE:92:ARG:HG2   | 1.54                     | 0.90              |
| 8:CB:104:A:H2'    | 8:CB:105:C:H6      | 1.37                     | 0.90              |
| 8:CB:2250:G:O6    | 19:CM:82:MET:SD    | 2.30                     | 0.90              |
| 8:AB:402:A:H2'    | 8:AB:403:U:H5'     | 1.53                     | 0.90              |
| 9:AC:53:ILE:HG12  | 9:AC:218:THR:OG1   | 1.72                     | 0.90              |
| 9:AC:243:PRO:HA   | 9:AC:249:VAL:HG23  | 1.53                     | 0.90              |
| 32:AZ:49:ARG:HA   | 32:AZ:52:ALA:HB3   | 1.54                     | 0.90              |
| 8:CB:2763:G:H5'   | 8:CB:2763:G:C8     | 2.04                     | 0.90              |
| 20:CN:3:HIS:HB2   | 20:CN:4:ARG:CZ     | 2.02                     | 0.90              |
| 33:DA:942:G:H21   | 41:DI:125:GLN:HE22 | 1.08                     | 0.90              |
| 36:DD:113:ALA:O   | 36:DD:117:VAL:HG23 | 1.70                     | 0.90              |
| 8:AB:547:A:H2'    | 8:AB:548:G:H5'     | 1.54                     | 0.90              |
| 8:AB:2285:C:H1'   | 8:AB:2288:A:N7     | 1.85                     | 0.90              |
| 18:AL:37:GLY:H    | 18:AL:41:ARG:HD3   | 1.35                     | 0.90              |
| 18:AL:82:LEU:HD23 | 18:AL:86:GLU:HG3   | 1.52                     | 0.90              |
| 8:CB:1829:A:H5''  | 8:CB:1829:A:H8     | 1.35                     | 0.90              |
| 8:CB:2763:G:H5'   | 8:CB:2763:G:H8     | 1.37                     | 0.90              |
| 9:CC:241:LYS:HB3  | 9:CC:241:LYS:NZ    | 1.87                     | 0.90              |
| 14:CH:3:VAL:CB    | 14:CH:37:VAL:HG11  | 2.02                     | 0.90              |
| 19:CM:9:PHE:CE2   | 19:CM:12:MET:HG2   | 2.07                     | 0.90              |
| 19:CM:108:VAL:O   | 19:CM:112:LEU:HG   | 1.70                     | 0.90              |
| 33:DA:950:U:H2'   | 33:DA:951:G:H8     | 1.36                     | 0.90              |
| 42:DJ:15:HIS:HA   | 42:DJ:18:ILE:HG22  | 1.52                     | 0.90              |
| 43:DK:126:ARG:HG2 | 43:DK:126:ARG:NH1  | 1.79                     | 0.90              |
| 51:DS:31:ARG:HG3  | 51:DS:49:ALA:HB3   | 1.54                     | 0.90              |
| 53:DU:4:LYS:HD2   | 53:DU:6:ARG:HH12   | 1.34                     | 0.90              |
| 8:AB:311:A:H3'    | 8:AB:312:G:H8      | 1.37                     | 0.89              |
| 8:AB:1069:A:H5'   | 8:AB:1070:A:H8     | 1.38                     | 0.89              |
| 8:AB:1788:C:H2'   | 8:AB:1789:A:O4'    | 1.72                     | 0.89              |
| 26:AT:1:MET:HG3   | 26:AT:2:ILE:H      | 1.35                     | 0.89              |
| 33:BA:312:C:H2'   | 33:BA:313:A:C8     | 2.06                     | 0.89              |
| 8:CB:968:C:H2'    | 8:CB:969:G:H5''    | 1.54                     | 0.89              |
| 22:CP:43:GLU:HG3  | 33:DA:346:G:OP1    | 1.71                     | 0.89              |
| 8:AB:2763:G:H5'   | 8:AB:2763:G:C8     | 2.06                     | 0.89              |
| 21:AO:41:ALA:HB1  | 21:AO:42:PRO:HD2   | 1.54                     | 0.89              |
| 23:AQ:108:LEU:HA  | 23:AQ:111:LYS:HE3  | 1.55                     | 0.89              |
| 2:C1:44:GLN:HE21  | 2:C1:45:HIS:N      | 1.70                     | 0.89              |
| 8:CB:24:G:H1'     | 25:CS:77:ASP:HB3   | 1.52                     | 0.89              |
| 8:CB:85:G:N3      | 8:CB:103:A:H2      | 1.71                     | 0.89              |
| 8:CB:123:G:H5''   | 8:CB:1375:U:O2'    | 1.71                     | 0.89              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:136:G:N2     | 26:CT:3:ARG:HH21  | 1.69                     | 0.89              |
| 8:CB:347:A:H8     | 8:CB:347:A:H5'    | 1.35                     | 0.89              |
| 8:CB:666:A:C2'    | 8:CB:667:U:H5''   | 2.02                     | 0.89              |
| 8:CB:2058:A:H5''  | 8:CB:2058:A:H8    | 1.36                     | 0.89              |
| 9:CC:12:ARG:HH11  | 9:CC:18:VAL:HG21  | 1.37                     | 0.89              |
| 9:CC:244:VAL:HG22 | 9:CC:245:THR:H    | 1.34                     | 0.89              |
| 13:CG:79:THR:HG23 | 13:CG:80:GLU:H    | 1.36                     | 0.89              |
| 19:CM:16:ARG:HH12 | 19:CM:72:PRO:HG2  | 1.37                     | 0.89              |
| 27:CU:92:VAL:HG22 | 27:CU:94:PHE:H    | 1.37                     | 0.89              |
| 33:DA:577:G:C8    | 33:DA:816:A:C6    | 2.60                     | 0.89              |
| 19:AM:8:LYS:N     | 19:AM:8:LYS:HE2   | 1.87                     | 0.89              |
| 21:AO:25:ARG:HH11 | 21:AO:25:ARG:CG   | 1.84                     | 0.89              |
| 23:AQ:57:ARG:HH21 | 23:AQ:92:LYS:HZ3  | 1.20                     | 0.89              |
| 33:BA:42:G:H22    | 33:BA:401:C:H1'   | 1.36                     | 0.89              |
| 36:BD:4:LEU:H     | 36:BD:4:LEU:HD23  | 1.35                     | 0.89              |
| 48:BP:18:GLN:HE21 | 48:BP:35:ARG:HD2  | 1.37                     | 0.89              |
| 13:CG:8:VAL:HB    | 13:CG:49:LEU:HB2  | 1.53                     | 0.89              |
| 27:CU:24:VAL:O    | 27:CU:25:LYS:HB2  | 1.73                     | 0.89              |
| 33:DA:475:C:H2'   | 33:DA:476:U:H6    | 1.35                     | 0.89              |
| 33:DA:1259:C:O2'  | 33:DA:1284:C:H1'  | 1.73                     | 0.89              |
| 33:DA:1511:G:H1   | 33:DA:1524:C:H42  | 1.08                     | 0.89              |
| 36:DD:72:ARG:O    | 36:DD:75:TYR:HB3  | 1.72                     | 0.89              |
| 53:DU:17:ARG:HD2  | 53:DU:17:ARG:H    | 1.36                     | 0.89              |
| 8:AB:2080:A:H2'   | 8:AB:2081:U:H6    | 1.36                     | 0.89              |
| 19:AM:50:ARG:NH2  | 19:AM:53:MET:HB3  | 1.88                     | 0.89              |
| 41:BI:59:LYS:HD2  | 41:BI:60:LEU:HG   | 1.53                     | 0.89              |
| 8:CB:458:G:H22    | 8:CB:469:G:H2'    | 1.37                     | 0.89              |
| 8:CB:2324:U:H4'   | 8:CB:2325:G:OP2   | 1.70                     | 0.89              |
| 19:CM:40:ARG:HG3  | 19:CM:92:TRP:CE2  | 2.07                     | 0.89              |
| 33:DA:705:G:H5'   | 33:DA:705:G:C8    | 2.07                     | 0.89              |
| 8:AB:1816:C:H3'   | 9:AC:62:ARG:HH12  | 1.34                     | 0.89              |
| 22:AP:43:GLU:HG3  | 33:BA:346:G:OP1   | 1.72                     | 0.89              |
| 32:AZ:49:ARG:C    | 32:AZ:51:VAL:H    | 1.76                     | 0.89              |
| 8:CB:2747:G:N2    | 8:CB:2748:A:N7    | 2.18                     | 0.89              |
| 8:AB:1256:G:C4    | 8:AB:1257:C:C5    | 2.60                     | 0.89              |
| 8:AB:1829:A:H8    | 8:AB:1829:A:C5'   | 1.86                     | 0.89              |
| 30:AX:22:LEU:HA   | 30:AX:47:ARG:CZ   | 2.02                     | 0.89              |
| 33:BA:1436:U:H2'  | 33:BA:1437:A:H8   | 1.34                     | 0.89              |
| 8:CB:362:A:H2'    | 8:CB:363:G:H8     | 1.35                     | 0.89              |
| 8:CB:480:A:H4'    | 27:CU:40:LEU:HD13 | 1.55                     | 0.89              |
| 8:CB:784:G:N2     | 8:CB:792:A:C6     | 2.40                     | 0.89              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1050:A:H2'   | 8:CB:1051:G:C8     | 2.07                     | 0.89              |
| 8:CB:1653:G:C6    | 20:CN:10:LEU:HG    | 2.07                     | 0.89              |
| 8:CB:2838:G:H8    | 8:CB:2838:G:H5'    | 1.35                     | 0.89              |
| 18:CL:57:LEU:O    | 18:CL:59:ARG:HG2   | 1.71                     | 0.89              |
| 33:DA:1206:G:H5'  | 33:DA:1206:G:C8    | 2.08                     | 0.89              |
| 8:AB:61:C:N3      | 8:AB:94:A:C2       | 2.40                     | 0.89              |
| 8:AB:675:A:OP1    | 11:AE:58:LYS:HD2   | 1.71                     | 0.89              |
| 17:AK:78:ARG:NE   | 22:AP:72:VAL:HG21  | 1.87                     | 0.89              |
| 33:BA:892:A:C2    | 33:BA:907:A:C2     | 2.61                     | 0.89              |
| 8:CB:2840:C:H5''  | 20:CN:53:THR:HG21  | 1.52                     | 0.89              |
| 26:CT:53:VAL:HB   | 26:CT:87:LEU:HD11  | 1.52                     | 0.89              |
| 33:DA:155:A:H8    | 33:DA:155:A:H5'    | 1.37                     | 0.89              |
| 8:AB:1205:A:H4'   | 8:AB:1206:G:OP2    | 1.73                     | 0.89              |
| 22:AP:62:LYS:HA   | 22:AP:74:GLN:HE22  | 1.30                     | 0.89              |
| 23:AQ:35:PHE:HB3  | 23:AQ:39:ILE:HB    | 1.54                     | 0.89              |
| 24:AR:84:ARG:HG3  | 24:AR:84:ARG:NH1   | 1.74                     | 0.89              |
| 29:AW:67:LYS:HD2  | 29:AW:71:LYS:HB3   | 1.54                     | 0.89              |
| 8:CB:1098:A:H2'   | 8:CB:1099:G:H5''   | 1.51                     | 0.89              |
| 8:CB:2031:A:H5'   | 8:CB:2031:A:C8     | 2.08                     | 0.89              |
| 8:CB:2331:G:O2'   | 29:CW:69:GLU:HG3   | 1.72                     | 0.89              |
| 16:CJ:98:GLU:O    | 16:CJ:102:GLU:HG2  | 1.72                     | 0.89              |
| 30:CX:53:VAL:O    | 30:CX:57:LEU:HB3   | 1.73                     | 0.89              |
| 32:CZ:49:ARG:HA   | 32:CZ:52:ALA:HB3   | 1.54                     | 0.89              |
| 34:DB:184:ALA:O   | 34:DB:199:ILE:HG13 | 1.73                     | 0.89              |
| 44:DL:97:VAL:HG21 | 44:DL:100:ALA:HB3  | 1.52                     | 0.89              |
| 8:AB:188:G:H5''   | 32:AZ:12:ILE:HG21  | 1.54                     | 0.89              |
| 8:AB:1884:G:OP2   | 8:AB:1884:G:H8     | 1.55                     | 0.89              |
| 24:AR:90:ARG:HD2  | 24:AR:91:GLN:H     | 1.35                     | 0.89              |
| 33:BA:579:A:H61   | 33:BA:762:U:H3     | 1.16                     | 0.89              |
| 37:BE:106:ALA:HB2 | 37:BE:124:ALA:HB3  | 1.52                     | 0.89              |
| 1:C0:21:LEU:HD22  | 25:CS:23:LEU:HB2   | 1.54                     | 0.89              |
| 8:CB:1050:A:H2'   | 8:CB:1051:G:H8     | 1.38                     | 0.89              |
| 8:CB:1967:C:H2'   | 8:CB:1968:G:H5'    | 1.53                     | 0.89              |
| 10:CD:130:GLN:HB3 | 10:CD:140:HIS:CA   | 2.02                     | 0.89              |
| 20:CN:38:LEU:HB3  | 20:CN:39:PRO:HD3   | 1.51                     | 0.89              |
| 27:AU:26:ASN:O    | 27:AU:34:ILE:HG13  | 1.73                     | 0.89              |
| 33:BA:599:C:H5''  | 40:BH:87:ARG:HA    | 1.55                     | 0.89              |
| 33:BA:1197:A:C2   | 33:BA:1198:G:C8    | 2.60                     | 0.89              |
| 48:BP:46:LYS:HD3  | 48:BP:46:LYS:H     | 1.37                     | 0.89              |
| 53:BU:13:VAL:HG13 | 53:BU:14:ALA:H     | 1.38                     | 0.89              |
| 8:CB:2040:G:H2'   | 8:CB:2041:U:H6     | 1.36                     | 0.89              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2195:U:H2'   | 8:CB:2196:C:H6     | 1.36                     | 0.89              |
| 8:CB:2334:U:O4'   | 21:CO:11:ALA:HB1   | 1.73                     | 0.89              |
| 15:CI:45:THR:HG21 | 15:CI:54:ILE:HG21  | 1.54                     | 0.89              |
| 18:CL:55:MET:HB3  | 18:CL:56:PRO:HD3   | 1.54                     | 0.89              |
| 30:CX:41:HIS:CE1  | 30:CX:43:LEU:HB2   | 2.08                     | 0.89              |
| 33:DA:453:G:H2'   | 33:DA:454:G:H8     | 1.37                     | 0.89              |
| 33:DA:577:G:H22   | 33:DA:763:G:H22    | 1.16                     | 0.89              |
| 33:DA:608:A:H5''  | 55:DA:5144:HOH:O   | 1.72                     | 0.89              |
| 33:DA:1303:C:H42  | 33:DA:1334:G:H1    | 1.18                     | 0.89              |
| 33:DA:1423:G:H2'  | 33:DA:1424:U:H6    | 1.38                     | 0.89              |
| 4:A3:23:HIS:CD2   | 4:A3:47:ALA:HA     | 2.08                     | 0.88              |
| 19:AM:41:LEU:HD11 | 19:AM:95:LEU:HD13  | 1.55                     | 0.88              |
| 33:BA:1499:A:H8   | 33:BA:1499:A:H5'   | 1.34                     | 0.88              |
| 35:BC:10:ARG:CG   | 35:BC:10:ARG:HH11  | 1.85                     | 0.88              |
| 8:CB:826:U:H3'    | 8:CB:828:U:C6      | 2.06                     | 0.88              |
| 13:CG:6:ALA:HB3   | 13:CG:7:PRO:HD3    | 1.54                     | 0.88              |
| 21:CO:30:ARG:HH12 | 21:CO:97:PHE:HD2   | 1.21                     | 0.88              |
| 33:DA:622:A:H3'   | 33:DA:622:A:C8     | 2.08                     | 0.88              |
| 33:BA:411:A:N6    | 33:BA:413:G:H21    | 1.70                     | 0.88              |
| 33:BA:679:C:C2'   | 33:BA:680:C:H5''   | 2.03                     | 0.88              |
| 36:BD:12:ARG:HD2  | 36:BD:37:PRO:HG3   | 1.55                     | 0.88              |
| 36:BD:104:MET:HE3 | 36:BD:170:LEU:HD22 | 1.52                     | 0.88              |
| 37:BE:74:ALA:HB1  | 37:BE:148:SER:HB3  | 1.54                     | 0.88              |
| 46:BN:66:THR:HG23 | 46:BN:67:GLY:H     | 1.38                     | 0.88              |
| 1:C0:41:HIS:CE1   | 1:C0:42:ILE:HG22   | 2.08                     | 0.88              |
| 24:CR:79:ARG:HD3  | 24:CR:81:LYS:CE    | 2.02                     | 0.88              |
| 33:DA:373:A:H5'   | 33:DA:373:A:C8     | 2.08                     | 0.88              |
| 37:DE:36:THR:HG21 | 37:DE:63:MET:HA    | 1.52                     | 0.88              |
| 8:AB:826:U:H3'    | 8:AB:828:U:C6      | 2.06                     | 0.88              |
| 8:AB:1283:G:H22   | 8:AB:1286:A:H5'    | 1.38                     | 0.88              |
| 8:AB:2195:U:H2'   | 8:AB:2196:C:H6     | 1.38                     | 0.88              |
| 8:AB:2786:U:H4'   | 10:AD:65:ALA:O     | 1.72                     | 0.88              |
| 14:AH:43:ASN:H    | 14:AH:43:ASN:HD22  | 1.20                     | 0.88              |
| 3:C2:21:ARG:NH2   | 8:CB:466:A:H5''    | 1.87                     | 0.88              |
| 8:CB:2285:C:H1'   | 8:CB:2288:A:N7     | 1.87                     | 0.88              |
| 23:CQ:44:TYR:O    | 23:CQ:48:ASP:HB2   | 1.74                     | 0.88              |
| 33:DA:801:U:C2    | 33:DA:802:A:N7     | 2.40                     | 0.88              |
| 33:DA:1252:A:H61  | 33:DA:1285:A:N6    | 1.70                     | 0.88              |
| 5:A4:26:ILE:HG22  | 5:A4:34:LYS:HG2    | 1.51                     | 0.88              |
| 8:AB:1435:G:H2'   | 8:AB:1436:G:H8     | 1.39                     | 0.88              |
| 8:AB:1651:G:OP1   | 20:AN:37:THR:HG21  | 1.73                     | 0.88              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1820:U:C5    | 9:AC:158:GLY:HA3   | 2.08                     | 0.88              |
| 8:AB:2592:G:H5''  | 8:AB:2593:U:OP2    | 1.73                     | 0.88              |
| 27:AU:78:LYS:HB3  | 27:AU:96:LYS:HB2   | 1.55                     | 0.88              |
| 8:CB:454:A:H3'    | 8:CB:455:C:H5'     | 1.53                     | 0.88              |
| 8:CB:2276:G:OP1   | 19:CM:82:MET:HB3   | 1.73                     | 0.88              |
| 10:CD:59:ARG:HD2  | 10:CD:60:VAL:HG23  | 1.54                     | 0.88              |
| 10:CD:124:ARG:O   | 10:CD:160:LYS:HD2  | 1.74                     | 0.88              |
| 21:CO:9:ARG:O     | 21:CO:13:ARG:HB2   | 1.72                     | 0.88              |
| 32:CZ:30:HIS:HB2  | 32:CZ:48:GLN:HG2   | 1.56                     | 0.88              |
| 33:DA:714:G:H2'   | 33:DA:715:A:C8     | 2.08                     | 0.88              |
| 33:DA:1507:A:H5'' | 33:DA:1507:A:H8    | 1.38                     | 0.88              |
| 34:DB:68:PHE:HE1  | 34:DB:88:GLN:HB3   | 1.39                     | 0.88              |
| 8:AB:323:C:N3     | 8:AB:333:G:C8      | 2.42                     | 0.88              |
| 8:AB:2276:G:OP2   | 19:AM:83:GLY:HA3   | 1.74                     | 0.88              |
| 8:AB:2324:U:H4'   | 8:AB:2325:G:OP2    | 1.69                     | 0.88              |
| 33:BA:603:U:H2'   | 33:BA:604:G:H5''   | 1.55                     | 0.88              |
| 33:BA:683:G:H8    | 33:BA:683:G:H5'    | 1.37                     | 0.88              |
| 38:BF:64:VAL:HG12 | 38:BF:65:GLU:H     | 1.38                     | 0.88              |
| 8:CB:1823:G:H8    | 8:CB:1823:G:H5'    | 1.34                     | 0.88              |
| 8:CB:2415:G:H2'   | 8:CB:2416:C:H6     | 1.38                     | 0.88              |
| 11:CE:120:VAL:C   | 11:CE:189:THR:HG21 | 1.94                     | 0.88              |
| 33:DA:805:C:H2'   | 33:DA:806:C:C6     | 2.07                     | 0.88              |
| 34:DB:68:PHE:CE1  | 34:DB:88:GLN:HB3   | 2.08                     | 0.88              |
| 37:DE:35:LEU:HD13 | 37:DE:133:ILE:HG13 | 1.55                     | 0.88              |
| 44:DL:65:TYR:HB3  | 44:DL:95:HIS:HD2   | 1.37                     | 0.88              |
| 8:AB:1823:G:H8    | 8:AB:1823:G:H5'    | 1.39                     | 0.88              |
| 33:BA:950:U:H2'   | 33:BA:951:G:H8     | 1.36                     | 0.88              |
| 8:CB:374:A:H2'    | 8:CB:375:G:H8      | 1.38                     | 0.88              |
| 8:CB:2561:U:H2'   | 8:CB:2562:U:H5''   | 1.54                     | 0.88              |
| 17:CK:78:ARG:NE   | 22:CP:72:VAL:HG21  | 1.88                     | 0.88              |
| 33:DA:295:C:H2'   | 33:DA:296:U:H6     | 1.38                     | 0.88              |
| 33:DA:552:U:H2'   | 33:DA:553:A:C8     | 2.09                     | 0.88              |
| 35:DC:26:LYS:HG3  | 35:DC:27:GLU:HG3   | 1.54                     | 0.88              |
| 8:AB:784:G:N2     | 8:AB:792:A:C6      | 2.42                     | 0.88              |
| 8:AB:2838:G:H8    | 8:AB:2838:G:H5'    | 1.38                     | 0.88              |
| 11:AE:158:PHE:CE2 | 11:AE:169:VAL:HA   | 2.07                     | 0.88              |
| 16:AJ:45:THR:CG2  | 23:AQ:63:ARG:HE    | 1.86                     | 0.88              |
| 33:BA:775:G:N2    | 33:BA:805:C:H42    | 1.72                     | 0.88              |
| 33:BA:1528:U:C6   | 33:BA:1528:U:H5'   | 2.08                     | 0.88              |
| 3:C2:40:ALA:HA    | 8:CB:459:U:OP1     | 1.73                     | 0.88              |
| 8:CB:32:C:H42     | 8:CB:473:G:H1      | 1.21                     | 0.88              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1256:G:C4     | 8:CB:1257:C:C5     | 2.61                     | 0.88              |
| 8:CB:1784:A:H4'    | 8:CB:1785:A:C5'    | 2.04                     | 0.88              |
| 14:CH:2:GLN:HA     | 14:CH:21:VAL:HG13  | 1.53                     | 0.88              |
| 39:DG:2:ARG:HB3    | 39:DG:2:ARG:NH1    | 1.89                     | 0.88              |
| 22:AP:27:VAL:HG23  | 22:AP:86:LYS:HB2   | 1.55                     | 0.88              |
| 8:CB:323:C:H1'     | 11:CE:164:LEU:HB2  | 1.54                     | 0.88              |
| 11:CE:148:ILE:HD12 | 11:CE:149:ILE:HD12 | 1.55                     | 0.88              |
| 33:DA:548:G:H8     | 33:DA:548:G:H5''   | 1.36                     | 0.88              |
| 33:DA:553:A:H2'    | 33:DA:554:A:C8     | 2.08                     | 0.88              |
| 33:DA:1178:G:H5''  | 33:DA:1178:G:H8    | 1.37                     | 0.88              |
| 37:DE:148:SER:OG   | 37:DE:151:MET:HG3  | 1.73                     | 0.88              |
| 8:AB:866:A:H2'     | 8:AB:867:C:H5'     | 1.54                     | 0.88              |
| 10:AD:115:GLY:O    | 20:AN:3:HIS:CE1    | 2.27                     | 0.88              |
| 18:AL:109:LYS:HG2  | 18:AL:126:ARG:HG3  | 1.55                     | 0.88              |
| 33:BA:295:C:H2'    | 33:BA:296:U:H6     | 1.37                     | 0.88              |
| 37:BE:35:LEU:HD13  | 37:BE:133:ILE:HA   | 1.56                     | 0.88              |
| 37:BE:134:ASN:O    | 37:BE:137:ARG:HG2  | 1.74                     | 0.88              |
| 46:BN:65:GLN:HG2   | 46:BN:82:LYS:HD3   | 1.55                     | 0.88              |
| 1:C0:41:HIS:HB2    | 1:C0:47:TYR:O      | 1.73                     | 0.88              |
| 8:CB:2179:C:H2'    | 8:CB:2180:U:C5     | 2.09                     | 0.88              |
| 9:CC:170:TYR:O     | 9:CC:171:VAL:HG13  | 1.74                     | 0.88              |
| 33:DA:38:G:H22     | 33:DA:397:A:H5''   | 1.38                     | 0.88              |
| 7:AA:76:G:H2'      | 7:AA:77:U:H6       | 1.37                     | 0.88              |
| 10:AD:184:ARG:HE   | 10:AD:184:ARG:HA   | 1.34                     | 0.88              |
| 21:AO:35:ILE:HD13  | 21:AO:35:ILE:H     | 1.39                     | 0.88              |
| 31:AY:3:THR:HG23   | 31:AY:39:ASP:HA    | 1.56                     | 0.88              |
| 33:BA:885:G:H1     | 33:BA:912:C:H42    | 0.93                     | 0.88              |
| 8:CB:2282:G:C6     | 8:CB:2425:A:H2     | 1.91                     | 0.88              |
| 33:DA:1227:A:H5'   | 33:DA:1227:A:C8    | 2.09                     | 0.88              |
| 37:DE:88:HIS:O     | 37:DE:89:THR:HB    | 1.74                     | 0.88              |
| 45:DM:100:ARG:HG3  | 45:DM:100:ARG:O    | 1.74                     | 0.88              |
| 8:AB:194:G:N3      | 8:AB:194:G:H2'     | 1.88                     | 0.87              |
| 18:AL:59:ARG:HB3   | 18:AL:59:ARG:NH1   | 1.89                     | 0.87              |
| 8:CB:302:C:O2'     | 8:CB:303:G:C8      | 2.22                     | 0.87              |
| 18:CL:4:ASN:HD22   | 18:CL:5:THR:H      | 1.20                     | 0.87              |
| 21:CO:40:ILE:HB    | 21:CO:46:GLU:HG2   | 1.55                     | 0.87              |
| 33:DA:762:U:H2'    | 33:DA:763:G:H8     | 1.39                     | 0.87              |
| 33:DA:1223:C:H5''  | 33:DA:1224:U:H5''  | 1.56                     | 0.87              |
| 9:AC:12:ARG:HH11   | 9:AC:18:VAL:HG21   | 1.40                     | 0.87              |
| 9:AC:244:VAL:HG22  | 9:AC:245:THR:H     | 1.40                     | 0.87              |
| 30:AX:41:HIS:HB3   | 30:AX:45:GLN:NE2   | 1.89                     | 0.87              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BC:186:SER:HB3 | 35:BC:197:VAL:HG12 | 1.56                     | 0.87              |
| 8:CB:580:U:H2'    | 8:CB:581:C:H6      | 1.38                     | 0.87              |
| 24:CR:32:THR:HB   | 24:CR:35:PHE:CZ    | 2.10                     | 0.87              |
| 32:CZ:19:GLY:O    | 32:CZ:21:VAL:HG12  | 1.74                     | 0.87              |
| 43:DK:19:VAL:HG12 | 43:DK:82:GLU:HB2   | 1.54                     | 0.87              |
| 8:AB:1179:G:H2'   | 8:AB:1180:U:O4'    | 1.74                     | 0.87              |
| 8:AB:1826:G:OP2   | 9:AC:221:GLY:HA2   | 1.75                     | 0.87              |
| 8:AB:2724:U:O2'   | 8:AB:2725:A:H5'    | 1.73                     | 0.87              |
| 23:AQ:96:ASP:O    | 23:AQ:99:VAL:HG22  | 1.74                     | 0.87              |
| 4:C3:31:ILE:HD12  | 4:C3:32:LEU:HB2    | 1.56                     | 0.87              |
| 8:CB:1205:A:N7    | 11:CE:164:LEU:HD22 | 1.90                     | 0.87              |
| 8:CB:1662:U:H2'   | 8:CB:1663:G:H5''   | 1.56                     | 0.87              |
| 8:CB:2378:A:H1'   | 21:CO:17:LYS:HE2   | 1.53                     | 0.87              |
| 10:CD:113:SER:HB3 | 10:CD:167:ASN:HA   | 1.56                     | 0.87              |
| 33:DA:386:C:H2'   | 33:DA:387:U:H5''   | 1.54                     | 0.87              |
| 47:DO:34:GLN:NE2  | 47:DO:38:LEU:HD21  | 1.89                     | 0.87              |
| 3:A2:13:ASN:HD22  | 3:A2:14:ARG:N      | 1.72                     | 0.87              |
| 3:A2:19:ARG:HG3   | 3:A2:20:ALA:N      | 1.89                     | 0.87              |
| 8:AB:27:G:HO2'    | 8:AB:28:A:H8       | 0.93                     | 0.87              |
| 8:AB:1903:G:OP1   | 9:AC:239:PHE:HA    | 1.74                     | 0.87              |
| 8:AB:2199:A:H5''  | 8:AB:2199:A:C8     | 2.08                     | 0.87              |
| 10:AD:62:LYS:HE2  | 10:AD:63:PRO:CD    | 2.02                     | 0.87              |
| 11:AE:60:TRP:HD1  | 11:AE:60:TRP:H     | 1.21                     | 0.87              |
| 33:BA:1215:G:C2   | 33:BA:1216:A:H1'   | 2.10                     | 0.87              |
| 41:BI:46:VAL:HA   | 41:BI:49:GLN:HB2   | 1.55                     | 0.87              |
| 48:BP:20:VAL:HG23 | 48:BP:35:ARG:HA    | 1.57                     | 0.87              |
| 8:CB:823:C:H2'    | 8:CB:824:U:O4'     | 1.73                     | 0.87              |
| 8:CB:1179:G:H2'   | 8:CB:1180:U:O4'    | 1.72                     | 0.87              |
| 16:CJ:38:GLY:HA3  | 16:CJ:41:LYS:HE3   | 1.53                     | 0.87              |
| 24:CR:79:ARG:HH11 | 24:CR:81:LYS:HE3   | 1.37                     | 0.87              |
| 33:DA:599:C:H4'   | 40:DH:121:GLY:CA   | 2.04                     | 0.87              |
| 7:AA:76:G:H1'     | 28:AV:78:GLN:HE22  | 1.37                     | 0.87              |
| 8:AB:1364:G:H1'   | 8:AB:1368:G:N2     | 1.89                     | 0.87              |
| 11:AE:141:MET:C   | 11:AE:143:LEU:H    | 1.75                     | 0.87              |
| 13:AG:40:VAL:HG13 | 13:AG:54:ARG:H     | 1.40                     | 0.87              |
| 13:AG:129:GLU:O   | 13:AG:130:ILE:HG13 | 1.72                     | 0.87              |
| 24:AR:90:ARG:HD2  | 24:AR:91:GLN:N     | 1.88                     | 0.87              |
| 26:AT:1:MET:SD    | 26:AT:2:ILE:HG12   | 2.14                     | 0.87              |
| 29:AW:40:ARG:CG   | 29:AW:40:ARG:HH11  | 1.88                     | 0.87              |
| 33:BA:1323:G:H2'  | 33:BA:1324:A:C8    | 2.09                     | 0.87              |
| 34:BB:163:ILE:HA  | 34:BB:185:ILE:HD11 | 1.54                     | 0.87              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:C0:41:HIS:CG    | 1:C0:42:ILE:H      | 1.92                     | 0.87              |
| 7:CA:76:G:H2'     | 7:CA:77:U:H6       | 1.39                     | 0.87              |
| 8:CB:27:G:HO2'    | 8:CB:28:A:H8       | 0.91                     | 0.87              |
| 8:CB:1788:C:H2'   | 8:CB:1789:A:O4'    | 1.73                     | 0.87              |
| 9:CC:107:LYS:H    | 9:CC:194:VAL:HG21  | 1.38                     | 0.87              |
| 18:CL:77:ILE:CD1  | 18:CL:110:VAL:HA   | 2.04                     | 0.87              |
| 19:CM:41:LEU:HD11 | 19:CM:95:LEU:HD13  | 1.56                     | 0.87              |
| 9:AC:44:ASN:O     | 9:AC:45:ASN:HB3    | 1.73                     | 0.87              |
| 16:AJ:35:ARG:NH2  | 16:AJ:41:LYS:HB2   | 1.88                     | 0.87              |
| 41:BI:78:ILE:HG22 | 41:BI:82:ILE:HD11  | 1.55                     | 0.87              |
| 8:CB:1824:G:OP1   | 9:CC:53:ILE:HD11   | 1.73                     | 0.87              |
| 9:AC:237:ARG:C    | 9:AC:237:ARG:HE    | 1.78                     | 0.87              |
| 20:AN:70:THR:HG21 | 20:AN:75:ILE:HG22  | 1.55                     | 0.87              |
| 2:C1:29:LYS:HB3   | 2:C1:30:PRO:HD2    | 1.56                     | 0.87              |
| 2:C1:47:ILE:CG2   | 2:C1:48:TYR:H      | 1.88                     | 0.87              |
| 8:CB:1335:C:H2'   | 8:CB:1336:A:H8     | 1.39                     | 0.87              |
| 8:CB:2888:C:H2'   | 8:CB:2889:C:C6     | 2.09                     | 0.87              |
| 20:CN:55:ALA:HB1  | 20:CN:79:LEU:O     | 1.75                     | 0.87              |
| 30:CX:1:MET:HE3   | 30:CX:5:GLU:HB3    | 1.55                     | 0.87              |
| 33:DA:767:A:N6    | 33:DA:813:U:H3     | 1.72                     | 0.87              |
| 33:DA:834:U:H2'   | 33:DA:835:U:C6     | 2.09                     | 0.87              |
| 8:AB:1825:U:H5'   | 9:AC:244:VAL:HB    | 1.56                     | 0.87              |
| 8:AB:2633:G:H1'   | 10:AD:62:LYS:HG2   | 1.55                     | 0.87              |
| 19:AM:74:THR:HA   | 19:AM:87:GLY:O     | 1.75                     | 0.87              |
| 21:AO:35:ILE:HG12 | 21:AO:36:TYR:H     | 1.39                     | 0.87              |
| 33:BA:355:C:H2'   | 33:BA:356:A:H8     | 1.40                     | 0.87              |
| 33:BA:373:A:H5'   | 33:BA:373:A:C8     | 2.08                     | 0.87              |
| 36:BD:58:GLN:HA   | 36:BD:61:ARG:HB2   | 1.56                     | 0.87              |
| 8:CB:657:U:H2'    | 8:CB:658:U:C5      | 2.09                     | 0.87              |
| 8:CB:2592:G:H5''  | 8:CB:2593:U:OP2    | 1.75                     | 0.87              |
| 11:CE:127:GLU:HA  | 11:CE:157:LEU:HD22 | 1.54                     | 0.87              |
| 18:CL:109:LYS:HG2 | 18:CL:126:ARG:HG3  | 1.54                     | 0.87              |
| 18:CL:126:ARG:HD2 | 18:CL:127:VAL:N    | 1.89                     | 0.87              |
| 32:CZ:49:ARG:C    | 32:CZ:51:VAL:H     | 1.77                     | 0.87              |
| 33:DA:569:C:H42   | 33:DA:881:G:H1     | 1.22                     | 0.87              |
| 46:DN:42:ASN:HB3  | 46:DN:46:LYS:HE2   | 1.56                     | 0.87              |
| 23:AQ:52:ARG:NH1  | 23:AQ:55:GLN:HE21  | 1.72                     | 0.87              |
| 29:AW:42:THR:HB   | 29:AW:65:LYS:HA    | 1.55                     | 0.87              |
| 33:BA:125:U:H2'   | 33:BA:126:G:C8     | 2.10                     | 0.87              |
| 33:BA:899:C:H3'   | 33:BA:900:A:H8     | 1.39                     | 0.87              |
| 45:BM:10:ASP:HA   | 45:BM:44:ILE:HD13  | 1.55                     | 0.87              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 45:BM:75:SER:HA    | 45:BM:78:ARG:HB2  | 1.57                     | 0.87              |
| 10:CD:160:LYS:HB2  | 10:CD:160:LYS:NZ  | 1.88                     | 0.87              |
| 42:DJ:34:ALA:HB3   | 42:DJ:78:GLU:HG2  | 1.57                     | 0.87              |
| 48:DP:19:VAL:HG12  | 48:DP:37:GLY:O    | 1.75                     | 0.87              |
| 7:AA:95:U:H2'      | 7:AA:96:G:C8      | 2.10                     | 0.86              |
| 8:AB:756:A:H5'     | 8:AB:756:A:C8     | 2.10                     | 0.86              |
| 25:AS:84:ARG:NH2   | 25:AS:98:LYS:HE3  | 1.89                     | 0.86              |
| 9:CC:205:GLY:C     | 9:CC:206:LYS:HE2  | 1.95                     | 0.86              |
| 2:A1:15:GLY:O      | 2:A1:16:THR:HG22  | 1.75                     | 0.86              |
| 8:AB:67:U:H2'      | 8:AB:68:G:C8      | 2.10                     | 0.86              |
| 8:AB:1335:C:H2'    | 8:AB:1336:A:H8    | 1.40                     | 0.86              |
| 8:AB:2682:A:C2     | 8:AB:2683:C:C2    | 2.62                     | 0.86              |
| 9:AC:170:TYR:O     | 9:AC:171:VAL:HG13 | 1.76                     | 0.86              |
| 18:AL:126:ARG:HD2  | 18:AL:127:VAL:N   | 1.88                     | 0.86              |
| 33:BA:969:A:H8     | 33:BA:969:A:H5'   | 1.40                     | 0.86              |
| 35:BC:39:ARG:HH21  | 35:BC:56:ILE:HD12 | 1.39                     | 0.86              |
| 36:BD:109:THR:HG23 | 36:BD:112:GLU:H   | 1.40                     | 0.86              |
| 17:CK:108:ARG:HG2  | 17:CK:108:ARG:NH1 | 1.89                     | 0.86              |
| 23:CQ:108:LEU:HA   | 23:CQ:111:LYS:HE3 | 1.57                     | 0.86              |
| 38:DF:42:TRP:HE1   | 38:DF:61:LEU:HD23 | 1.40                     | 0.86              |
| 8:AB:536:G:N2      | 16:AJ:48:VAL:HG22 | 1.89                     | 0.86              |
| 8:AB:2031:A:H5'    | 8:AB:2031:A:C8    | 2.09                     | 0.86              |
| 33:BA:393:A:C2     | 33:BA:394:G:C8    | 2.64                     | 0.86              |
| 33:BA:1237:C:H42   | 33:BA:1337:G:H1   | 1.22                     | 0.86              |
| 7:CA:12:C:C5       | 29:CW:50:VAL:HA   | 2.09                     | 0.86              |
| 8:CB:570:G:O6      | 55:CB:5092:HOH:O  | 1.92                     | 0.86              |
| 8:CB:993:G:C2      | 8:CB:994:C:H5     | 1.93                     | 0.86              |
| 33:DA:488:C:C2     | 33:DA:489:C:H5    | 1.93                     | 0.86              |
| 33:DA:1505:G:H4'   | 33:DA:1506:U:H5'' | 1.56                     | 0.86              |
| 36:DD:13:ARG:O     | 36:DD:14:GLU:HB2  | 1.73                     | 0.86              |
| 8:AB:823:C:H2'     | 8:AB:824:U:O4'    | 1.74                     | 0.86              |
| 8:AB:2137:U:H3     | 8:AB:2154:A:H61   | 1.21                     | 0.86              |
| 30:AX:28:LEU:HB3   | 30:AX:34:SER:HB2  | 1.57                     | 0.86              |
| 8:CB:669:G:N3      | 8:CB:669:G:H2'    | 1.88                     | 0.86              |
| 8:CB:1205:A:H4'    | 8:CB:1206:G:OP2   | 1.73                     | 0.86              |
| 8:CB:1295:C:H2'    | 8:CB:1296:G:H8    | 1.37                     | 0.86              |
| 8:CB:1829:A:H8     | 8:CB:1829:A:C5'   | 1.87                     | 0.86              |
| 10:CD:29:VAL:O     | 10:CD:51:THR:HG21 | 1.75                     | 0.86              |
| 18:CL:33:ARG:HD2   | 24:CR:85:LYS:NZ   | 1.89                     | 0.86              |
| 49:DQ:64:ARG:CG    | 49:DQ:64:ARG:HH11 | 1.87                     | 0.86              |
| 4:A3:27:ASN:H      | 4:A3:29:ARG:HD2   | 1.40                     | 0.86              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 7:AA:44:G:H21      | 7:AA:46:A:H61     | 1.20                     | 0.86              |
| 8:AB:529:A:C8      | 8:AB:2023:C:N4    | 2.43                     | 0.86              |
| 8:AB:681:G:H2'     | 8:AB:682:G:H8     | 1.40                     | 0.86              |
| 8:AB:1157:G:H8     | 8:AB:1157:G:H5'   | 1.40                     | 0.86              |
| 8:AB:2334:U:H1'    | 21:AO:12:THR:HB   | 1.55                     | 0.86              |
| 10:AD:160:LYS:HB2  | 10:AD:160:LYS:NZ  | 1.89                     | 0.86              |
| 16:AJ:73:VAL:HG23  | 16:AJ:88:THR:H    | 1.40                     | 0.86              |
| 33:BA:434:U:H6     | 33:BA:434:U:H5''  | 1.41                     | 0.86              |
| 33:BA:577:G:C4     | 33:BA:816:A:C2    | 2.63                     | 0.86              |
| 38:BF:68:GLN:HA    | 38:BF:71:ILE:HG22 | 1.57                     | 0.86              |
| 4:C3:12:ARG:HG2    | 4:C3:23:HIS:HB2   | 1.58                     | 0.86              |
| 8:CB:136:G:H22     | 26:CT:3:ARG:NE    | 1.71                     | 0.86              |
| 8:CB:608:A:H2'     | 8:CB:609:A:H8     | 1.37                     | 0.86              |
| 8:CB:790:U:H5''    | 8:CB:791:C:OP2    | 1.76                     | 0.86              |
| 8:CB:1275:A:H3'    | 8:CB:1275:A:N3    | 1.89                     | 0.86              |
| 16:CJ:73:VAL:HG23  | 16:CJ:88:THR:H    | 1.39                     | 0.86              |
| 23:CQ:35:PHE:HD1   | 23:CQ:35:PHE:O    | 1.58                     | 0.86              |
| 33:DA:202:G:O2'    | 33:DA:468:A:H8    | 1.58                     | 0.86              |
| 33:DA:350:G:H8     | 33:DA:350:G:H5'   | 1.39                     | 0.86              |
| 33:DA:842:U:H2'    | 33:DA:843:U:H4'   | 1.56                     | 0.86              |
| 37:DE:76:ASN:HB2   | 37:DE:81:GLN:CG   | 2.05                     | 0.86              |
| 44:DL:83:GLY:HA2   | 44:DL:94:TYR:HA   | 1.57                     | 0.86              |
| 8:AB:326:G:H8      | 8:AB:326:G:H5'    | 1.41                     | 0.86              |
| 8:AB:540:C:H2'     | 8:AB:541:A:C8     | 2.11                     | 0.86              |
| 8:AB:1275:A:H3'    | 8:AB:1275:A:N3    | 1.90                     | 0.86              |
| 8:AB:1967:C:H2'    | 8:AB:1968:G:H5'   | 1.57                     | 0.86              |
| 8:AB:2848:G:H2'    | 22:AP:96:LEU:HB2  | 1.57                     | 0.86              |
| 10:AD:98:VAL:HA    | 10:AD:101:PHE:CZ  | 2.10                     | 0.86              |
| 17:AK:108:ARG:HG2  | 17:AK:108:ARG:NH1 | 1.90                     | 0.86              |
| 18:AL:38:GLN:CD    | 18:AL:39:LYS:H    | 1.78                     | 0.86              |
| 19:AM:61:GLY:HA3   | 19:AM:105:MET:HB2 | 1.58                     | 0.86              |
| 33:BA:539:A:O5'    | 33:BA:539:A:H8    | 1.57                     | 0.86              |
| 33:BA:846:G:H2'    | 33:BA:847:G:C8    | 2.09                     | 0.86              |
| 33:BA:1513:A:C2    | 33:BA:1514:G:C4   | 2.63                     | 0.86              |
| 8:CB:604:G:H5''    | 8:CB:604:G:H8     | 1.39                     | 0.86              |
| 8:CB:1708:C:H2'    | 8:CB:1709:U:C6    | 2.10                     | 0.86              |
| 10:CD:130:GLN:HB3  | 10:CD:140:HIS:N   | 1.91                     | 0.86              |
| 11:CE:109:LEU:HD13 | 11:CE:113:VAL:CG1 | 2.05                     | 0.86              |
| 29:CW:74:LYS:HG3   | 29:CW:75:ASN:H    | 1.40                     | 0.86              |
| 33:DA:673:A:H2'    | 33:DA:674:G:C8    | 2.11                     | 0.86              |
| 33:DA:1227:A:H5'   | 33:DA:1227:A:H8   | 1.40                     | 0.86              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1598:A:H2    | 8:AB:1599:U:C2     | 1.92                     | 0.86              |
| 17:AK:35:VAL:HG21 | 17:AK:69:VAL:HG22  | 1.57                     | 0.86              |
| 20:AN:115:LEU:H   | 20:AN:115:LEU:HD23 | 1.41                     | 0.86              |
| 33:BA:216:U:H2'   | 33:BA:217:C:H6     | 1.40                     | 0.86              |
| 33:BA:980:C:H4'   | 46:BN:12:ARG:HH22  | 1.41                     | 0.86              |
| 8:CB:1364:G:H1'   | 8:CB:1368:G:N2     | 1.91                     | 0.86              |
| 8:CB:1435:G:H2'   | 8:CB:1436:G:H8     | 1.40                     | 0.86              |
| 10:CD:77:ARG:HB2  | 10:CD:77:ARG:NH1   | 1.91                     | 0.86              |
| 33:DA:922:G:H2'   | 33:DA:923:A:C8     | 2.10                     | 0.86              |
| 40:DH:63:LYS:HD2  | 40:DH:70:VAL:HG11  | 1.56                     | 0.86              |
| 8:AB:65:U:H2'     | 8:AB:66:C:H6       | 1.39                     | 0.86              |
| 8:AB:2255:G:H2'   | 8:AB:2256:G:H8     | 1.37                     | 0.86              |
| 26:AT:7:LEU:HD13  | 26:AT:46:ALA:HB1   | 1.56                     | 0.86              |
| 33:BA:428:G:OP2   | 36:BD:9:LYS:HE3    | 1.75                     | 0.86              |
| 33:BA:963:G:H21   | 42:BJ:56:HIS:CE1   | 1.94                     | 0.86              |
| 36:BD:14:GLU:OE2  | 36:BD:59:LYS:HA    | 1.76                     | 0.86              |
| 8:CB:1661:G:C5    | 8:CB:1662:U:C5     | 2.64                     | 0.86              |
| 10:CD:60:VAL:HG23 | 10:CD:63:PRO:HG2   | 1.57                     | 0.86              |
| 11:CE:60:TRP:HD1  | 11:CE:60:TRP:H     | 1.23                     | 0.86              |
| 18:CL:85:VAL:HG13 | 18:CL:86:GLU:H     | 1.40                     | 0.86              |
| 24:CR:3:ALA:O     | 24:CR:4:VAL:HG13   | 1.74                     | 0.86              |
| 33:DA:664:G:H8    | 33:DA:664:G:H5'    | 1.40                     | 0.86              |
| 33:DA:704:A:H2'   | 33:DA:705:G:H5''   | 1.58                     | 0.86              |
| 33:DA:804:U:H5    | 33:DA:805:C:H41    | 1.19                     | 0.86              |
| 35:DC:14:VAL:O    | 35:DC:15:LYS:HB2   | 1.75                     | 0.86              |
| 36:DD:174:ALA:HA  | 36:DD:177:MET:HA   | 1.58                     | 0.86              |
| 51:DS:22:VAL:HG22 | 51:DS:42:ASN:ND2   | 1.89                     | 0.86              |
| 8:AB:580:U:H2'    | 8:AB:581:C:H6      | 1.40                     | 0.86              |
| 11:AE:1:MET:HG3   | 11:AE:2:GLU:H      | 1.37                     | 0.86              |
| 33:BA:1084:G:H2'  | 33:BA:1085:U:H5'   | 1.56                     | 0.86              |
| 5:C4:24:ARG:NE    | 5:C4:37:GLN:HA     | 1.90                     | 0.86              |
| 13:CG:142:GLN:O   | 13:CG:146:ASP:HB2  | 1.74                     | 0.86              |
| 33:DA:186:C:H5'   | 52:DT:72:ALA:HB1   | 1.56                     | 0.86              |
| 33:DA:663:A:C2'   | 33:DA:664:G:H5''   | 2.06                     | 0.86              |
| 41:DI:40:ARG:N    | 41:DI:44:ARG:HD2   | 1.91                     | 0.86              |
| 8:AB:2345:G:H5'   | 8:AB:2345:G:C8     | 2.10                     | 0.86              |
| 16:AJ:100:VAL:O   | 16:AJ:101:ILE:HG12 | 1.76                     | 0.86              |
| 30:AX:35:GLY:O    | 30:AX:40:SER:HB2   | 1.75                     | 0.86              |
| 33:BA:377:G:H1    | 33:BA:386:C:H42    | 1.22                     | 0.86              |
| 50:BR:40:PRO:HD2  | 50:BR:43:ILE:HD11  | 1.56                     | 0.86              |
| 8:CB:484:C:H42    | 8:CB:496:G:H1      | 1.20                     | 0.86              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:571:U:C4     | 8:CB:2030:A:N1    | 2.44                     | 0.86              |
| 8:CB:2231:U:H2'   | 8:CB:2232:C:H6    | 1.40                     | 0.86              |
| 8:CB:2733:A:H3'   | 8:CB:2733:A:H8    | 1.41                     | 0.86              |
| 22:CP:62:LYS:HA   | 22:CP:74:GLN:HE22 | 1.36                     | 0.86              |
| 33:DA:227:G:H2'   | 33:DA:228:A:H8    | 1.39                     | 0.86              |
| 33:DA:564:C:C6    | 49:DQ:32:ILE:HD11 | 2.11                     | 0.86              |
| 33:DA:948:C:H5'   | 33:DA:1306:A:O2'  | 1.75                     | 0.86              |
| 8:AB:136:G:H2'    | 8:AB:137:U:C6     | 2.11                     | 0.85              |
| 8:AB:2415:G:H2'   | 8:AB:2416:C:H6    | 1.39                     | 0.85              |
| 21:AO:87:ILE:HG13 | 21:AO:88:LYS:H    | 1.38                     | 0.85              |
| 30:AX:22:LEU:HD13 | 30:AX:26:PHE:CZ   | 2.10                     | 0.85              |
| 31:AY:23:LEU:HB3  | 31:AY:29:ARG:HH21 | 1.40                     | 0.85              |
| 33:BA:137:U:H2'   | 33:BA:138:G:H8    | 1.37                     | 0.85              |
| 8:CB:784:G:H5''   | 9:CC:225:ASN:ND2  | 1.90                     | 0.85              |
| 8:CB:860:U:H1'    | 8:CB:2268:A:H5'   | 1.56                     | 0.85              |
| 8:CB:1884:G:OP2   | 8:CB:1884:G:H8    | 1.59                     | 0.85              |
| 8:CB:2434:A:H5'   | 8:CB:2434:A:C8    | 2.10                     | 0.85              |
| 33:DA:890:G:N2    | 33:DA:907:A:OP2   | 2.08                     | 0.85              |
| 33:DA:1392:G:O2'  | 33:DA:1393:U:H5'  | 1.75                     | 0.85              |
| 48:DP:39:PHE:CE2  | 48:DP:41:PRO:HG3  | 2.11                     | 0.85              |
| 1:A0:41:HIS:CD2   | 1:A0:48:TYR:HA    | 2.10                     | 0.85              |
| 8:AB:1838:C:N3    | 8:AB:1899:A:C2    | 2.44                     | 0.85              |
| 32:AZ:9:TYR:HB2   | 32:AZ:28:VAL:HG22 | 1.56                     | 0.85              |
| 33:BA:499:A:H4'   | 33:BA:500:G:OP1   | 1.76                     | 0.85              |
| 8:CB:67:U:H2'     | 8:CB:68:G:C8      | 2.10                     | 0.85              |
| 8:CB:448:U:H5     | 8:CB:583:G:N3     | 1.74                     | 0.85              |
| 8:CB:873:C:H2'    | 8:CB:874:G:H8     | 1.40                     | 0.85              |
| 11:CE:146:VAL:HB  | 11:CE:184:ASP:CG  | 1.97                     | 0.85              |
| 13:CG:79:THR:CG2  | 13:CG:80:GLU:H    | 1.88                     | 0.85              |
| 24:CR:89:HIS:CG   | 24:CR:90:ARG:N    | 2.42                     | 0.85              |
| 34:DB:52:ALA:HA   | 34:DB:55:GLU:HB2  | 1.57                     | 0.85              |
| 7:AA:115:A:C2     | 7:AA:116:G:C8     | 2.65                     | 0.85              |
| 8:AB:1677:A:H5''  | 8:AB:1677:A:C8    | 2.10                     | 0.85              |
| 8:AB:2333:A:O4'   | 8:AB:2335:A:H1'   | 1.75                     | 0.85              |
| 10:AD:113:SER:HB3 | 10:AD:167:ASN:HA  | 1.58                     | 0.85              |
| 11:AE:193:VAL:O   | 11:AE:199:MET:HA  | 1.74                     | 0.85              |
| 28:AV:53:LYS:HD3  | 28:AV:54:ALA:H    | 1.38                     | 0.85              |
| 50:BR:35:SER:OG   | 50:BR:37:LYS:HG3  | 1.77                     | 0.85              |
| 8:CB:581:C:OP1    | 23:CQ:32:ARG:HB2  | 1.75                     | 0.85              |
| 8:CB:962:G:H21    | 19:CM:81:ARG:HD3  | 1.40                     | 0.85              |
| 20:CN:12:ARG:HD2  | 20:CN:16:HIS:CD2  | 2.10                     | 0.85              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:CP:9:GLN:HB3   | 22:CP:56:SER:HB3   | 1.57                     | 0.85              |
| 23:CQ:53:LYS:H    | 23:CQ:53:LYS:HE2   | 1.41                     | 0.85              |
| 5:A4:22:VAL:HB    | 5:A4:24:ARG:NH2    | 1.92                     | 0.85              |
| 8:AB:1800:C:OP2   | 9:AC:260:LYS:HD2   | 1.76                     | 0.85              |
| 8:AB:2282:G:C6    | 8:AB:2425:A:H2     | 1.94                     | 0.85              |
| 8:AB:2455:G:H2'   | 8:AB:2456:C:C6     | 2.11                     | 0.85              |
| 8:AB:2845:U:O3'   | 22:AP:54:LEU:HG    | 1.77                     | 0.85              |
| 11:AE:52:VAL:HG22 | 11:AE:53:THR:H     | 1.41                     | 0.85              |
| 24:AR:35:PHE:O    | 24:AR:64:VAL:HG13  | 1.76                     | 0.85              |
| 33:BA:386:C:H2'   | 33:BA:387:U:H5'    | 1.58                     | 0.85              |
| 33:BA:780:A:H5''  | 33:BA:780:A:H8     | 1.41                     | 0.85              |
| 42:BJ:57:VAL:HG22 | 42:BJ:58:ASN:H     | 1.39                     | 0.85              |
| 8:CB:586:A:H5'    | 11:CE:84:THR:HG21  | 1.55                     | 0.85              |
| 8:CB:1590:A:H2'   | 8:CB:1591:A:H8     | 1.39                     | 0.85              |
| 8:CB:2060:A:C2    | 8:CB:2502:G:C5     | 2.65                     | 0.85              |
| 13:CG:30:GLY:N    | 13:CG:78:VAL:HG23  | 1.89                     | 0.85              |
| 13:CG:125:PRO:HG2 | 13:CG:129:GLU:HB3  | 1.56                     | 0.85              |
| 16:CJ:78:THR:HG23 | 16:CJ:84:ILE:HG21  | 1.59                     | 0.85              |
| 18:CL:33:ARG:HB2  | 18:CL:33:ARG:CZ    | 2.07                     | 0.85              |
| 19:CM:31:PHE:HE2  | 19:CM:113:ALA:HB3  | 1.41                     | 0.85              |
| 33:DA:401:C:H3'   | 33:DA:401:C:C6     | 2.10                     | 0.85              |
| 33:DA:624:C:O2'   | 33:DA:625:U:H5'    | 1.75                     | 0.85              |
| 5:A4:3:VAL:HG21   | 5:A4:35:GLN:HG2    | 1.58                     | 0.85              |
| 5:A4:22:VAL:HB    | 5:A4:24:ARG:HH21   | 1.40                     | 0.85              |
| 7:AA:104:A:C2     | 7:AA:105:G:H1'     | 2.11                     | 0.85              |
| 8:AB:508:A:C2     | 25:AS:9:HIS:NE2    | 2.43                     | 0.85              |
| 8:AB:1028:A:H5'   | 8:AB:1028:A:C8     | 2.11                     | 0.85              |
| 8:AB:1205:A:C8    | 11:AE:164:LEU:HD22 | 2.11                     | 0.85              |
| 8:AB:1662:U:H2'   | 8:AB:1663:G:H5''   | 1.57                     | 0.85              |
| 16:AJ:85:LYS:HA   | 16:AJ:85:LYS:CE    | 2.07                     | 0.85              |
| 8:CB:1422:G:H1'   | 8:CB:1496:A:N1     | 1.92                     | 0.85              |
| 10:CD:179:ARG:HG3 | 10:CD:179:ARG:NH1  | 1.90                     | 0.85              |
| 10:CD:179:ARG:HG3 | 10:CD:179:ARG:HH11 | 1.40                     | 0.85              |
| 17:CK:35:VAL:HG21 | 17:CK:69:VAL:HG22  | 1.58                     | 0.85              |
| 33:DA:240:G:H5''  | 33:DA:240:G:H8     | 1.38                     | 0.85              |
| 33:DA:1106:G:H8   | 33:DA:1106:G:C5'   | 1.84                     | 0.85              |
| 33:DA:1347:G:N7   | 41:DI:108:ARG:HG3  | 1.91                     | 0.85              |
| 39:DG:70:PRO:HG3  | 39:DG:102:TRP:CH2  | 2.10                     | 0.85              |
| 33:BA:411:A:H62   | 33:BA:413:G:N2     | 1.74                     | 0.85              |
| 33:BA:803:G:C8    | 33:BA:804:U:H5     | 1.94                     | 0.85              |
| 41:BI:33:SER:HB3  | 41:BI:36:GLN:HE21  | 1.39                     | 0.85              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:C0:5:ASN:ND2     | 8:CB:2019:A:H62    | 1.74                     | 0.85              |
| 5:C4:1:MET:HE3     | 5:C4:2:LYS:HG3     | 1.56                     | 0.85              |
| 8:CB:994:C:H42     | 8:CB:1160:G:H1     | 1.21                     | 0.85              |
| 8:CB:2365:G:H4'    | 29:CW:65:LYS:HE2   | 1.57                     | 0.85              |
| 10:CD:145:SER:OG   | 10:CD:146:ILE:HD12 | 1.76                     | 0.85              |
| 33:DA:454:G:H2'    | 33:DA:455:G:H8     | 1.39                     | 0.85              |
| 33:DA:958:A:N1     | 51:DS:53:GLY:HA3   | 1.92                     | 0.85              |
| 33:DA:1009:U:H3    | 33:DA:1020:G:H1    | 1.23                     | 0.85              |
| 50:DR:61:ALA:HB1   | 50:DR:66:LEU:HB2   | 1.58                     | 0.85              |
| 8:AB:1422:G:H1'    | 8:AB:1496:A:N1     | 1.91                     | 0.85              |
| 10:AD:129:THR:O    | 10:AD:140:HIS:HA   | 1.77                     | 0.85              |
| 21:AO:45:SER:HB3   | 21:AO:47:VAL:HG22  | 1.58                     | 0.85              |
| 26:AT:80:TRP:HD1   | 26:AT:81:LYS:N     | 1.73                     | 0.85              |
| 40:BH:79:ARG:HG3   | 40:BH:79:ARG:NH1   | 1.90                     | 0.85              |
| 8:CB:1616:A:H8     | 8:CB:1616:A:H5'    | 1.39                     | 0.85              |
| 8:CB:1826:G:OP2    | 9:CC:221:GLY:HA2   | 1.76                     | 0.85              |
| 8:CB:2333:A:H4'    | 8:CB:2334:U:H5'    | 1.58                     | 0.85              |
| 33:DA:998:C:H42    | 33:DA:1043:G:H1    | 1.25                     | 0.85              |
| 33:DA:1423:G:H2'   | 33:DA:1424:U:C6    | 2.11                     | 0.85              |
| 37:DE:82:HIS:CE1   | 37:DE:146:MET:HG3  | 2.10                     | 0.85              |
| 42:DJ:7:ARG:HB2    | 42:DJ:102:LEU:O    | 1.75                     | 0.85              |
| 8:AB:563:A:H8      | 8:AB:563:A:H5'     | 1.41                     | 0.85              |
| 8:AB:1598:A:C2     | 8:AB:1599:U:C2     | 2.65                     | 0.85              |
| 8:AB:1990:C:H2'    | 8:AB:1991:U:C6     | 2.12                     | 0.85              |
| 8:AB:2231:U:H2'    | 8:AB:2232:C:H6     | 1.41                     | 0.85              |
| 8:AB:2763:G:H5'    | 8:AB:2763:G:H8     | 1.40                     | 0.85              |
| 33:BA:785:G:H8     | 33:BA:785:G:H5''   | 1.39                     | 0.85              |
| 8:CB:136:G:H22     | 26:CT:3:ARG:HE     | 1.20                     | 0.85              |
| 8:CB:544:C:H2'     | 8:CB:545:U:C6      | 2.12                     | 0.85              |
| 9:CC:204:LEU:HD13  | 9:CC:210:ALA:HB1   | 1.58                     | 0.85              |
| 10:CD:136:ASN:HA   | 10:CD:139:SER:CB   | 2.06                     | 0.85              |
| 33:DA:577:G:H8     | 33:DA:816:A:C6     | 1.94                     | 0.85              |
| 35:DC:10:ARG:HE    | 35:DC:179:ALA:CB   | 1.90                     | 0.85              |
| 48:DP:39:PHE:HE2   | 48:DP:41:PRO:HG3   | 1.41                     | 0.85              |
| 8:AB:586:A:H5'     | 11:AE:84:THR:HG21  | 1.57                     | 0.85              |
| 8:AB:1631:G:C8     | 8:AB:1631:G:H3'    | 2.12                     | 0.85              |
| 8:AB:2031:A:C6     | 8:AB:2498:C:H1'    | 2.11                     | 0.85              |
| 8:AB:2080:A:H2'    | 8:AB:2081:U:C6     | 2.11                     | 0.85              |
| 14:AH:26:ALA:CA    | 14:AH:30:LEU:HB3   | 2.06                     | 0.85              |
| 36:BD:84:ASN:HD22  | 36:BD:87:GLU:H     | 1.20                     | 0.85              |
| 36:BD:160:LEU:HD13 | 36:BD:160:LEU:H    | 1.40                     | 0.85              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BK:68:ARG:HH11 | 43:BK:68:ARG:CG    | 1.90                     | 0.85              |
| 29:CW:39:GLN:H    | 29:CW:68:PHE:HB2   | 1.40                     | 0.85              |
| 33:DA:482:A:C2    | 33:DA:483:C:C2     | 2.65                     | 0.85              |
| 8:AB:2512:C:C1'   | 10:AD:146:ILE:HD11 | 2.05                     | 0.85              |
| 9:AC:241:LYS:HB3  | 9:AC:241:LYS:NZ    | 1.90                     | 0.85              |
| 22:AP:50:ARG:HD2  | 22:AP:99:LEU:HD23  | 1.57                     | 0.85              |
| 33:BA:779:C:H42   | 33:BA:803:G:H1     | 1.24                     | 0.85              |
| 8:CB:2345:G:H5'   | 8:CB:2345:G:C8     | 2.11                     | 0.85              |
| 8:AB:927:A:H2'    | 8:AB:928:A:C8      | 2.12                     | 0.84              |
| 8:AB:1824:G:OP1   | 9:AC:53:ILE:HD11   | 1.77                     | 0.84              |
| 17:AK:78:ARG:HE   | 22:AP:72:VAL:CG2   | 1.90                     | 0.84              |
| 18:AL:33:ARG:HG3  | 18:AL:33:ARG:NH1   | 1.88                     | 0.84              |
| 32:AZ:6:HIS:CD2   | 32:AZ:7:PRO:HD2    | 2.12                     | 0.84              |
| 33:BA:408:A:OP1   | 36:BD:109:THR:HG21 | 1.77                     | 0.84              |
| 33:BA:967:C:H3'   | 33:BA:968:A:C5'    | 2.07                     | 0.84              |
| 2:C1:47:ILE:HG22  | 2:C1:48:TYR:N      | 1.91                     | 0.84              |
| 3:C2:33:ARG:HD2   | 8:CB:467:G:OP1     | 1.76                     | 0.84              |
| 8:CB:745:G:H5''   | 8:CB:746:U:OP2     | 1.77                     | 0.84              |
| 8:CB:1139:G:H5''  | 8:CB:1139:G:H8     | 1.42                     | 0.84              |
| 13:CG:3:VAL:HG22  | 13:CG:4:ALA:H      | 1.41                     | 0.84              |
| 22:CP:25:VAL:HA   | 22:CP:89:GLY:H     | 1.42                     | 0.84              |
| 33:DA:584:G:C2'   | 33:DA:585:G:H5''   | 2.06                     | 0.84              |
| 33:DA:1084:G:H8   | 33:DA:1084:G:OP2   | 1.58                     | 0.84              |
| 33:DA:1206:G:H5'  | 33:DA:1206:G:H8    | 1.40                     | 0.84              |
| 48:DP:40:ASN:ND2  | 48:DP:42:ILE:HB    | 1.92                     | 0.84              |
| 8:AB:465:G:H2'    | 8:AB:466:A:C8      | 2.12                     | 0.84              |
| 8:AB:666:A:C4     | 8:AB:667:U:C5      | 2.63                     | 0.84              |
| 8:AB:1941:C:H5'   | 8:AB:1941:C:H6     | 1.42                     | 0.84              |
| 26:AT:1:MET:CG    | 26:AT:2:ILE:H      | 1.87                     | 0.84              |
| 26:AT:7:LEU:HD12  | 26:AT:7:LEU:O      | 1.76                     | 0.84              |
| 8:CB:749:A:C6     | 8:CB:1618:A:C2     | 2.65                     | 0.84              |
| 8:CB:1677:A:H5''  | 8:CB:1677:A:C8     | 2.12                     | 0.84              |
| 8:CB:2821:A:OP2   | 20:CN:2:ARG:HD2    | 1.77                     | 0.84              |
| 18:CL:57:LEU:HA   | 18:CL:58:TYR:CD2   | 2.12                     | 0.84              |
| 20:CN:64:ARG:HG2  | 20:CN:65:LEU:N     | 1.93                     | 0.84              |
| 36:DD:138:PRO:O   | 36:DD:139:ASN:HB3  | 1.76                     | 0.84              |
| 8:AB:61:C:N3      | 8:AB:94:A:H2       | 1.73                     | 0.84              |
| 8:AB:321:U:H5'    | 8:AB:321:U:C6      | 2.11                     | 0.84              |
| 12:AF:83:PRO:O    | 12:AF:84:ILE:HG12  | 1.77                     | 0.84              |
| 33:BA:155:A:H8    | 33:BA:155:A:H5'    | 1.41                     | 0.84              |
| 33:BA:1077:G:H21  | 33:BA:1079:G:H3'   | 1.40                     | 0.84              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:1189:U:H2'   | 35:BC:175:HIS:CE1 | 2.13                     | 0.84              |
| 41:BI:29:ILE:HB    | 41:BI:64:ILE:HB   | 1.59                     | 0.84              |
| 7:CA:76:G:H1'      | 28:CV:78:GLN:HE22 | 1.42                     | 0.84              |
| 8:CB:666:A:C4      | 8:CB:667:U:C5     | 2.64                     | 0.84              |
| 8:CB:828:U:O2      | 8:CB:829:A:N7     | 2.09                     | 0.84              |
| 8:CB:861:A:H5'     | 8:CB:862:G:OP2    | 1.77                     | 0.84              |
| 8:CB:1157:G:H8     | 8:CB:1157:G:H5'   | 1.43                     | 0.84              |
| 8:CB:1454:C:H5'    | 20:CN:63:ARG:NE   | 1.92                     | 0.84              |
| 8:CB:2199:A:C8     | 8:CB:2199:A:H5''  | 2.11                     | 0.84              |
| 13:CG:10:VAL:HG21  | 13:CG:44:HIS:NE2  | 1.93                     | 0.84              |
| 16:CJ:45:THR:H     | 23:CQ:63:ARG:HH21 | 1.23                     | 0.84              |
| 23:CQ:44:TYR:C     | 23:CQ:48:ASP:HB2  | 1.98                     | 0.84              |
| 26:CT:24:MET:HE2   | 26:CT:30:ILE:HG13 | 1.59                     | 0.84              |
| 33:DA:1462:C:O2'   | 33:DA:1463:U:H5'  | 1.77                     | 0.84              |
| 45:DM:106:ARG:HH11 | 45:DM:106:ARG:CG  | 1.90                     | 0.84              |
| 8:AB:38:A:O4'      | 11:AE:46:GLN:CG   | 2.26                     | 0.84              |
| 8:AB:363:G:N2      | 8:AB:364:C:C2     | 2.45                     | 0.84              |
| 8:AB:393:C:C2      | 8:AB:394:C:H5     | 1.95                     | 0.84              |
| 8:AB:1617:C:H2'    | 8:AB:1617:C:O2    | 1.77                     | 0.84              |
| 22:AP:23:ASP:OD1   | 22:AP:49:ILE:HG22 | 1.76                     | 0.84              |
| 7:CA:7:G:H8        | 7:CA:7:G:H5'      | 1.42                     | 0.84              |
| 8:CB:384:A:H8      | 8:CB:384:A:O5'    | 1.60                     | 0.84              |
| 8:CB:585:G:O2'     | 11:CE:77:ILE:HD13 | 1.77                     | 0.84              |
| 8:CB:1548:A:H2'    | 8:CB:1549:A:C8    | 2.12                     | 0.84              |
| 9:CC:42:ARG:HG2    | 9:CC:43:ASN:N     | 1.92                     | 0.84              |
| 27:CU:21:ARG:HH11  | 27:CU:21:ARG:HG2  | 1.42                     | 0.84              |
| 33:DA:34:C:H2'     | 33:DA:35:G:C8     | 2.12                     | 0.84              |
| 33:DA:950:U:H2'    | 33:DA:951:G:C8    | 2.13                     | 0.84              |
| 33:DA:1068:G:H8    | 33:DA:1068:G:H5'' | 1.43                     | 0.84              |
| 11:AE:194:LYS:HZ2  | 11:AE:194:LYS:N   | 1.75                     | 0.84              |
| 11:AE:194:LYS:H    | 11:AE:194:LYS:NZ  | 1.76                     | 0.84              |
| 24:AR:43:ASN:HB3   | 24:AR:51:VAL:HB   | 1.60                     | 0.84              |
| 33:BA:559:A:H4'    | 33:BA:560:A:H5''  | 1.58                     | 0.84              |
| 33:BA:1255:G:H8    | 33:BA:1255:G:H5'  | 1.43                     | 0.84              |
| 34:BB:46:VAL:HA    | 34:BB:49:PHE:CE2  | 2.13                     | 0.84              |
| 40:BH:37:ASN:O     | 40:BH:41:GLU:HB3  | 1.77                     | 0.84              |
| 47:BO:34:GLN:NE2   | 47:BO:38:LEU:HD21 | 1.91                     | 0.84              |
| 8:CB:1283:G:H22    | 8:CB:1286:A:H5'   | 1.40                     | 0.84              |
| 8:CB:2365:G:H4'    | 29:CW:65:LYS:CE   | 2.07                     | 0.84              |
| 8:CB:2882:A:OP1    | 20:CN:96:ARG:HD3  | 1.77                     | 0.84              |
| 13:CG:16:VAL:HG12  | 13:CG:17:LYS:H    | 1.41                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 18:CL:33:ARG:HD2  | 24:CR:85:LYS:HZ1   | 1.39                     | 0.84              |
| 19:CM:40:ARG:HA   | 19:CM:92:TRP:NE1   | 1.92                     | 0.84              |
| 42:DJ:30:LYS:HD3  | 42:DJ:31:ARG:HG3   | 1.59                     | 0.84              |
| 3:A2:34:ARG:HH21  | 3:A2:42:LEU:HD12   | 1.42                     | 0.84              |
| 8:AB:24:G:H1'     | 25:AS:77:ASP:HB3   | 1.57                     | 0.84              |
| 8:AB:2040:G:H2'   | 8:AB:2041:U:H6     | 1.42                     | 0.84              |
| 11:AE:25:GLU:HA   | 11:AE:28:VAL:HG13  | 1.60                     | 0.84              |
| 8:CB:1104:C:H2'   | 8:CB:1105:U:C6     | 2.12                     | 0.84              |
| 9:CC:257:ARG:HG2  | 9:CC:261:ARG:NH1   | 1.92                     | 0.84              |
| 12:CF:83:PRO:O    | 12:CF:84:ILE:HG12  | 1.76                     | 0.84              |
| 24:CR:92:TRP:HZ3  | 24:CR:94:THR:HG23  | 1.42                     | 0.84              |
| 33:DA:1285:A:O2'  | 33:DA:1286:U:H5''  | 1.77                     | 0.84              |
| 3:A2:13:ASN:OD1   | 8:AB:125:A:H4'     | 1.78                     | 0.84              |
| 5:A4:3:VAL:HB     | 5:A4:35:GLN:HA     | 1.56                     | 0.84              |
| 5:A4:36:ARG:HD3   | 8:AB:2742:G:OP1    | 1.77                     | 0.84              |
| 7:AA:49:C:OP1     | 21:AO:102:ARG:HB2  | 1.78                     | 0.84              |
| 8:AB:571:U:N3     | 8:AB:2030:A:C2     | 2.46                     | 0.84              |
| 20:AN:37:THR:HG22 | 20:AN:39:PRO:HD2   | 1.59                     | 0.84              |
| 33:BA:693:G:P     | 43:BK:126:ARG:HH12 | 2.01                     | 0.84              |
| 8:CB:937:C:H2'    | 8:CB:938:G:C8      | 2.13                     | 0.84              |
| 8:CB:2699:C:H2'   | 8:CB:2700:A:C8     | 2.13                     | 0.84              |
| 9:CC:155:ARG:CD   | 9:CC:157:ALA:HB3   | 2.07                     | 0.84              |
| 33:DA:395:C:N4    | 33:DA:396:C:H42    | 1.75                     | 0.84              |
| 39:DG:78:ARG:HH11 | 39:DG:81:GLY:H     | 1.23                     | 0.84              |
| 39:DG:143:MET:O   | 39:DG:147:ASN:HB2  | 1.78                     | 0.84              |
| 4:A3:58:ILE:HG13  | 4:A3:59:ALA:H      | 1.43                     | 0.84              |
| 16:AJ:121:LYS:HD2 | 16:AJ:121:LYS:N    | 1.91                     | 0.84              |
| 19:AM:110:GLU:HB3 | 19:AM:126:ILE:HG21 | 1.57                     | 0.84              |
| 22:AP:31:VAL:HG22 | 22:AP:81:ASP:HB2   | 1.58                     | 0.84              |
| 33:BA:60:A:P      | 33:BA:60:A:H8      | 2.00                     | 0.84              |
| 33:BA:444:G:H2'   | 33:BA:445:G:C8     | 2.12                     | 0.84              |
| 37:BE:81:GLN:HG2  | 37:BE:149:PRO:HD3  | 1.57                     | 0.84              |
| 1:C0:41:HIS:CG    | 1:C0:42:ILE:N      | 2.43                     | 0.84              |
| 8:CB:338:G:H5''   | 8:CB:338:G:H8      | 1.42                     | 0.84              |
| 8:CB:871:U:H4'    | 19:CM:68:PHE:CE1   | 2.13                     | 0.84              |
| 8:CB:1635:A:H8    | 8:CB:1635:A:H5'    | 1.41                     | 0.84              |
| 11:CE:194:LYS:H   | 11:CE:194:LYS:NZ   | 1.75                     | 0.84              |
| 22:CP:50:ARG:HD2  | 22:CP:99:LEU:HD23  | 1.59                     | 0.84              |
| 26:CT:68:LYS:HG3  | 26:CT:74:ILE:O     | 1.77                     | 0.84              |
| 33:DA:708:C:O2'   | 33:DA:709:U:H5'    | 1.78                     | 0.84              |
| 33:DA:975:A:H4'   | 33:DA:976:G:H5'    | 1.57                     | 0.84              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:A3:29:ARG:HD3   | 4:A3:29:ARG:N      | 1.92                     | 0.84              |
| 8:AB:666:A:C2'    | 8:AB:667:U:H5''    | 2.08                     | 0.84              |
| 8:AB:968:C:N3     | 8:AB:969:G:N7      | 2.26                     | 0.84              |
| 8:AB:1420:A:C2    | 8:AB:2211:A:H8     | 1.94                     | 0.84              |
| 8:AB:2849:U:N3    | 8:AB:2867:G:C8     | 2.46                     | 0.84              |
| 23:AQ:13:HIS:CE1  | 23:AQ:31:TYR:CE2   | 2.65                     | 0.84              |
| 25:AS:8:ARG:HA    | 25:AS:102:HIS:HD2  | 1.43                     | 0.84              |
| 26:AT:31:VAL:HG23 | 26:AT:32:LEU:H     | 1.43                     | 0.84              |
| 33:BA:402:G:H5'   | 33:BA:621:A:H1'    | 1.58                     | 0.84              |
| 33:BA:509:A:H5'   | 36:BD:50:TYR:CE2   | 2.13                     | 0.84              |
| 40:BH:77:VAL:HG23 | 40:BH:126:CYS:HA   | 1.57                     | 0.84              |
| 3:C2:18:PHE:N     | 3:C2:18:PHE:CD2    | 2.43                     | 0.84              |
| 8:CB:2694:G:N2    | 8:CB:2716:C:H1'    | 1.92                     | 0.84              |
| 8:CB:2733:A:H3'   | 8:CB:2733:A:C8     | 2.13                     | 0.84              |
| 11:CE:195:GLN:HB2 | 11:CE:198:GLU:O    | 1.78                     | 0.84              |
| 13:CG:108:PHE:HZ  | 13:CG:151:ARG:HG3  | 1.42                     | 0.84              |
| 19:CM:50:ARG:NH2  | 19:CM:53:MET:HB3   | 1.92                     | 0.84              |
| 35:DC:129:PHE:CZ  | 35:DC:156:LEU:HD13 | 2.13                     | 0.84              |
| 8:AB:91:A:H2'     | 8:AB:92:U:C6       | 2.12                     | 0.84              |
| 8:AB:396:G:H5'    | 8:AB:396:G:C8      | 2.12                     | 0.84              |
| 8:AB:557:C:H2'    | 8:AB:558:U:H6      | 1.42                     | 0.84              |
| 8:AB:784:G:H5''   | 9:AC:225:ASN:ND2   | 1.93                     | 0.84              |
| 22:AP:9:GLN:HB3   | 22:AP:56:SER:HB3   | 1.58                     | 0.84              |
| 33:BA:862:C:H2'   | 33:BA:863:U:H5'    | 1.60                     | 0.84              |
| 41:BI:12:LYS:H    | 41:BI:109:GLN:HE22 | 1.21                     | 0.84              |
| 8:CB:1256:G:C6    | 8:CB:1257:C:N4     | 2.46                     | 0.84              |
| 12:CF:33:ILE:HD11 | 12:CF:90:LEU:HB2   | 1.59                     | 0.84              |
| 14:CH:3:VAL:H     | 14:CH:21:VAL:HG11  | 1.41                     | 0.84              |
| 16:CJ:85:LYS:HE2  | 16:CJ:85:LYS:HA    | 1.60                     | 0.84              |
| 19:CM:58:LYS:HD2  | 19:CM:60:GLN:HB2   | 1.58                     | 0.84              |
| 25:CS:88:ARG:HD2  | 25:CS:94:ASP:OD1   | 1.77                     | 0.84              |
| 29:CW:42:THR:HG21 | 29:CW:67:LYS:HB2   | 1.59                     | 0.84              |
| 33:DA:230:G:H5''  | 48:DP:31:ARG:NH2   | 1.93                     | 0.84              |
| 33:DA:295:C:H2'   | 33:DA:296:U:C6     | 2.13                     | 0.84              |
| 33:DA:381:C:O2    | 33:DA:382:A:C8     | 2.31                     | 0.84              |
| 33:DA:408:A:H61   | 33:DA:434:U:H3     | 1.22                     | 0.84              |
| 33:DA:952:U:H2'   | 33:DA:953:G:O4'    | 1.78                     | 0.84              |
| 35:DC:108:PRO:HA  | 35:DC:111:ASP:HB3  | 1.60                     | 0.84              |
| 35:DC:142:ARG:HB3 | 35:DC:143:LEU:HD13 | 1.59                     | 0.84              |
| 37:DE:65:LYS:HA   | 37:DE:68:ARG:HD2   | 1.60                     | 0.84              |
| 44:DL:36:VAL:HG11 | 44:DL:73:LEU:O     | 1.76                     | 0.84              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:994:C:N4     | 8:AB:1160:G:H1    | 1.75                     | 0.83              |
| 19:AM:134:THR:HA  | 28:AV:79:ARG:HH11 | 1.41                     | 0.83              |
| 20:AN:12:ARG:HD2  | 20:AN:16:HIS:CD2  | 2.13                     | 0.83              |
| 33:BA:484:G:H4'   | 33:BA:485:U:H5'   | 1.60                     | 0.83              |
| 33:BA:644:U:H4'   | 40:BH:83:ARG:HH12 | 1.43                     | 0.83              |
| 8:CB:1019:U:H3    | 8:CB:1142:A:N6    | 1.73                     | 0.83              |
| 8:CB:1598:A:H2    | 8:CB:1599:U:C2    | 1.95                     | 0.83              |
| 8:CB:2078:C:C2    | 8:CB:2079:U:C5    | 2.65                     | 0.83              |
| 8:CB:2636:C:H5'   | 10:CD:80:TRP:CZ2  | 2.13                     | 0.83              |
| 29:CW:68:PHE:O    | 29:CW:69:GLU:HB3  | 1.76                     | 0.83              |
| 33:DA:594:U:H3    | 33:DA:645:G:H1    | 1.23                     | 0.83              |
| 8:AB:2694:G:N2    | 8:AB:2716:C:H1'   | 1.92                     | 0.83              |
| 9:AC:42:ARG:HG2   | 9:AC:43:ASN:H     | 1.41                     | 0.83              |
| 18:AL:33:ARG:HH11 | 18:AL:33:ARG:CG   | 1.90                     | 0.83              |
| 29:AW:21:GLY:HA2  | 29:AW:25:PHE:CD1  | 2.11                     | 0.83              |
| 33:BA:618:C:H3'   | 33:BA:619:U:H5''  | 1.59                     | 0.83              |
| 34:BB:26:MET:HG2  | 34:BB:192:PRO:HG3 | 1.60                     | 0.83              |
| 2:C1:44:GLN:HE21  | 2:C1:45:HIS:H     | 1.24                     | 0.83              |
| 8:CB:756:A:H5'    | 8:CB:756:A:C8     | 2.10                     | 0.83              |
| 8:CB:1024:G:H3'   | 8:CB:1025:G:H2'   | 1.59                     | 0.83              |
| 19:CM:49:ALA:HA   | 19:CM:52:ALA:HB3  | 1.60                     | 0.83              |
| 23:CQ:40:LYS:HD2  | 23:CQ:44:TYR:HD2  | 1.42                     | 0.83              |
| 33:DA:203:G:H1'   | 33:DA:465:A:H62   | 1.40                     | 0.83              |
| 33:DA:664:G:H8    | 33:DA:664:G:C5'   | 1.92                     | 0.83              |
| 33:DA:856:C:N4    | 33:DA:857:C:H41   | 1.75                     | 0.83              |
| 33:DA:1489:G:H2'  | 33:DA:1490:U:O4'  | 1.77                     | 0.83              |
| 41:DI:46:VAL:HG11 | 41:DI:75:ALA:HB1  | 1.60                     | 0.83              |
| 3:A2:25:LYS:HE2   | 3:A2:25:LYS:N     | 1.92                     | 0.83              |
| 7:AA:113:C:H2'    | 7:AA:114:C:C6     | 2.13                     | 0.83              |
| 8:AB:1813:G:N3    | 9:AC:50:THR:HG21  | 1.94                     | 0.83              |
| 13:AG:6:ALA:O     | 13:AG:8:VAL:HG23  | 1.78                     | 0.83              |
| 19:AM:31:PHE:HE2  | 19:AM:113:ALA:HB3 | 1.42                     | 0.83              |
| 19:AM:31:PHE:HA   | 19:AM:128:THR:HB  | 1.59                     | 0.83              |
| 33:BA:843:U:H3'   | 33:BA:844:G:C5'   | 2.07                     | 0.83              |
| 45:BM:3:ILE:HG23  | 45:BM:56:ARG:HG2  | 1.60                     | 0.83              |
| 8:CB:665:U:H2'    | 8:CB:666:A:C8     | 2.12                     | 0.83              |
| 16:CJ:85:LYS:HA   | 16:CJ:85:LYS:CE   | 2.08                     | 0.83              |
| 33:DA:81:A:H2     | 33:DA:89:U:H3     | 1.21                     | 0.83              |
| 33:DA:1006:G:N1   | 33:DA:1024:G:H1'  | 1.92                     | 0.83              |
| 8:AB:2239:G:H5'   | 9:AC:246:PRO:CG   | 2.08                     | 0.83              |
| 8:AB:2248:C:H2'   | 8:AB:2249:U:H5'   | 1.59                     | 0.83              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 18:AL:38:GLN:H    | 18:AL:41:ARG:NH1   | 1.76                     | 0.83              |
| 33:BA:240:G:H5''  | 33:BA:240:G:C8     | 2.13                     | 0.83              |
| 33:BA:922:G:H2'   | 33:BA:923:A:C8     | 2.13                     | 0.83              |
| 33:BA:958:A:N1    | 51:BS:53:GLY:HA3   | 1.93                     | 0.83              |
| 33:BA:1253:G:H8   | 33:BA:1253:G:H5'   | 1.42                     | 0.83              |
| 43:BK:61:ALA:O    | 43:BK:64:VAL:HG12  | 1.79                     | 0.83              |
| 8:CB:196:A:H3'    | 8:CB:197:A:H5''    | 1.60                     | 0.83              |
| 8:CB:689:A:OP1    | 8:CB:689:A:H4'     | 1.76                     | 0.83              |
| 24:CR:10:LYS:HD2  | 24:CR:11:GLN:N     | 1.94                     | 0.83              |
| 29:CW:21:GLY:HA2  | 29:CW:25:PHE:CD1   | 2.13                     | 0.83              |
| 33:DA:276:G:H5'   | 49:DQ:16:MET:SD    | 2.17                     | 0.83              |
| 33:DA:562:U:O2    | 44:DL:11:ARG:HD2   | 1.77                     | 0.83              |
| 33:DA:642:A:C2    | 33:DA:643:C:C2     | 2.66                     | 0.83              |
| 33:DA:787:A:H2'   | 33:DA:788:U:H5     | 1.43                     | 0.83              |
| 35:DC:50:SER:HB3  | 35:DC:114:LEU:HD11 | 1.59                     | 0.83              |
| 2:A1:31:GLU:HG3   | 2:A1:32:LYS:H      | 1.42                     | 0.83              |
| 8:AB:132:G:N2     | 8:AB:148:U:N3      | 2.26                     | 0.83              |
| 8:AB:1295:C:H2'   | 8:AB:1296:G:C8     | 2.13                     | 0.83              |
| 21:AO:56:LYS:HG2  | 21:AO:60:GLU:HA    | 1.58                     | 0.83              |
| 33:BA:110:C:C2    | 33:BA:111:G:C8     | 2.66                     | 0.83              |
| 33:BA:269:C:H2'   | 33:BA:270:A:C8     | 2.12                     | 0.83              |
| 33:BA:782:A:N6    | 33:BA:800:G:H21    | 1.76                     | 0.83              |
| 38:BF:53:LYS:O    | 38:BF:54:LEU:HB2   | 1.77                     | 0.83              |
| 39:BG:70:PRO:HG2  | 39:BG:102:TRP:HH2  | 1.44                     | 0.83              |
| 51:BS:50:VAL:HB   | 51:BS:57:VAL:HG22  | 1.60                     | 0.83              |
| 8:CB:968:C:N3     | 8:CB:969:G:N7      | 2.26                     | 0.83              |
| 8:CB:1454:C:N4    | 20:CN:64:ARG:HB2   | 1.93                     | 0.83              |
| 8:CB:1913:A:H4'   | 8:CB:1914:C:OP1    | 1.78                     | 0.83              |
| 8:CB:2396:G:H1    | 8:CB:2420:C:H42    | 1.20                     | 0.83              |
| 9:CC:243:PRO:HA   | 9:CC:249:VAL:HG23  | 1.60                     | 0.83              |
| 21:CO:38:GLN:HA   | 21:CO:50:ALA:HB3   | 1.60                     | 0.83              |
| 27:CU:60:LYS:HE3  | 27:CU:61:GLU:H     | 1.42                     | 0.83              |
| 32:CZ:67:PRO:HA   | 32:CZ:70:LYS:HB3   | 1.60                     | 0.83              |
| 33:DA:269:C:H2'   | 33:DA:270:A:C8     | 2.14                     | 0.83              |
| 8:AB:1392:A:H62   | 26:AT:18:GLU:HG3   | 1.41                     | 0.83              |
| 8:AB:1661:G:C5    | 8:AB:1662:U:C5     | 2.67                     | 0.83              |
| 8:AB:2135:A:H61   | 8:AB:2156:G:H2'    | 1.44                     | 0.83              |
| 8:AB:2444:G:P     | 11:AE:63:LYS:HZ1   | 2.02                     | 0.83              |
| 16:AJ:99:ARG:O    | 16:AJ:100:VAL:HB   | 1.77                     | 0.83              |
| 17:AK:10:VAL:HG21 | 17:AK:16:ALA:HA    | 1.61                     | 0.83              |
| 21:AO:98:GLN:NE2  | 21:AO:99:TYR:H     | 1.77                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:AU:72:PHE:HA    | 27:AU:96:LYS:NZ    | 1.94                     | 0.83              |
| 33:BA:657:U:H1'    | 47:BO:22:GLY:HA2   | 1.58                     | 0.83              |
| 3:C2:10:LEU:O      | 3:C2:14:ARG:HD2    | 1.78                     | 0.83              |
| 8:CB:975:A:H2'     | 8:CB:976:G:H5'     | 1.59                     | 0.83              |
| 8:CB:2255:G:H2'    | 8:CB:2256:G:H8     | 1.43                     | 0.83              |
| 8:CB:2734:A:H2'    | 8:CB:2735:G:H5'    | 1.59                     | 0.83              |
| 8:CB:2807:U:H1'    | 8:CB:2892:G:H21    | 1.39                     | 0.83              |
| 25:CS:56:ALA:HA    | 25:CS:59:GLU:HB2   | 1.60                     | 0.83              |
| 33:DA:137:U:H2'    | 33:DA:138:G:H8     | 1.39                     | 0.83              |
| 38:DF:6:ILE:HG23   | 38:DF:62:MET:HB3   | 1.58                     | 0.83              |
| 45:DM:64:VAL:O     | 45:DM:68:LEU:HB2   | 1.79                     | 0.83              |
| 52:DT:2:ASN:CG     | 52:DT:3:ILE:H      | 1.81                     | 0.83              |
| 8:AB:32:C:H42      | 8:AB:473:G:H1      | 1.23                     | 0.83              |
| 8:AB:811:U:OP2     | 18:AL:31:GLY:HA2   | 1.78                     | 0.83              |
| 8:AB:2029:G:O2'    | 8:AB:2030:A:H5'    | 1.77                     | 0.83              |
| 8:AB:2742:G:H22    | 8:AB:2762:C:H42    | 1.26                     | 0.83              |
| 23:AQ:30:VAL:HG12  | 23:AQ:31:TYR:H     | 1.44                     | 0.83              |
| 33:BA:412:A:O2'    | 33:BA:413:G:H5''   | 1.77                     | 0.83              |
| 33:BA:1375:A:H8    | 33:BA:1375:A:H5'   | 1.43                     | 0.83              |
| 7:CA:76:G:H2'      | 7:CA:77:U:C6       | 2.14                     | 0.83              |
| 8:CB:2358:A:N6     | 8:CB:2428:G:H1     | 1.77                     | 0.83              |
| 17:CK:31:ARG:HB3   | 17:CK:32:TYR:CD1   | 2.13                     | 0.83              |
| 21:CO:41:ALA:HB1   | 21:CO:42:PRO:HD3   | 1.61                     | 0.83              |
| 1:A0:47:TYR:HA     | 1:A0:52:LYS:CB     | 2.09                     | 0.83              |
| 8:AB:1252:G:H5''   | 55:AB:4447:HOH:O   | 1.79                     | 0.83              |
| 12:AF:135:ILE:HG13 | 12:AF:140:ILE:HD13 | 1.61                     | 0.83              |
| 29:AW:68:PHE:O     | 29:AW:69:GLU:HB3   | 1.75                     | 0.83              |
| 33:BA:803:G:C5     | 33:BA:804:U:C5     | 2.67                     | 0.83              |
| 33:BA:978:A:H2'    | 33:BA:979:C:C6     | 2.14                     | 0.83              |
| 3:C2:18:PHE:N      | 3:C2:18:PHE:HD2    | 1.74                     | 0.83              |
| 5:C4:2:LYS:HE2     | 5:C4:38:GLY:HA3    | 1.60                     | 0.83              |
| 8:CB:796:C:H6      | 8:CB:796:C:H3'     | 1.44                     | 0.83              |
| 11:CE:144:GLU:HG2  | 11:CE:166:LYS:HE2  | 1.59                     | 0.83              |
| 33:DA:216:U:H2'    | 33:DA:217:C:H6     | 1.42                     | 0.83              |
| 33:DA:387:U:H6     | 33:DA:387:U:H5'    | 1.44                     | 0.83              |
| 33:DA:1409:C:H6    | 33:DA:1409:C:H3'   | 1.43                     | 0.83              |
| 38:DF:68:GLN:HA    | 38:DF:71:ILE:HG22  | 1.61                     | 0.83              |
| 43:DK:33:ILE:HG21  | 43:DK:73:VAL:HG21  | 1.61                     | 0.83              |
| 7:AA:76:G:H2'      | 7:AA:77:U:C6       | 2.14                     | 0.83              |
| 8:AB:262:A:N7      | 8:AB:263:G:C8      | 2.47                     | 0.83              |
| 8:AB:1651:G:H5''   | 20:AN:39:PRO:HG2   | 1.57                     | 0.83              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1829:A:C5'    | 8:AB:1829:A:C8     | 2.62                     | 0.83              |
| 37:BE:44:ARG:HG3   | 37:BE:72:ASN:HA    | 1.60                     | 0.83              |
| 7:CA:44:G:H1'      | 7:CA:47:C:H42      | 1.42                     | 0.83              |
| 8:CB:623:C:OP2     | 18:CL:100:ILE:HG21 | 1.79                     | 0.83              |
| 8:CB:2745:C:H42    | 8:CB:2759:G:H1     | 1.25                     | 0.83              |
| 13:CG:104:LEU:O    | 13:CG:111:PRO:HB3  | 1.79                     | 0.83              |
| 22:CP:23:ASP:OD1   | 22:CP:49:ILE:HG22  | 1.79                     | 0.83              |
| 32:CZ:49:ARG:HG2   | 32:CZ:50:ASP:H     | 1.43                     | 0.83              |
| 33:DA:125:U:H2'    | 33:DA:126:G:H8     | 1.44                     | 0.83              |
| 35:DC:172:VAL:CG1  | 35:DC:202:PHE:HB2  | 2.08                     | 0.83              |
| 43:DK:16:SER:HA    | 43:DK:78:ILE:CG2   | 2.08                     | 0.83              |
| 49:DQ:56:ASP:OD1   | 49:DQ:81:ALA:HB2   | 1.79                     | 0.83              |
| 6:A5:147:SER:O     | 6:A5:149:LEU:N     | 2.12                     | 0.83              |
| 8:AB:468:G:H2'     | 8:AB:469:G:C8      | 2.13                     | 0.83              |
| 8:AB:1590:A:H2'    | 8:AB:1591:A:H8     | 1.44                     | 0.83              |
| 8:AB:1601:G:P      | 26:AT:62:VAL:HG11  | 2.19                     | 0.83              |
| 26:AT:29:THR:HG22  | 26:AT:86:THR:HG22  | 1.59                     | 0.83              |
| 27:AU:21:ARG:HG2   | 27:AU:21:ARG:HH11  | 1.42                     | 0.83              |
| 33:BA:295:C:H2'    | 33:BA:296:U:C6     | 2.14                     | 0.83              |
| 33:BA:683:G:N2     | 43:BK:39:ASN:HA    | 1.93                     | 0.83              |
| 48:BP:51:ARG:HH11  | 48:BP:51:ARG:HB3   | 1.41                     | 0.83              |
| 7:CA:56:G:H21      | 7:CA:58:A:H61      | 1.23                     | 0.83              |
| 8:CB:429:A:H2'     | 8:CB:430:A:C8      | 2.14                     | 0.83              |
| 8:CB:2303:G:H2'    | 12:CF:128:SER:OG   | 1.78                     | 0.83              |
| 8:CB:2755:C:O5'    | 8:CB:2755:C:H6     | 1.62                     | 0.83              |
| 10:CD:178:VAL:HG23 | 10:CD:179:ARG:H    | 1.41                     | 0.83              |
| 21:CO:15:ARG:HE    | 21:CO:18:LEU:HD13  | 1.42                     | 0.83              |
| 26:CT:31:VAL:HG23  | 26:CT:32:LEU:H     | 1.43                     | 0.83              |
| 26:CT:80:TRP:HD1   | 26:CT:81:LYS:N     | 1.77                     | 0.83              |
| 33:DA:405:U:C5     | 36:DD:4:LEU:HD11   | 2.13                     | 0.83              |
| 33:DA:584:G:C3'    | 33:DA:585:G:H5''   | 2.07                     | 0.83              |
| 33:DA:730:G:O2'    | 33:DA:766:A:H5'    | 1.78                     | 0.83              |
| 33:DA:763:G:H2'    | 33:DA:764:C:H6     | 1.44                     | 0.83              |
| 33:DA:891:U:H5''   | 33:DA:891:U:H6     | 1.42                     | 0.83              |
| 33:DA:1386:G:H2'   | 33:DA:1387:G:C8    | 2.14                     | 0.83              |
| 33:DA:1510:C:N4    | 33:DA:1525:G:H1    | 1.76                     | 0.83              |
| 8:AB:450:G:H2'     | 8:AB:451:U:H5''    | 1.60                     | 0.82              |
| 11:AE:147:LEU:CB   | 11:AE:183:PHE:HD1  | 1.87                     | 0.82              |
| 27:AU:38:ILE:O     | 27:AU:39:ASN:HB3   | 1.79                     | 0.82              |
| 33:BA:802:A:C2'    | 33:BA:803:G:H5'    | 2.09                     | 0.82              |
| 33:BA:1320:C:C6    | 51:BS:69:LYS:HD2   | 2.14                     | 0.82              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:571:U:N3     | 8:CB:2030:A:C2    | 2.47                     | 0.82              |
| 8:CB:910:A:C2     | 8:CB:911:A:C6     | 2.67                     | 0.82              |
| 8:CB:2352:A:H8    | 8:CB:2352:A:H5'   | 1.43                     | 0.82              |
| 13:CG:73:SER:HB3  | 13:CG:137:LYS:HE2 | 1.59                     | 0.82              |
| 23:CQ:64:ILE:CD1  | 23:CQ:95:ALA:HB2  | 2.08                     | 0.82              |
| 33:DA:531:U:C6    | 33:DA:531:U:H5'   | 2.14                     | 0.82              |
| 33:DA:853:C:C4    | 33:DA:854:U:H5    | 1.96                     | 0.82              |
| 48:DP:40:ASN:HD21 | 48:DP:42:ILE:HB   | 1.42                     | 0.82              |
| 2:A1:46:VAL:HG13  | 2:A1:47:ILE:HG13  | 1.60                     | 0.82              |
| 10:AD:124:ARG:O   | 10:AD:160:LYS:HD2 | 1.79                     | 0.82              |
| 8:CB:19:A:H2'     | 8:CB:20:C:H6      | 1.44                     | 0.82              |
| 8:CB:1716:U:H2'   | 8:CB:1717:A:C8    | 2.13                     | 0.82              |
| 33:DA:551:U:H2'   | 33:DA:552:U:C5    | 2.14                     | 0.82              |
| 33:DA:801:U:C2'   | 33:DA:802:A:C8    | 2.60                     | 0.82              |
| 33:DA:1386:G:H2'  | 33:DA:1387:G:H8   | 1.42                     | 0.82              |
| 33:DA:1423:G:C4   | 33:DA:1424:U:C5   | 2.67                     | 0.82              |
| 38:DF:53:LYS:O    | 38:DF:54:LEU:HB2  | 1.79                     | 0.82              |
| 7:AA:105:G:C4     | 7:AA:106:G:C8     | 2.67                     | 0.82              |
| 8:AB:1708:C:H2'   | 8:AB:1709:U:C6    | 2.14                     | 0.82              |
| 8:AB:2230:G:H2'   | 8:AB:2231:U:C6    | 2.14                     | 0.82              |
| 33:BA:724:G:C2    | 33:BA:725:G:C8    | 2.66                     | 0.82              |
| 33:BA:728:A:H2'   | 33:BA:729:A:C8    | 2.13                     | 0.82              |
| 33:BA:1053:G:H2'  | 33:BA:1199:U:C5   | 2.12                     | 0.82              |
| 8:CB:545:U:H1'    | 8:CB:550:C:O2     | 1.79                     | 0.82              |
| 8:CB:927:A:H2'    | 8:CB:928:A:C8     | 2.13                     | 0.82              |
| 13:CG:4:ALA:O     | 13:CG:5:LYS:HB2   | 1.78                     | 0.82              |
| 20:CN:63:ARG:O    | 20:CN:66:ALA:HB3  | 1.79                     | 0.82              |
| 33:DA:382:A:N3    | 33:DA:383:A:C8    | 2.47                     | 0.82              |
| 33:DA:1455:G:H2'  | 33:DA:1456:A:H8   | 1.42                     | 0.82              |
| 8:AB:1548:A:H2'   | 8:AB:1549:A:C8    | 2.15                     | 0.82              |
| 8:AB:1616:A:H8    | 8:AB:1616:A:H5'   | 1.41                     | 0.82              |
| 8:AB:2358:A:N6    | 8:AB:2428:G:H1    | 1.76                     | 0.82              |
| 9:AC:241:LYS:HB3  | 9:AC:241:LYS:HZ2  | 1.44                     | 0.82              |
| 19:AM:49:ALA:HA   | 19:AM:52:ALA:HB3  | 1.61                     | 0.82              |
| 19:AM:59:ARG:H    | 19:AM:59:ARG:CD   | 1.92                     | 0.82              |
| 22:AP:49:ILE:O    | 22:AP:50:ARG:HD3  | 1.80                     | 0.82              |
| 33:BA:505:G:H5'   | 33:BA:534:U:C2    | 2.14                     | 0.82              |
| 33:BA:1345:U:C4   | 33:BA:1377:A:H2   | 1.98                     | 0.82              |
| 8:CB:588:U:H1'    | 11:CE:85:PHE:CD2  | 2.15                     | 0.82              |
| 8:CB:1486:U:H3    | 8:CB:1503:A:H61   | 1.26                     | 0.82              |
| 8:CB:2738:A:H2    | 8:CB:2767:C:N3    | 1.77                     | 0.82              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:CJ:121:LYS:N   | 16:CJ:121:LYS:HD2  | 1.93                     | 0.82              |
| 18:CL:126:ARG:C   | 18:CL:126:ARG:HH11 | 1.83                     | 0.82              |
| 23:CQ:29:ARG:HH11 | 23:CQ:29:ARG:HB3   | 1.43                     | 0.82              |
| 26:CT:68:LYS:CE   | 26:CT:75:GLY:HA3   | 2.09                     | 0.82              |
| 33:DA:1216:A:H2'  | 33:DA:1217:C:C6    | 2.14                     | 0.82              |
| 48:DP:67:ILE:HG13 | 48:DP:71:VAL:CG2   | 2.08                     | 0.82              |
| 8:AB:1256:G:C6    | 8:AB:1257:C:N4     | 2.47                     | 0.82              |
| 8:AB:2434:A:C8    | 8:AB:2434:A:H5'    | 2.14                     | 0.82              |
| 19:AM:117:PHE:CD1 | 19:AM:124:LEU:HD21 | 2.15                     | 0.82              |
| 21:AO:50:ALA:HB2  | 21:AO:83:LEU:HD12  | 1.62                     | 0.82              |
| 22:AP:23:ASP:HB2  | 22:AP:93:LYS:HE2   | 1.60                     | 0.82              |
| 22:AP:25:VAL:HA   | 22:AP:89:GLY:H     | 1.45                     | 0.82              |
| 33:BA:408:A:H3'   | 33:BA:409:U:H5     | 1.45                     | 0.82              |
| 50:BR:33:THR:HG23 | 50:BR:35:SER:H     | 1.43                     | 0.82              |
| 8:CB:2360:G:N2    | 8:CB:2428:G:C5     | 2.47                     | 0.82              |
| 13:CG:26:LYS:O    | 13:CG:78:VAL:HG11  | 1.79                     | 0.82              |
| 21:CO:83:LEU:C    | 21:CO:87:ILE:HG21  | 1.99                     | 0.82              |
| 33:DA:872:A:C5    | 33:DA:874:G:C8     | 2.67                     | 0.82              |
| 33:DA:905:U:C5    | 33:DA:906:A:N7     | 2.48                     | 0.82              |
| 36:DD:123:MET:HB2 | 36:DD:126:GLY:O    | 1.80                     | 0.82              |
| 8:AB:124:G:H2'    | 8:AB:125:A:H5''    | 1.60                     | 0.82              |
| 8:AB:679:C:H2'    | 8:AB:680:C:H6      | 1.45                     | 0.82              |
| 8:AB:1141:U:OP2   | 16:AJ:65:THR:HG22  | 1.80                     | 0.82              |
| 8:AB:2572:A:C8    | 10:AD:150:GLN:HB2  | 2.14                     | 0.82              |
| 16:AJ:132:HIS:CD2 | 16:AJ:132:HIS:O    | 2.31                     | 0.82              |
| 24:AR:65:ALA:CB   | 24:AR:99:THR:H     | 1.92                     | 0.82              |
| 27:AU:39:ASN:HD22 | 27:AU:42:LYS:CE    | 1.91                     | 0.82              |
| 33:BA:1229:A:H62  | 45:BM:103:THR:HG21 | 1.44                     | 0.82              |
| 33:BA:1282:C:H2'  | 33:BA:1283:U:H6    | 1.43                     | 0.82              |
| 8:CB:1030:C:OP1   | 19:CM:117:PHE:CZ   | 2.32                     | 0.82              |
| 8:CB:2636:C:C5'   | 10:CD:80:TRP:HZ2   | 1.93                     | 0.82              |
| 18:CL:92:LEU:HD13 | 18:CL:96:LYS:CB    | 2.08                     | 0.82              |
| 27:CU:9:GLU:HB2   | 27:CU:71:ILE:HB    | 1.60                     | 0.82              |
| 27:CU:83:GLY:HA2  | 27:CU:92:VAL:HB    | 1.59                     | 0.82              |
| 33:DA:765:G:H1'   | 33:DA:812:G:N2     | 1.94                     | 0.82              |
| 41:DI:11:ARG:NE   | 41:DI:106:ASP:HB3  | 1.93                     | 0.82              |
| 41:DI:119:LYS:CB  | 41:DI:122:ARG:HB2  | 2.08                     | 0.82              |
| 8:AB:856:G:C1'    | 29:AW:23:LYS:HD2   | 2.10                     | 0.82              |
| 8:AB:2682:A:H61   | 8:AB:2728:U:H1'    | 1.45                     | 0.82              |
| 8:AB:2888:C:H2'   | 8:AB:2889:C:C6     | 2.13                     | 0.82              |
| 14:AH:69:ALA:HA   | 14:AH:140:ALA:HB2  | 1.59                     | 0.82              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AO:48:LEU:HD23  | 21:AO:49:VAL:N     | 1.95                     | 0.82              |
| 33:BA:846:G:H2'    | 33:BA:847:G:H8     | 1.41                     | 0.82              |
| 43:BK:19:VAL:HG23  | 43:BK:34:THR:HG23  | 1.60                     | 0.82              |
| 8:CB:396:G:H5'     | 8:CB:396:G:C8      | 2.14                     | 0.82              |
| 8:CB:1022:G:N2     | 8:CB:1142:A:C2     | 2.47                     | 0.82              |
| 8:CB:1667:G:OP1    | 17:CK:6:THR:HA     | 1.79                     | 0.82              |
| 8:CB:2032:G:N2     | 10:CD:150:GLN:HB3  | 1.93                     | 0.82              |
| 10:CD:122:VAL:HG11 | 10:CD:141:ARG:NH1  | 1.95                     | 0.82              |
| 16:CJ:36:LEU:HA    | 16:CJ:51:GLY:O     | 1.80                     | 0.82              |
| 17:CK:2:ILE:HG21   | 17:CK:67:LYS:HE3   | 1.61                     | 0.82              |
| 20:CN:115:LEU:H    | 20:CN:115:LEU:HD23 | 1.43                     | 0.82              |
| 26:CT:66:LYS:HE3   | 26:CT:66:LYS:C     | 2.00                     | 0.82              |
| 26:CT:68:LYS:HE2   | 26:CT:75:GLY:CA    | 2.09                     | 0.82              |
| 33:DA:629:A:N7     | 33:DA:630:A:N7     | 2.27                     | 0.82              |
| 3:A2:13:ASN:HA     | 3:A2:18:PHE:CG     | 2.14                     | 0.82              |
| 8:AB:448:U:C5      | 8:AB:583:G:N3      | 2.48                     | 0.82              |
| 8:AB:908:C:H5''    | 8:AB:909:A:OP2     | 1.79                     | 0.82              |
| 8:AB:1486:U:H3     | 8:AB:1503:A:H61    | 1.25                     | 0.82              |
| 8:AB:1913:A:H4'    | 8:AB:1914:C:OP1    | 1.79                     | 0.82              |
| 13:AG:68:ARG:HG2   | 13:AG:71:LEU:HD22  | 1.61                     | 0.82              |
| 20:AN:1:MET:HE3    | 20:AN:4:ARG:O      | 1.79                     | 0.82              |
| 29:AW:50:VAL:HG22  | 29:AW:51:GLY:H     | 1.44                     | 0.82              |
| 33:BA:533:A:H4'    | 33:BA:534:U:OP2    | 1.79                     | 0.82              |
| 33:BA:1296:C:H5'   | 45:BM:13:HIS:NE2   | 1.95                     | 0.82              |
| 36:BD:48:SER:HB3   | 36:BD:51:GLY:HA3   | 1.62                     | 0.82              |
| 8:CB:124:G:H5'     | 8:CB:124:G:C8      | 2.13                     | 0.82              |
| 8:CB:915:C:C6      | 8:CB:915:C:H5''    | 2.15                     | 0.82              |
| 8:CB:1631:G:C8     | 8:CB:1631:G:H3'    | 2.15                     | 0.82              |
| 9:CC:237:ARG:C     | 9:CC:237:ARG:HE    | 1.83                     | 0.82              |
| 36:DD:169:TRP:CE2  | 36:DD:185:PRO:HB3  | 2.14                     | 0.82              |
| 1:A0:21:LEU:HD12   | 1:A0:21:LEU:H      | 1.45                     | 0.82              |
| 8:AB:118:A:C8      | 8:AB:119:A:C8      | 2.67                     | 0.82              |
| 8:AB:196:A:H3'     | 8:AB:197:A:H5''    | 1.61                     | 0.82              |
| 8:AB:669:G:N3      | 8:AB:669:G:H2'     | 1.94                     | 0.82              |
| 8:AB:685:A:C2      | 8:AB:787:C:H1'     | 2.15                     | 0.82              |
| 8:AB:1019:U:H3     | 8:AB:1142:A:N6     | 1.78                     | 0.82              |
| 19:AM:59:ARG:HD2   | 19:AM:59:ARG:N     | 1.94                     | 0.82              |
| 20:AN:126:ALA:O    | 20:AN:127:GLU:HB2  | 1.78                     | 0.82              |
| 33:BA:452:A:H5''   | 33:BA:452:A:H8     | 1.44                     | 0.82              |
| 46:BN:81:ILE:HA    | 46:BN:84:ARG:HB3   | 1.61                     | 0.82              |
| 47:BO:7:THR:O      | 47:BO:10:ILE:HG22  | 1.80                     | 0.82              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:C1:29:LYS:HB3    | 2:C1:30:PRO:CD     | 2.08                     | 0.82              |
| 8:CB:994:C:N4      | 8:CB:1160:G:H1     | 1.77                     | 0.82              |
| 8:CB:1205:A:H62    | 11:CE:164:LEU:HD13 | 1.45                     | 0.82              |
| 8:CB:1813:G:N3     | 9:CC:50:THR:HG21   | 1.93                     | 0.82              |
| 8:CB:2455:G:H2'    | 8:CB:2456:C:C6     | 2.15                     | 0.82              |
| 21:CO:86:GLY:O     | 21:CO:87:ILE:HD13  | 1.80                     | 0.82              |
| 24:CR:27:ILE:HG12  | 24:CR:29:THR:HG23  | 1.62                     | 0.82              |
| 33:DA:203:G:H1'    | 33:DA:465:A:N6     | 1.95                     | 0.82              |
| 33:DA:908:A:C2     | 33:DA:909:A:C4     | 2.68                     | 0.82              |
| 35:DC:52:SER:HA    | 35:DC:113:LYS:HD3  | 1.59                     | 0.82              |
| 37:DE:11:GLN:O     | 37:DE:38:VAL:HA    | 1.80                     | 0.82              |
| 37:DE:44:ARG:HA    | 37:DE:71:ILE:O     | 1.79                     | 0.82              |
| 41:DI:18:VAL:HG21  | 41:DI:85:ALA:HB2   | 1.59                     | 0.82              |
| 43:DK:16:SER:CB    | 43:DK:78:ILE:HA    | 2.09                     | 0.82              |
| 3:A2:31:LEU:H      | 3:A2:31:LEU:HD22   | 1.45                     | 0.82              |
| 8:AB:160:A:H1'     | 8:AB:2208:C:O2'    | 1.80                     | 0.82              |
| 8:AB:796:C:H6      | 8:AB:796:C:H3'     | 1.45                     | 0.82              |
| 8:AB:2699:C:H2'    | 8:AB:2700:A:C8     | 2.14                     | 0.82              |
| 10:AD:36:GLN:OE1   | 10:AD:89:GLU:HB2   | 1.80                     | 0.82              |
| 18:AL:57:LEU:HD22  | 18:AL:58:TYR:HE2   | 1.43                     | 0.82              |
| 19:AM:73:ILE:HG22  | 19:AM:74:THR:N     | 1.94                     | 0.82              |
| 33:BA:81:A:H2      | 33:BA:89:U:H3      | 1.23                     | 0.82              |
| 34:BB:102:ASN:O    | 34:BB:106:VAL:HG23 | 1.80                     | 0.82              |
| 39:BG:12:LEU:HD13  | 39:BG:13:PRO:HD2   | 1.60                     | 0.82              |
| 48:BP:3:THR:HG22   | 48:BP:66:THR:HB    | 1.62                     | 0.82              |
| 8:CB:85:G:H5''     | 8:CB:85:G:H8       | 1.45                     | 0.82              |
| 8:CB:979:A:C2      | 8:CB:982:C:C2      | 2.68                     | 0.82              |
| 8:CB:2327:A:H2'    | 8:CB:2328:A:C8     | 2.14                     | 0.82              |
| 8:CB:2360:G:H1'    | 18:CL:61:LEU:HD21  | 1.61                     | 0.82              |
| 11:CE:139:LYS:HA   | 11:CE:143:LEU:CD2  | 2.10                     | 0.82              |
| 18:CL:117:THR:HG23 | 18:CL:118:THR:N    | 1.94                     | 0.82              |
| 27:CU:27:VAL:CG1   | 27:CU:33:VAL:HA    | 2.09                     | 0.82              |
| 29:CW:3:LYS:HA     | 29:CW:3:LYS:HE2    | 1.62                     | 0.82              |
| 33:DA:36:C:H2'     | 33:DA:37:U:H5'     | 1.61                     | 0.82              |
| 33:DA:1252:A:N6    | 33:DA:1285:A:H61   | 1.78                     | 0.82              |
| 33:DA:1332:A:H2'   | 33:DA:1333:A:H8    | 1.44                     | 0.82              |
| 8:AB:429:A:H2'     | 8:AB:430:A:C8      | 2.15                     | 0.81              |
| 8:AB:946:C:H5'     | 55:AB:4392:HOH:O   | 1.80                     | 0.81              |
| 8:AB:1062:G:H1     | 8:AB:1076:C:H42    | 1.25                     | 0.81              |
| 8:AB:1988:G:H2'    | 8:AB:1989:G:H5'    | 1.60                     | 0.81              |
| 8:AB:2469:A:H5''   | 19:AM:55:ARG:HD2   | 1.59                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AJ:96:ARG:CZ    | 16:AJ:98:GLU:HB3   | 2.10                     | 0.81              |
| 18:AL:126:ARG:C    | 18:AL:126:ARG:HH11 | 1.83                     | 0.81              |
| 33:BA:670:G:H3'    | 33:BA:670:G:C8     | 2.15                     | 0.81              |
| 33:BA:683:G:H5'    | 33:BA:683:G:C8     | 2.15                     | 0.81              |
| 33:BA:1510:C:H42   | 33:BA:1525:G:H1    | 1.28                     | 0.81              |
| 34:BB:187:ASP:CB   | 34:BB:203:ASP:HB3  | 2.09                     | 0.81              |
| 8:CB:1598:A:C2     | 8:CB:1599:U:C2     | 2.68                     | 0.81              |
| 18:CL:35:HIS:CE1   | 24:CR:84:ARG:C     | 2.53                     | 0.81              |
| 19:CM:117:PHE:CD1  | 19:CM:124:LEU:HD21 | 2.14                     | 0.81              |
| 27:CU:78:LYS:CD    | 27:CU:96:LYS:HG3   | 2.08                     | 0.81              |
| 33:DA:559:A:H4'    | 33:DA:560:A:H5''   | 1.61                     | 0.81              |
| 33:DA:1329:A:O2'   | 45:DM:68:LEU:HD11  | 1.79                     | 0.81              |
| 49:DQ:64:ARG:HH11  | 49:DQ:64:ARG:HG2   | 1.45                     | 0.81              |
| 3:A2:10:LEU:HD13   | 3:A2:10:LEU:H      | 1.44                     | 0.81              |
| 8:AB:1020:A:H4'    | 8:AB:1021:A:C5'    | 2.10                     | 0.81              |
| 8:AB:1598:A:H2     | 8:AB:1599:U:N1     | 1.77                     | 0.81              |
| 9:AC:216:ARG:HB3   | 9:AC:217:PRO:CD    | 2.10                     | 0.81              |
| 33:BA:887:G:H21    | 33:BA:1489:G:H4'   | 1.45                     | 0.81              |
| 33:BA:1514:G:H1    | 33:BA:1521:C:N4    | 1.77                     | 0.81              |
| 34:BB:99:MET:O     | 34:BB:100:LEU:HB2  | 1.80                     | 0.81              |
| 8:CB:103:A:H5''    | 8:CB:103:A:H8      | 1.44                     | 0.81              |
| 8:CB:948:C:H2'     | 8:CB:949:G:C8      | 2.15                     | 0.81              |
| 9:CC:196:ASN:HB3   | 9:CC:199:HIS:NE2   | 1.95                     | 0.81              |
| 10:CD:101:PHE:HB2  | 10:CD:105:LYS:HD2  | 1.62                     | 0.81              |
| 20:CN:1:MET:HG2    | 20:CN:3:HIS:CE1    | 2.14                     | 0.81              |
| 33:DA:60:A:P       | 33:DA:60:A:H8      | 2.03                     | 0.81              |
| 33:DA:1277:C:H2'   | 33:DA:1279:G:H8    | 1.45                     | 0.81              |
| 7:AA:99:A:C4       | 7:AA:100:G:C8      | 2.67                     | 0.81              |
| 8:AB:144:A:H5''    | 8:AB:144:A:H8      | 1.45                     | 0.81              |
| 8:AB:737:C:O2'     | 8:AB:738:G:H5'     | 1.79                     | 0.81              |
| 8:AB:1318:U:H2'    | 8:AB:1319:C:C6     | 2.14                     | 0.81              |
| 9:AC:20:ASN:CB     | 9:AC:202:ARG:HH11  | 1.92                     | 0.81              |
| 9:AC:179:GLU:HG3   | 9:AC:266:ILE:HA    | 1.61                     | 0.81              |
| 10:AD:138:LEU:HD23 | 10:AD:138:LEU:N    | 1.96                     | 0.81              |
| 14:AH:3:VAL:HB     | 14:AH:37:VAL:HG23  | 1.62                     | 0.81              |
| 14:AH:99:ILE:HG21  | 14:AH:115:VAL:HG11 | 1.61                     | 0.81              |
| 26:AT:69:ARG:HD2   | 26:AT:70:HIS:N     | 1.95                     | 0.81              |
| 33:BA:555:U:H2'    | 33:BA:556:C:H6     | 1.45                     | 0.81              |
| 33:BA:909:A:H2'    | 33:BA:910:C:H6     | 1.45                     | 0.81              |
| 33:BA:1191:A:H5'   | 33:BA:1191:A:H8    | 1.43                     | 0.81              |
| 46:BN:79:SER:H     | 46:BN:82:LYS:HB2   | 1.44                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BN:87:ALA:HB2   | 46:BN:92:ILE:HD12  | 1.61                     | 0.81              |
| 3:C2:25:LYS:HE2    | 3:C2:25:LYS:N      | 1.94                     | 0.81              |
| 8:CB:631:A:H1'     | 18:CL:66:PHE:HB3   | 1.61                     | 0.81              |
| 8:CB:831:G:C6      | 8:CB:832:U:N3      | 2.48                     | 0.81              |
| 8:CB:1049:C:H1'    | 8:CB:1113:U:O2'    | 1.79                     | 0.81              |
| 8:CB:2208:C:H2'    | 8:CB:2209:G:C8     | 2.15                     | 0.81              |
| 8:CB:2682:A:C2     | 8:CB:2683:C:C2     | 2.68                     | 0.81              |
| 8:CB:2849:U:N3     | 8:CB:2867:G:C8     | 2.48                     | 0.81              |
| 9:CC:24:HIS:HB3    | 9:CC:27:LYS:CE     | 2.08                     | 0.81              |
| 9:CC:216:ARG:HB3   | 9:CC:217:PRO:CD    | 2.09                     | 0.81              |
| 11:CE:17:THR:HG21  | 11:CE:196:VAL:HG13 | 1.62                     | 0.81              |
| 11:CE:143:LEU:HA   | 11:CE:148:ILE:HG21 | 1.61                     | 0.81              |
| 13:CG:169:ARG:NE   | 13:CG:170:THR:H    | 1.79                     | 0.81              |
| 14:CH:18:GLN:O     | 14:CH:18:GLN:HG3   | 1.78                     | 0.81              |
| 21:CO:41:ALA:HB1   | 21:CO:42:PRO:CD    | 2.10                     | 0.81              |
| 23:CQ:40:LYS:HD2   | 23:CQ:44:TYR:CD2   | 2.15                     | 0.81              |
| 24:CR:78:ARG:N     | 24:CR:89:HIS:HE1   | 1.78                     | 0.81              |
| 27:CU:82:VAL:O     | 27:CU:92:VAL:HG11  | 1.80                     | 0.81              |
| 33:DA:321:A:H2'    | 33:DA:328:C:H5     | 1.43                     | 0.81              |
| 33:DA:584:G:H2'    | 33:DA:585:G:H5''   | 1.62                     | 0.81              |
| 33:DA:720:C:N4     | 33:DA:721:G:N2     | 2.27                     | 0.81              |
| 33:DA:774:G:C5     | 33:DA:775:G:C8     | 2.69                     | 0.81              |
| 33:DA:1059:C:C4    | 33:DA:1060:U:H5    | 1.97                     | 0.81              |
| 33:DA:1131:G:H8    | 33:DA:1131:G:O5'   | 1.62                     | 0.81              |
| 33:DA:1278:G:H5'   | 33:DA:1278:G:N3    | 1.95                     | 0.81              |
| 40:DH:68:LYS:H     | 40:DH:68:LYS:HE3   | 1.46                     | 0.81              |
| 40:DH:124:ILE:HG13 | 40:DH:124:ILE:O    | 1.78                     | 0.81              |
| 42:DJ:37:ARG:HB2   | 42:DJ:76:ILE:HA    | 1.60                     | 0.81              |
| 44:DL:115:LYS:O    | 44:DL:116:TYR:HB2  | 1.79                     | 0.81              |
| 8:AB:616:A:H2'     | 8:AB:617:G:C8      | 2.15                     | 0.81              |
| 8:AB:713:G:H21     | 8:AB:718:A:H2      | 1.27                     | 0.81              |
| 8:AB:2091:C:O2'    | 32:AZ:32:LEU:HB3   | 1.81                     | 0.81              |
| 11:AE:169:VAL:HG23 | 11:AE:170:ARG:N    | 1.96                     | 0.81              |
| 15:AI:18:ASN:N     | 15:AI:19:PRO:HD2   | 1.94                     | 0.81              |
| 18:AL:78:ARG:HB2   | 18:AL:99:ASN:CG    | 2.00                     | 0.81              |
| 29:AW:18:LYS:HD2   | 29:AW:18:LYS:H     | 1.43                     | 0.81              |
| 33:BA:625:U:H4'    | 48:BP:16:PHE:CE2   | 2.15                     | 0.81              |
| 34:BB:95:TRP:CZ2   | 34:BB:171:ALA:HA   | 2.16                     | 0.81              |
| 38:BF:6:ILE:HG23   | 38:BF:62:MET:HB3   | 1.61                     | 0.81              |
| 3:C2:31:LEU:H      | 3:C2:31:LEU:HD22   | 1.46                     | 0.81              |
| 8:CB:163:C:H2'     | 8:CB:164:C:O4'     | 1.78                     | 0.81              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:657:U:H2'    | 8:CB:658:U:H6     | 1.42                     | 0.81              |
| 8:CB:2230:G:H2'   | 8:CB:2231:U:C6    | 2.16                     | 0.81              |
| 8:CB:2231:U:H2'   | 8:CB:2232:C:C6    | 2.15                     | 0.81              |
| 8:CB:2891:U:H6    | 8:CB:2891:U:H3'   | 1.45                     | 0.81              |
| 28:CV:63:ILE:HB   | 28:CV:70:ILE:HG13 | 1.63                     | 0.81              |
| 33:DA:240:G:H5''  | 33:DA:240:G:C8    | 2.16                     | 0.81              |
| 37:DE:24:VAL:HG23 | 37:DE:25:LYS:H    | 1.46                     | 0.81              |
| 48:DP:67:ILE:HG13 | 48:DP:71:VAL:HG23 | 1.63                     | 0.81              |
| 3:A2:21:ARG:HG2   | 3:A2:21:ARG:HH11  | 1.45                     | 0.81              |
| 8:AB:61:C:C2      | 8:AB:94:A:H2      | 1.98                     | 0.81              |
| 8:AB:374:A:H2'    | 8:AB:375:G:H8     | 1.46                     | 0.81              |
| 8:AB:665:U:H2'    | 8:AB:666:A:C8     | 2.15                     | 0.81              |
| 8:AB:975:A:H2'    | 8:AB:976:G:H5'    | 1.60                     | 0.81              |
| 8:AB:2062:A:H2'   | 8:AB:2063:C:H5'   | 1.60                     | 0.81              |
| 16:AJ:114:LEU:O   | 16:AJ:118:MET:HB2 | 1.81                     | 0.81              |
| 33:BA:473:U:H2'   | 33:BA:474:G:H8    | 1.45                     | 0.81              |
| 33:BA:675:A:N1    | 33:BA:716:A:C2    | 2.48                     | 0.81              |
| 40:BH:91:LEU:HB3  | 40:BH:92:PRO:CD   | 2.10                     | 0.81              |
| 51:BS:28:LYS:HD3  | 51:BS:28:LYS:H    | 1.46                     | 0.81              |
| 4:C3:11:LYS:HD2   | 18:CL:62:PRO:O    | 1.80                     | 0.81              |
| 8:CB:158:U:H2'    | 8:CB:159:G:H5'    | 1.62                     | 0.81              |
| 8:CB:737:C:O2'    | 8:CB:738:G:H5'    | 1.80                     | 0.81              |
| 8:CB:2062:A:H2'   | 8:CB:2063:C:H5'   | 1.61                     | 0.81              |
| 10:CD:33:ARG:HG2  | 10:CD:89:GLU:HB2  | 1.63                     | 0.81              |
| 10:CD:62:LYS:N    | 10:CD:62:LYS:HZ2  | 1.79                     | 0.81              |
| 19:CM:54:THR:HA   | 19:CM:57:VAL:HB   | 1.62                     | 0.81              |
| 22:CP:49:ILE:O    | 22:CP:50:ARG:HD3  | 1.81                     | 0.81              |
| 33:DA:432:A:C5    | 33:DA:433:G:C8    | 2.68                     | 0.81              |
| 33:DA:685:G:N2    | 33:DA:706:A:N6    | 2.28                     | 0.81              |
| 33:DA:797:C:C2'   | 33:DA:798:U:H5'   | 2.10                     | 0.81              |
| 40:DH:39:LEU:HB2  | 40:DH:45:ILE:HD11 | 1.62                     | 0.81              |
| 42:DJ:44:THR:O    | 42:DJ:46:LYS:HG3  | 1.80                     | 0.81              |
| 8:AB:79:C:H2'     | 8:AB:346:A:C8     | 2.15                     | 0.81              |
| 8:AB:2327:A:H2'   | 8:AB:2328:A:C8    | 2.15                     | 0.81              |
| 8:AB:2498:C:O2'   | 8:AB:2499:C:H5'   | 1.80                     | 0.81              |
| 8:AB:2675:A:OP1   | 17:AK:30:ARG:HA   | 1.79                     | 0.81              |
| 11:AE:27:LEU:HD13 | 11:AE:31:VAL:HG21 | 1.62                     | 0.81              |
| 27:AU:11:ILE:O    | 27:AU:69:VAL:HB   | 1.79                     | 0.81              |
| 33:BA:509:A:H5'   | 36:BD:50:TYR:HE2  | 1.46                     | 0.81              |
| 39:BG:57:GLU:HA   | 39:BG:60:ALA:HB3  | 1.62                     | 0.81              |
| 8:CB:2638:G:N2    | 8:CB:2775:G:H2'   | 1.95                     | 0.81              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:CE:194:LYS:HZ2 | 11:CE:194:LYS:N   | 1.76                     | 0.81              |
| 18:CL:57:LEU:HA   | 18:CL:58:TYR:HD2  | 1.45                     | 0.81              |
| 20:CN:33:ILE:HG21 | 20:CN:112:TYR:HD1 | 1.45                     | 0.81              |
| 28:CV:53:LYS:HD3  | 28:CV:54:ALA:H    | 1.45                     | 0.81              |
| 33:DA:604:G:H2'   | 33:DA:605:U:H5'   | 1.60                     | 0.81              |
| 33:DA:1360:A:N6   | 33:DA:1361:G:H21  | 1.79                     | 0.81              |
| 33:DA:1504:G:OP1  | 33:DA:1507:A:H4'  | 1.80                     | 0.81              |
| 8:AB:96:C:OP1     | 30:AX:39:GLN:HG2  | 1.79                     | 0.81              |
| 8:AB:142:A:C2     | 26:AT:2:ILE:HD12  | 2.16                     | 0.81              |
| 8:AB:477:A:H2'    | 8:AB:478:A:C8     | 2.15                     | 0.81              |
| 8:AB:689:A:OP1    | 8:AB:689:A:H4'    | 1.78                     | 0.81              |
| 8:AB:2188:U:H2'   | 8:AB:2189:U:O4'   | 1.81                     | 0.81              |
| 8:AB:2208:C:H2'   | 8:AB:2209:G:C8    | 2.15                     | 0.81              |
| 8:AB:2289:G:H8    | 8:AB:2289:G:H5'   | 1.45                     | 0.81              |
| 8:AB:2337:G:H2'   | 8:AB:2337:G:N3    | 1.95                     | 0.81              |
| 9:AC:205:GLY:C    | 9:AC:206:LYS:HE2  | 2.00                     | 0.81              |
| 18:AL:29:LYS:HD2  | 18:AL:31:GLY:H    | 1.41                     | 0.81              |
| 33:BA:42:G:N2     | 33:BA:401:C:H1'   | 1.95                     | 0.81              |
| 33:BA:806:C:H2'   | 33:BA:807:A:C8    | 2.15                     | 0.81              |
| 33:BA:994:A:H8    | 33:BA:994:A:H5'   | 1.45                     | 0.81              |
| 8:CB:1139:G:H5''  | 8:CB:1139:G:C8    | 2.16                     | 0.81              |
| 8:CB:2025:C:H5''  | 8:CB:2026:U:OP2   | 1.81                     | 0.81              |
| 20:CN:12:ARG:CD   | 20:CN:16:HIS:HD2  | 1.93                     | 0.81              |
| 25:CS:110:ARG:HG3 | 25:CS:110:ARG:NH1 | 1.89                     | 0.81              |
| 33:DA:870:U:H6    | 33:DA:870:U:H5'   | 1.44                     | 0.81              |
| 33:DA:1252:A:H2'  | 33:DA:1253:G:O4'  | 1.80                     | 0.81              |
| 43:DK:124:LYS:CA  | 53:DU:33:ARG:HH12 | 1.94                     | 0.81              |
| 8:AB:324:A:C8     | 8:AB:325:G:C8     | 2.68                     | 0.81              |
| 8:AB:1295:C:H2'   | 8:AB:1296:G:H8    | 1.44                     | 0.81              |
| 8:AB:1682:G:H8    | 8:AB:1682:G:H5'   | 1.45                     | 0.81              |
| 8:AB:1803:A:O2'   | 9:AC:254:LYS:HE3  | 1.80                     | 0.81              |
| 8:AB:2728:U:H2'   | 8:AB:2729:G:C8    | 2.16                     | 0.81              |
| 9:AC:164:VAL:HG23 | 9:AC:172:THR:HG22 | 1.62                     | 0.81              |
| 10:AD:113:SER:O   | 10:AD:167:ASN:HB3 | 1.81                     | 0.81              |
| 13:AG:122:ALA:O   | 13:AG:123:GLU:HG3 | 1.80                     | 0.81              |
| 33:BA:451:A:H5'   | 48:BP:70:ARG:HH12 | 1.46                     | 0.81              |
| 33:BA:950:U:H2'   | 33:BA:951:G:C8    | 2.15                     | 0.81              |
| 8:CB:1024:G:O6    | 8:CB:1025:G:N1    | 2.13                     | 0.81              |
| 8:CB:1590:A:H2'   | 8:CB:1591:A:C8    | 2.16                     | 0.81              |
| 19:CM:133:LYS:HD3 | 28:CV:52:ALA:O    | 1.80                     | 0.81              |
| 21:CO:27:VAL:HG11 | 21:CO:38:GLN:HB3  | 1.62                     | 0.81              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:788:U:H2'    | 33:DA:789:U:H5'    | 1.63                     | 0.81              |
| 37:DE:33:THR:HG23  | 37:DE:51:LYS:HD3   | 1.62                     | 0.81              |
| 37:DE:76:ASN:HB2   | 37:DE:81:GLN:HG2   | 1.63                     | 0.81              |
| 49:DQ:64:ARG:HH11  | 49:DQ:64:ARG:CB    | 1.94                     | 0.81              |
| 10:AD:98:VAL:HG23  | 10:AD:101:PHE:CE2  | 2.15                     | 0.81              |
| 11:AE:119:ILE:HA   | 11:AE:189:THR:OG1  | 1.80                     | 0.81              |
| 11:AE:153:LEU:HD13 | 11:AE:193:VAL:HG21 | 1.60                     | 0.81              |
| 26:AT:67:VAL:HG12  | 26:AT:68:LYS:H     | 1.44                     | 0.81              |
| 32:AZ:9:TYR:CD2    | 32:AZ:10:GLU:N     | 2.48                     | 0.81              |
| 33:BA:1404:C:H42   | 33:BA:1497:G:H1    | 1.28                     | 0.81              |
| 36:BD:81:LEU:HD12  | 36:BD:88:ASN:HB3   | 1.62                     | 0.81              |
| 8:CB:1838:C:H4'    | 8:CB:1839:G:H5'    | 1.63                     | 0.81              |
| 10:CD:101:PHE:O    | 10:CD:105:LYS:HD2  | 1.81                     | 0.81              |
| 11:CE:109:LEU:HD13 | 11:CE:113:VAL:HG13 | 1.62                     | 0.81              |
| 12:CF:67:THR:OG1   | 12:CF:85:GLY:HA3   | 1.81                     | 0.81              |
| 18:CL:117:THR:CG2  | 18:CL:118:THR:H    | 1.94                     | 0.81              |
| 25:CS:8:ARG:HA     | 25:CS:102:HIS:HD2  | 1.46                     | 0.81              |
| 36:DD:144:ILE:CD1  | 36:DD:154:VAL:HG21 | 2.10                     | 0.81              |
| 16:AJ:85:LYS:HA    | 16:AJ:85:LYS:HE2   | 1.59                     | 0.81              |
| 20:AN:57:THR:HG23  | 20:AN:62:ASN:HD21  | 1.45                     | 0.81              |
| 20:AN:96:ARG:NH2   | 20:AN:116:VAL:HG22 | 1.96                     | 0.81              |
| 33:BA:662:U:O2'    | 33:BA:836:G:H5'    | 1.81                     | 0.81              |
| 33:BA:688:G:C8     | 33:BA:688:G:H5''   | 2.16                     | 0.81              |
| 33:BA:712:A:H5'    | 33:BA:712:A:C8     | 2.15                     | 0.81              |
| 44:BL:89:LEU:HB3   | 44:BL:92:VAL:HG21  | 1.61                     | 0.81              |
| 8:CB:1301:A:O2'    | 8:CB:1302:A:H3'    | 1.81                     | 0.81              |
| 8:CB:1353:A:C4     | 8:CB:1354:A:N7     | 2.49                     | 0.81              |
| 8:CB:1824:G:H1'    | 9:CC:247:TRP:HZ3   | 1.45                     | 0.81              |
| 8:CB:2528:U:O2'    | 8:CB:2529:G:H5''   | 1.80                     | 0.81              |
| 10:CD:122:VAL:HG21 | 10:CD:141:ARG:HD2  | 1.63                     | 0.81              |
| 12:CF:135:ILE:HG13 | 12:CF:140:ILE:HD13 | 1.63                     | 0.81              |
| 23:CQ:13:HIS:CD2   | 23:CQ:31:TYR:CZ    | 2.69                     | 0.81              |
| 26:CT:29:THR:HG22  | 26:CT:86:THR:HG22  | 1.61                     | 0.81              |
| 33:DA:237:G:H2'    | 33:DA:238:A:C8     | 2.17                     | 0.81              |
| 33:DA:1418:A:C2    | 33:DA:1483:A:C2    | 2.69                     | 0.81              |
| 8:AB:675:A:O2'     | 8:AB:676:A:H5'     | 1.80                     | 0.80              |
| 8:AB:745:G:H5''    | 8:AB:746:U:OP2     | 1.80                     | 0.80              |
| 8:AB:1003:G:H5''   | 8:AB:1003:G:H8     | 1.45                     | 0.80              |
| 17:AK:2:ILE:HG23   | 17:AK:33:ALA:O     | 1.81                     | 0.80              |
| 21:AO:57:ALA:HB3   | 21:AO:62:LEU:HA    | 1.60                     | 0.80              |
| 23:AQ:98:ALA:HB2   | 23:AQ:105:PHE:CD1  | 2.16                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:36:C:H2'     | 33:BA:37:U:H5'     | 1.63                     | 0.80              |
| 33:BA:1011:C:N4    | 33:BA:1018:G:H1    | 1.79                     | 0.80              |
| 8:CB:688:U:H2'     | 8:CB:689:A:H5''    | 1.63                     | 0.80              |
| 8:CB:2866:U:H4'    | 8:CB:2867:G:H4'    | 1.63                     | 0.80              |
| 27:CU:47:PRO:HB2   | 27:CU:49:PRO:HD3   | 1.63                     | 0.80              |
| 30:CX:36:GLN:HG3   | 30:CX:40:SER:HB3   | 1.63                     | 0.80              |
| 31:CY:1:ALA:O      | 31:CY:43:ILE:HG13  | 1.81                     | 0.80              |
| 33:DA:110:C:C2     | 33:DA:111:G:C8     | 2.69                     | 0.80              |
| 33:DA:395:C:C4     | 33:DA:396:C:N4     | 2.49                     | 0.80              |
| 8:AB:636:G:H1      | 18:AL:76:GLU:HG2   | 1.44                     | 0.80              |
| 8:AB:910:A:C2      | 8:AB:911:A:C6      | 2.70                     | 0.80              |
| 8:AB:1716:U:H2'    | 8:AB:1717:A:C8     | 2.11                     | 0.80              |
| 10:AD:178:VAL:HG23 | 10:AD:179:ARG:H    | 1.44                     | 0.80              |
| 13:AG:169:ARG:HH11 | 13:AG:171:LYS:H    | 1.29                     | 0.80              |
| 13:AG:169:ARG:HH11 | 13:AG:171:LYS:N    | 1.78                     | 0.80              |
| 18:AL:56:PRO:HB3   | 18:AL:60:ARG:NH2   | 1.95                     | 0.80              |
| 31:AY:35:VAL:HG12  | 31:AY:36:GLU:H     | 1.46                     | 0.80              |
| 34:BB:116:LEU:HA   | 34:BB:119:GLN:HG3  | 1.63                     | 0.80              |
| 8:CB:1661:G:C5     | 8:CB:1662:U:H5     | 1.98                     | 0.80              |
| 8:CB:1764:C:C2     | 8:CB:1765:U:H5     | 1.99                     | 0.80              |
| 17:CK:76:VAL:O     | 22:CP:74:GLN:HB2   | 1.79                     | 0.80              |
| 19:CM:9:PHE:HE2    | 19:CM:12:MET:HG2   | 1.42                     | 0.80              |
| 33:DA:45:G:N2      | 33:DA:398:U:C2     | 2.49                     | 0.80              |
| 33:DA:550:G:C5     | 33:DA:551:U:C5     | 2.69                     | 0.80              |
| 33:DA:556:C:H2'    | 33:DA:557:G:H5'    | 1.62                     | 0.80              |
| 33:DA:648:A:O2'    | 33:DA:649:A:H5'    | 1.81                     | 0.80              |
| 33:DA:1511:G:H1    | 33:DA:1524:C:N4    | 1.78                     | 0.80              |
| 4:A3:35:LYS:HD3    | 4:A3:35:LYS:H      | 1.45                     | 0.80              |
| 8:AB:937:C:H2'     | 8:AB:938:G:C8      | 2.16                     | 0.80              |
| 8:AB:2358:A:H2     | 18:AL:59:ARG:HH22  | 1.24                     | 0.80              |
| 8:AB:2684:U:H4'    | 17:AK:76:VAL:HG21  | 1.62                     | 0.80              |
| 12:AF:106:ALA:HB1  | 12:AF:136:ILE:HG23 | 1.63                     | 0.80              |
| 37:BE:113:VAL:O    | 37:BE:114:LEU:HG   | 1.81                     | 0.80              |
| 3:C2:21:ARG:HH11   | 3:C2:21:ARG:HG2    | 1.45                     | 0.80              |
| 8:CB:814:C:H1'     | 8:CB:1225:G:H21    | 1.46                     | 0.80              |
| 8:CB:1796:U:H4'    | 9:CC:251:THR:H     | 1.46                     | 0.80              |
| 8:CB:2742:G:O5'    | 8:CB:2742:G:H8     | 1.65                     | 0.80              |
| 13:CG:148:ARG:HH21 | 13:CG:153:PRO:HG2  | 1.45                     | 0.80              |
| 33:DA:408:A:C2     | 33:DA:409:U:H1'    | 2.16                     | 0.80              |
| 33:DA:1477:U:H2'   | 33:DA:1478:U:H6    | 1.46                     | 0.80              |
| 35:DC:13:ILE:HG22  | 35:DC:14:VAL:HG22  | 1.62                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:A1:12:SER:HB3    | 2:A1:50:GLU:OE1    | 1.81                     | 0.80              |
| 8:AB:163:C:H2'     | 8:AB:164:C:O4'     | 1.80                     | 0.80              |
| 8:AB:1837:C:C2     | 8:AB:1899:A:N6     | 2.50                     | 0.80              |
| 25:AS:83:LYS:O     | 25:AS:84:ARG:HD3   | 1.81                     | 0.80              |
| 29:AW:46:ALA:HB3   | 29:AW:75:ASN:ND2   | 1.97                     | 0.80              |
| 29:AW:48:ALA:O     | 29:AW:49:ASN:HB2   | 1.82                     | 0.80              |
| 30:AX:22:LEU:HA    | 30:AX:47:ARG:NH2   | 1.96                     | 0.80              |
| 33:BA:642:A:H2'    | 33:BA:643:C:C6     | 2.16                     | 0.80              |
| 33:BA:899:C:H3'    | 33:BA:900:A:C8     | 2.15                     | 0.80              |
| 34:BB:46:VAL:HG13  | 34:BB:47:PRO:HD3   | 1.64                     | 0.80              |
| 40:BH:125:ILE:HG22 | 40:BH:126:CYS:N    | 1.97                     | 0.80              |
| 46:BN:64:ARG:HH11  | 46:BN:64:ARG:CG    | 1.92                     | 0.80              |
| 8:CB:541:A:H2'     | 8:CB:542:C:O4'     | 1.80                     | 0.80              |
| 8:CB:2841:C:H2'    | 8:CB:2842:G:H8     | 1.46                     | 0.80              |
| 11:CE:48:THR:HA    | 11:CE:83:VAL:CG2   | 2.10                     | 0.80              |
| 11:CE:139:LYS:CA   | 11:CE:143:LEU:HD21 | 2.11                     | 0.80              |
| 30:CX:18:LEU:HA    | 30:CX:22:LEU:HG    | 1.62                     | 0.80              |
| 33:DA:861:G:H8     | 33:DA:861:G:O5'    | 1.62                     | 0.80              |
| 33:DA:880:C:C2     | 33:DA:881:G:C8     | 2.69                     | 0.80              |
| 33:DA:1398:A:H5''  | 33:DA:1398:A:H8    | 1.45                     | 0.80              |
| 52:DT:9:ARG:HA     | 52:DT:12:GLN:HB3   | 1.62                     | 0.80              |
| 8:AB:2079:U:H2'    | 8:AB:2080:A:H8     | 1.47                     | 0.80              |
| 8:AB:2089:C:H2'    | 8:AB:2090:A:H8     | 1.46                     | 0.80              |
| 10:AD:179:ARG:HG3  | 10:AD:179:ARG:HH11 | 1.45                     | 0.80              |
| 12:AF:28:PRO:CB    | 12:AF:168:LEU:HD11 | 2.11                     | 0.80              |
| 13:AG:156:TYR:CE1  | 13:AG:173:ALA:HA   | 2.15                     | 0.80              |
| 16:AJ:24:THR:O     | 16:AJ:25:LEU:HD22  | 1.81                     | 0.80              |
| 33:BA:562:U:H1'    | 44:BL:11:ARG:HB3   | 1.64                     | 0.80              |
| 33:BA:974:A:H4'    | 33:BA:975:A:O5'    | 1.82                     | 0.80              |
| 36:BD:145:ARG:HD2  | 36:BD:147:LYS:HD3  | 1.63                     | 0.80              |
| 41:BI:18:VAL:HG11  | 41:BI:82:ILE:HG12  | 1.64                     | 0.80              |
| 50:BR:70:THR:HG23  | 50:BR:72:ARG:H     | 1.45                     | 0.80              |
| 1:C0:28:SER:HA     | 1:C0:36:LYS:HB3    | 1.62                     | 0.80              |
| 5:C4:1:MET:CE      | 5:C4:2:LYS:HG3     | 2.11                     | 0.80              |
| 8:CB:392:U:H2'     | 8:CB:393:C:C6      | 2.17                     | 0.80              |
| 8:CB:634:C:H2'     | 8:CB:635:C:C6      | 2.15                     | 0.80              |
| 8:CB:685:A:C2      | 8:CB:787:C:H1'     | 2.17                     | 0.80              |
| 8:CB:1598:A:H2     | 8:CB:1599:U:N1     | 1.80                     | 0.80              |
| 8:CB:2645:G:H3'    | 8:CB:2646:C:C5'    | 2.12                     | 0.80              |
| 10:CD:113:SER:O    | 10:CD:167:ASN:HB3  | 1.81                     | 0.80              |
| 17:CK:78:ARG:HH21  | 22:CP:72:VAL:HG11  | 1.47                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 26:CT:14:PRO:HA    | 26:CT:32:LEU:HA    | 1.64                     | 0.80              |
| 36:DD:16:THR:HB    | 36:DD:18:LEU:HD22  | 1.63                     | 0.80              |
| 8:AB:528:A:H3'     | 8:AB:528:A:H8      | 1.45                     | 0.80              |
| 8:AB:634:C:H2'     | 8:AB:635:C:C6      | 2.16                     | 0.80              |
| 8:AB:2052:A:C4'    | 10:AD:149:ASN:H    | 1.88                     | 0.80              |
| 8:AB:2270:A:H4'    | 29:AW:18:LYS:CG    | 2.10                     | 0.80              |
| 8:AB:2333:A:H4'    | 8:AB:2334:U:H5'    | 1.61                     | 0.80              |
| 8:AB:2360:G:N2     | 8:AB:2428:G:C5     | 2.49                     | 0.80              |
| 8:AB:2396:G:H1     | 8:AB:2420:C:H42    | 1.25                     | 0.80              |
| 18:AL:111:ILE:H    | 18:AL:126:ARG:HH22 | 1.30                     | 0.80              |
| 18:AL:117:THR:HG23 | 18:AL:118:THR:N    | 1.95                     | 0.80              |
| 19:AM:1:MET:O      | 19:AM:65:ILE:HG12  | 1.82                     | 0.80              |
| 20:AN:33:ILE:HG21  | 20:AN:112:TYR:HD1  | 1.46                     | 0.80              |
| 24:AR:5:PHE:HB3    | 24:AR:12:HIS:CE1   | 2.17                     | 0.80              |
| 33:BA:885:G:H1     | 33:BA:912:C:N4     | 1.75                     | 0.80              |
| 7:CA:49:C:O3'      | 21:CO:68:LYS:HE2   | 1.80                     | 0.80              |
| 8:CB:477:A:H2'     | 8:CB:478:A:C8      | 2.16                     | 0.80              |
| 8:CB:1058:U:H2'    | 8:CB:1059:G:C8     | 2.16                     | 0.80              |
| 8:CB:1392:A:H2'    | 8:CB:1393:A:C8     | 2.16                     | 0.80              |
| 8:CB:1990:C:H2'    | 8:CB:1991:U:C6     | 2.17                     | 0.80              |
| 8:CB:2078:C:H2'    | 8:CB:2079:U:C6     | 2.17                     | 0.80              |
| 8:CB:2592:G:C6     | 8:CB:2593:U:N3     | 2.50                     | 0.80              |
| 8:CB:2597:G:OP1    | 9:CC:239:PHE:CG    | 2.35                     | 0.80              |
| 21:CO:16:ARG:HA    | 21:CO:16:ARG:NE    | 1.95                     | 0.80              |
| 22:CP:23:ASP:HB2   | 22:CP:93:LYS:HE2   | 1.62                     | 0.80              |
| 25:CS:11:ARG:O     | 25:CS:12:SER:HB2   | 1.79                     | 0.80              |
| 29:CW:23:LYS:CE    | 29:CW:24:ARG:HB3   | 2.11                     | 0.80              |
| 33:DA:620:C:C2     | 36:DD:131:ILE:HG21 | 2.16                     | 0.80              |
| 33:DA:712:A:H5'    | 33:DA:712:A:C8     | 2.16                     | 0.80              |
| 33:DA:1343:G:H2'   | 33:DA:1344:C:H5'   | 1.63                     | 0.80              |
| 4:A3:39:ARG:HH21   | 8:AB:2363:G:H5''   | 1.46                     | 0.80              |
| 8:AB:124:G:H8      | 8:AB:124:G:H5'     | 1.46                     | 0.80              |
| 8:AB:942:G:H5'     | 18:AL:40:SER:HB3   | 1.63                     | 0.80              |
| 8:AB:1256:G:C5     | 8:AB:1257:C:H5     | 1.99                     | 0.80              |
| 8:AB:1665:A:O2'    | 17:AK:67:LYS:HE2   | 1.81                     | 0.80              |
| 8:AB:2095:A:H5'    | 8:AB:2095:A:C8     | 2.12                     | 0.80              |
| 8:AB:2645:G:H3'    | 8:AB:2646:C:C5'    | 2.12                     | 0.80              |
| 9:AC:107:LYS:H     | 9:AC:194:VAL:CG2   | 1.93                     | 0.80              |
| 53:BU:14:ALA:HA    | 53:BU:16:ARG:NE    | 1.97                     | 0.80              |
| 3:C2:10:LEU:HD13   | 3:C2:10:LEU:H      | 1.43                     | 0.80              |
| 3:C2:18:PHE:CZ     | 3:C2:45:SER:HA     | 2.16                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:65:U:H2'      | 8:CB:66:C:C6       | 2.15                     | 0.80              |
| 8:CB:126:A:O2'     | 8:CB:127:A:H5'     | 1.81                     | 0.80              |
| 8:CB:1816:C:H5     | 9:CC:62:ARG:HD2    | 1.47                     | 0.80              |
| 8:CB:2289:G:H5'    | 8:CB:2289:G:C8     | 2.16                     | 0.80              |
| 8:CB:2872:A:O2'    | 8:CB:2873:A:H5''   | 1.81                     | 0.80              |
| 9:CC:53:ILE:HG12   | 9:CC:218:THR:OG1   | 1.81                     | 0.80              |
| 11:CE:49:ARG:HB2   | 11:CE:51:GLU:HG2   | 1.63                     | 0.80              |
| 12:CF:28:PRO:CB    | 12:CF:168:LEU:HD11 | 2.11                     | 0.80              |
| 13:CG:79:THR:HG23  | 13:CG:80:GLU:N     | 1.96                     | 0.80              |
| 23:CQ:50:ARG:HA    | 23:CQ:53:LYS:HE3   | 1.61                     | 0.80              |
| 33:DA:355:C:H2'    | 33:DA:356:A:C8     | 2.17                     | 0.80              |
| 33:DA:1140:C:H2'   | 33:DA:1141:C:C6    | 2.16                     | 0.80              |
| 38:DF:12:PRO:HG3   | 38:DF:56:LYS:O     | 1.81                     | 0.80              |
| 11:AE:111:GLU:C    | 11:AE:113:VAL:H    | 1.85                     | 0.80              |
| 23:AQ:105:PHE:HA   | 23:AQ:108:LEU:HD12 | 1.62                     | 0.80              |
| 30:AX:15:ASN:O     | 30:AX:17:GLU:N     | 2.14                     | 0.80              |
| 33:BA:236:A:H2'    | 33:BA:237:G:H8     | 1.45                     | 0.80              |
| 8:CB:783:A:H8      | 8:CB:784:G:H4'     | 1.46                     | 0.80              |
| 8:CB:2415:G:H2'    | 8:CB:2416:C:C6     | 2.17                     | 0.80              |
| 8:CB:2521:C:H6     | 8:CB:2521:C:H5'    | 1.47                     | 0.80              |
| 16:CJ:44:TYR:OH    | 16:CJ:49:ASP:O     | 1.98                     | 0.80              |
| 33:DA:382:A:C2     | 33:DA:383:A:C5     | 2.70                     | 0.80              |
| 33:DA:1439:G:N1    | 33:DA:1463:U:O2    | 2.14                     | 0.80              |
| 48:DP:50:THR:HG22  | 48:DP:52:LEU:HD11  | 1.63                     | 0.80              |
| 8:AB:1205:A:C8     | 11:AE:164:LEU:HD13 | 2.17                     | 0.80              |
| 8:AB:2344:U:H4'    | 8:AB:2345:G:OP1    | 1.80                     | 0.80              |
| 8:AB:2528:U:O2'    | 8:AB:2529:G:H5''   | 1.81                     | 0.80              |
| 10:AD:11:MET:HG3   | 10:AD:12:THR:H     | 1.47                     | 0.80              |
| 14:AH:122:LEU:HD12 | 14:AH:122:LEU:H    | 1.47                     | 0.80              |
| 16:AJ:78:THR:HG23  | 16:AJ:84:ILE:HG21  | 1.63                     | 0.80              |
| 33:BA:603:U:H6     | 33:BA:603:U:H3'    | 1.47                     | 0.80              |
| 33:BA:866:C:N3     | 33:BA:867:G:H1'    | 1.97                     | 0.80              |
| 34:BB:27:LYS:HB3   | 34:BB:28:PRO:HD3   | 1.63                     | 0.80              |
| 43:BK:12:ARG:HG3   | 43:BK:12:ARG:NH1   | 1.91                     | 0.80              |
| 48:BP:4:ILE:HD12   | 48:BP:66:THR:O     | 1.81                     | 0.80              |
| 8:CB:374:A:H2'     | 8:CB:375:G:C8      | 2.17                     | 0.80              |
| 8:CB:465:G:H2'     | 8:CB:466:A:C8      | 2.17                     | 0.80              |
| 8:CB:831:G:C6      | 8:CB:832:U:C2      | 2.70                     | 0.80              |
| 8:CB:2742:G:O6     | 8:CB:2763:G:N2     | 2.15                     | 0.80              |
| 16:CJ:41:LYS:HD3   | 16:CJ:44:TYR:HB3   | 1.64                     | 0.80              |
| 18:CL:6:LEU:HG     | 18:CL:9:ALA:HB2    | 1.61                     | 0.80              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:CR:77:PHE:HB2   | 24:CR:89:HIS:CE1   | 2.16                     | 0.80              |
| 35:DC:11:LEU:CB    | 35:DC:17:TRP:HE1   | 1.95                     | 0.80              |
| 43:DK:16:SER:HB2   | 43:DK:78:ILE:HA    | 1.64                     | 0.80              |
| 44:DL:2:THR:HG22   | 44:DL:4:ASN:N      | 1.97                     | 0.80              |
| 3:A2:18:PHE:HB3    | 8:AB:126:A:P       | 2.22                     | 0.80              |
| 3:A2:21:ARG:HH11   | 3:A2:21:ARG:CG     | 1.94                     | 0.80              |
| 4:A3:34:LYS:HB2    | 4:A3:34:LYS:HZ2    | 1.46                     | 0.80              |
| 8:AB:418:C:H2'     | 8:AB:419:U:H6      | 1.45                     | 0.80              |
| 8:AB:535:G:H1'     | 23:AQ:52:ARG:NH1   | 1.96                     | 0.80              |
| 8:AB:828:U:O2      | 8:AB:829:A:N7      | 2.15                     | 0.80              |
| 8:AB:2678:C:O2'    | 8:AB:2679:A:H5'    | 1.82                     | 0.80              |
| 18:AL:40:SER:HA    | 18:AL:41:ARG:HH21  | 1.46                     | 0.80              |
| 18:AL:59:ARG:HB3   | 18:AL:59:ARG:HH11  | 1.45                     | 0.80              |
| 24:AR:94:THR:O     | 24:AR:95:ASP:HB3   | 1.80                     | 0.80              |
| 27:AU:12:VAL:HA    | 27:AU:68:ASN:ND2   | 1.96                     | 0.80              |
| 33:BA:258:G:H3'    | 55:BA:5057:HOH:O   | 1.82                     | 0.80              |
| 33:BA:1035:A:H2'   | 33:BA:1036:A:H8    | 1.47                     | 0.80              |
| 47:BO:84:LEU:HB3   | 47:BO:86:LEU:HD13  | 1.64                     | 0.80              |
| 8:CB:663:G:H5''    | 18:CL:27:LEU:HD13  | 1.64                     | 0.80              |
| 8:CB:862:G:H22     | 8:CB:916:G:H1'     | 1.47                     | 0.80              |
| 8:CB:950:G:H2'     | 8:CB:951:C:C6      | 2.17                     | 0.80              |
| 8:CB:1022:G:C5     | 8:CB:1140:C:N4     | 2.49                     | 0.80              |
| 8:CB:1053:C:N4     | 8:CB:1106:G:H1     | 1.79                     | 0.80              |
| 8:CB:1263:U:H2'    | 8:CB:1264:A:C8     | 2.16                     | 0.80              |
| 8:CB:1378:A:N7     | 8:CB:1380:G:C6     | 2.49                     | 0.80              |
| 8:CB:2028:U:H2'    | 8:CB:2029:G:C8     | 2.17                     | 0.80              |
| 8:CB:2822:G:OP2    | 20:CN:2:ARG:CB     | 2.22                     | 0.80              |
| 9:CC:205:GLY:O     | 9:CC:206:LYS:HE2   | 1.81                     | 0.80              |
| 10:CD:146:ILE:HG12 | 10:CD:155:VAL:HA   | 1.63                     | 0.80              |
| 11:CE:5:LEU:HD11   | 11:CE:118:LEU:HA   | 1.64                     | 0.80              |
| 13:CG:28:LYS:O     | 13:CG:29:ASN:HB2   | 1.82                     | 0.80              |
| 17:CK:110:GLU:C    | 17:CK:111:LYS:HG2  | 2.02                     | 0.80              |
| 33:DA:408:A:OP1    | 36:DD:111:ALA:HB3  | 1.81                     | 0.80              |
| 33:DA:1140:C:H2'   | 33:DA:1141:C:H6    | 1.47                     | 0.80              |
| 33:DA:1471:U:O2'   | 33:DA:1472:U:H5'   | 1.81                     | 0.80              |
| 35:DC:65:VAL:HG21  | 35:DC:100:ILE:HD12 | 1.64                     | 0.80              |
| 3:A2:16:HIS:CE1    | 8:AB:465:G:O2'     | 2.33                     | 0.79              |
| 8:AB:670:A:H3'     | 18:AL:47:ARG:HH11  | 1.48                     | 0.79              |
| 8:AB:1741:C:H2'    | 8:AB:1742:U:C6     | 2.16                     | 0.79              |
| 12:AF:33:ILE:HG22  | 12:AF:155:ILE:HG12 | 1.62                     | 0.79              |
| 17:AK:110:GLU:C    | 17:AK:111:LYS:HG2  | 2.03                     | 0.79              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:AS:6:LYS:HB3    | 25:AS:104:THR:HG22 | 1.61                     | 0.79              |
| 33:BA:321:A:H2'    | 33:BA:328:C:H5     | 1.45                     | 0.79              |
| 33:BA:824:G:H1'    | 40:BH:1:SER:HA     | 1.62                     | 0.79              |
| 39:BG:130:LYS:HG2  | 39:BG:131:GLY:N    | 1.95                     | 0.79              |
| 8:CB:418:C:H2'     | 8:CB:419:U:H6      | 1.46                     | 0.79              |
| 8:CB:1829:A:C5'    | 8:CB:1829:A:C8     | 2.64                     | 0.79              |
| 8:CB:2250:G:C6     | 19:CM:82:MET:HG3   | 2.16                     | 0.79              |
| 17:CK:78:ARG:HE    | 22:CP:72:VAL:CG2   | 1.94                     | 0.79              |
| 33:DA:18:C:C1'     | 33:DA:1079:G:H21   | 1.95                     | 0.79              |
| 33:DA:1425:U:H1'   | 33:DA:1476:A:C2    | 2.17                     | 0.79              |
| 35:DC:122:GLN:HA   | 35:DC:125:ARG:HB2  | 1.63                     | 0.79              |
| 39:DG:12:LEU:HD22  | 39:DG:13:PRO:HD2   | 1.63                     | 0.79              |
| 43:DK:19:VAL:HG23  | 43:DK:34:THR:HG23  | 1.63                     | 0.79              |
| 47:DO:2:LEU:HG     | 47:DO:3:SER:H      | 1.47                     | 0.79              |
| 8:AB:716:A:OP1     | 47:BO:88:ARG:HB3   | 1.82                     | 0.79              |
| 8:AB:1268:A:C2     | 8:AB:1269:A:H1'    | 2.17                     | 0.79              |
| 8:AB:2578:G:H1'    | 10:AD:145:SER:HB3  | 1.64                     | 0.79              |
| 8:AB:2678:C:C2'    | 8:AB:2679:A:H8     | 1.95                     | 0.79              |
| 11:AE:8:ALA:HB3    | 11:AE:120:VAL:HG21 | 1.64                     | 0.79              |
| 23:AQ:94:LEU:C     | 23:AQ:96:ASP:H     | 1.84                     | 0.79              |
| 33:BA:959:A:H62    | 51:BS:77:ARG:HG2   | 1.47                     | 0.79              |
| 34:BB:103:TRP:HZ3  | 34:BB:107:ARG:HD3  | 1.47                     | 0.79              |
| 35:BC:10:ARG:HH11  | 35:BC:10:ARG:HG3   | 1.43                     | 0.79              |
| 8:CB:850:U:H2'     | 8:CB:851:C:C5      | 2.18                     | 0.79              |
| 8:CB:1752:C:N4     | 8:CB:1756:G:N1     | 2.29                     | 0.79              |
| 14:CH:96:THR:HG23  | 14:CH:97:ARG:HG2   | 1.64                     | 0.79              |
| 15:CI:56:VAL:HG22  | 15:CI:57:VAL:H     | 1.47                     | 0.79              |
| 19:CM:5:LYS:HE3    | 19:CM:71:LYS:HE2   | 1.65                     | 0.79              |
| 21:CO:7:ARG:NH2    | 21:CO:8:ILE:HG12   | 1.96                     | 0.79              |
| 32:CZ:3:LYS:O      | 32:CZ:5:ILE:N      | 2.14                     | 0.79              |
| 33:DA:451:A:H61    | 33:DA:481:G:H5''   | 1.48                     | 0.79              |
| 33:DA:828:U:H3     | 33:DA:859:G:H1'    | 1.46                     | 0.79              |
| 33:DA:1021:A:H2'   | 33:DA:1022:A:C8    | 2.17                     | 0.79              |
| 8:AB:727:A:H2      | 9:AC:15:VAL:HG11   | 1.48                     | 0.79              |
| 8:AB:927:A:H2'     | 8:AB:928:A:H8      | 1.46                     | 0.79              |
| 8:AB:2285:C:H1'    | 8:AB:2288:A:C8     | 2.17                     | 0.79              |
| 10:AD:197:THR:HG22 | 10:AD:198:GLY:N    | 1.97                     | 0.79              |
| 11:AE:120:VAL:HG12 | 11:AE:121:VAL:N    | 1.97                     | 0.79              |
| 12:AF:33:ILE:HD11  | 12:AF:90:LEU:HB2   | 1.63                     | 0.79              |
| 14:AH:4:ILE:HG23   | 14:AH:16:GLY:HA3   | 1.64                     | 0.79              |
| 14:AH:26:ALA:HA    | 14:AH:30:LEU:HB3   | 1.63                     | 0.79              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 14:AH:104:THR:HB   | 14:AH:109:GLU:HG2 | 1.65                     | 0.79              |
| 15:AI:21:PRO:HB2   | 15:AI:22:PRO:HD3  | 1.61                     | 0.79              |
| 25:AS:24:ILE:CA    | 25:AS:28:LYS:HD2  | 2.12                     | 0.79              |
| 27:AU:3:LYS:HB2    | 27:AU:3:LYS:NZ    | 1.95                     | 0.79              |
| 33:BA:236:A:H2'    | 33:BA:237:G:C8    | 2.17                     | 0.79              |
| 33:BA:715:A:H3'    | 33:BA:715:A:H8    | 1.46                     | 0.79              |
| 36:BD:57:LYS:NZ    | 36:BD:58:GLN:HE21 | 1.80                     | 0.79              |
| 8:CB:1256:G:C5     | 8:CB:1257:C:H5    | 2.01                     | 0.79              |
| 8:CB:1661:G:C6     | 8:CB:1662:U:C5    | 2.70                     | 0.79              |
| 19:CM:18:ARG:HG2   | 19:CM:19:GLY:H    | 1.47                     | 0.79              |
| 27:CU:12:VAL:HA    | 27:CU:68:ASN:OD1  | 1.83                     | 0.79              |
| 33:DA:1259:C:N4    | 33:DA:1276:G:H1   | 1.80                     | 0.79              |
| 33:DA:1436:U:C2    | 33:DA:1437:A:C8   | 2.70                     | 0.79              |
| 34:DB:49:PHE:O     | 34:DB:53:LEU:HB2  | 1.80                     | 0.79              |
| 47:DO:87:ARG:HE    | 47:DO:87:ARG:HA   | 1.47                     | 0.79              |
| 50:DR:70:THR:HB    | 50:DR:72:ARG:NH2  | 1.98                     | 0.79              |
| 8:AB:133:U:H3      | 8:AB:146:A:H61    | 1.30                     | 0.79              |
| 8:AB:1786:A:C2     | 8:AB:1938:A:C4    | 2.71                     | 0.79              |
| 8:AB:2289:G:H5'    | 8:AB:2289:G:C8    | 2.16                     | 0.79              |
| 8:AB:2751:G:H5'    | 13:AG:1:SER:HB2   | 1.64                     | 0.79              |
| 9:AC:42:ARG:HG2    | 9:AC:43:ASN:N     | 1.98                     | 0.79              |
| 11:AE:113:VAL:HG13 | 11:AE:114:ARG:H   | 1.46                     | 0.79              |
| 20:AN:26:GLY:O     | 20:AN:29:VAL:HG23 | 1.83                     | 0.79              |
| 29:AW:44:PHE:HB3   | 29:AW:76:ARG:HG3  | 1.64                     | 0.79              |
| 33:BA:227:G:H2'    | 33:BA:228:A:C8    | 2.17                     | 0.79              |
| 33:BA:645:G:H5'    | 33:BA:645:G:C8    | 2.18                     | 0.79              |
| 33:BA:1165:U:H2'   | 33:BA:1166:G:H5'  | 1.63                     | 0.79              |
| 8:CB:2728:U:H2'    | 8:CB:2729:G:C8    | 2.16                     | 0.79              |
| 8:CB:2820:A:H5''   | 8:CB:2820:A:H8    | 1.48                     | 0.79              |
| 9:CC:58:LYS:HB2    | 9:CC:58:LYS:NZ    | 1.96                     | 0.79              |
| 15:CI:27:LEU:HD21  | 15:CI:34:ILE:HD12 | 1.63                     | 0.79              |
| 16:CJ:44:TYR:HE1   | 16:CJ:48:VAL:O    | 1.65                     | 0.79              |
| 19:CM:18:ARG:CG    | 19:CM:19:GLY:H    | 1.93                     | 0.79              |
| 33:DA:909:A:H2'    | 33:DA:910:C:O4'   | 1.82                     | 0.79              |
| 33:DA:977:A:H8     | 33:DA:1223:C:C4   | 2.00                     | 0.79              |
| 36:DD:48:SER:O     | 36:DD:52:VAL:HG23 | 1.82                     | 0.79              |
| 37:DE:158:LYS:HB3  | 40:DH:63:LYS:HD3  | 1.63                     | 0.79              |
| 50:DR:61:ALA:HB3   | 50:DR:67:LEU:HD12 | 1.63                     | 0.79              |
| 2:A1:35:LEU:HD21   | 2:A1:54:LYS:HB2   | 1.65                     | 0.79              |
| 4:A3:7:ARG:HD2     | 4:A3:10:ALA:HB3   | 1.63                     | 0.79              |
| 4:A3:24:LYS:HZ2    | 18:AL:62:PRO:C    | 1.86                     | 0.79              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:810:U:C5      | 18:AL:37:GLY:HA2   | 2.16                     | 0.79              |
| 8:AB:2638:G:N2     | 8:AB:2775:G:H2'    | 1.97                     | 0.79              |
| 8:AB:2640:G:C2'    | 8:AB:2641:G:H5''   | 2.13                     | 0.79              |
| 13:AG:51:PHE:HD2   | 13:AG:52:GLY:N     | 1.80                     | 0.79              |
| 16:AJ:109:LEU:HB2  | 16:AJ:110:PRO:HD2  | 1.62                     | 0.79              |
| 25:AS:24:ILE:HG22  | 25:AS:28:LYS:HE2   | 1.65                     | 0.79              |
| 26:AT:8:LEU:HA     | 30:AX:19:LEU:HD21  | 1.64                     | 0.79              |
| 33:BA:1437:A:H5''  | 52:BT:28:ARG:HH12  | 1.48                     | 0.79              |
| 34:BB:15:PHE:HD1   | 34:BB:16:GLY:N     | 1.80                     | 0.79              |
| 34:BB:163:ILE:HD12 | 34:BB:185:ILE:HD11 | 1.62                     | 0.79              |
| 39:BG:111:GLY:HA2  | 39:BG:118:ARG:HH11 | 1.47                     | 0.79              |
| 7:CA:104:A:C2      | 7:CA:105:G:H1'     | 2.18                     | 0.79              |
| 8:CB:675:A:O2'     | 8:CB:676:A:H5'     | 1.82                     | 0.79              |
| 8:CB:2230:G:H2'    | 8:CB:2231:U:H6     | 1.48                     | 0.79              |
| 8:CB:2341:G:H2'    | 8:CB:2342:C:C6     | 2.17                     | 0.79              |
| 16:CJ:109:LEU:HB2  | 16:CJ:110:PRO:HD2  | 1.63                     | 0.79              |
| 17:CK:10:VAL:HG21  | 17:CK:16:ALA:HA    | 1.65                     | 0.79              |
| 33:DA:1258:G:H1    | 33:DA:1278:G:H22   | 1.30                     | 0.79              |
| 33:DA:1347:G:H1'   | 33:DA:1373:G:N1    | 1.96                     | 0.79              |
| 43:DK:96:ILE:O     | 43:DK:99:LEU:N     | 2.13                     | 0.79              |
| 5:A4:5:ALA:HB1     | 8:AB:2466:C:P      | 2.22                     | 0.79              |
| 8:AB:90:U:H3       | 8:AB:91:A:N6       | 1.81                     | 0.79              |
| 8:AB:915:C:C6      | 8:AB:915:C:H5''    | 2.17                     | 0.79              |
| 8:AB:1142:A:H5''   | 8:AB:1142:A:C8     | 2.18                     | 0.79              |
| 8:AB:1824:G:N2     | 9:AC:249:VAL:HG12  | 1.96                     | 0.79              |
| 9:AC:204:LEU:HD13  | 9:AC:210:ALA:HB1   | 1.64                     | 0.79              |
| 10:AD:179:ARG:HG3  | 10:AD:179:ARG:NH1  | 1.95                     | 0.79              |
| 11:AE:173:THR:HA   | 11:AE:200:LEU:HB3  | 1.64                     | 0.79              |
| 16:AJ:132:HIS:O    | 16:AJ:132:HIS:HD2  | 1.66                     | 0.79              |
| 20:AN:12:ARG:CD    | 20:AN:16:HIS:HD2   | 1.96                     | 0.79              |
| 21:AO:57:ALA:CB    | 21:AO:62:LEU:HD22  | 2.12                     | 0.79              |
| 22:AP:93:LYS:HB3   | 22:AP:96:LEU:HA    | 1.64                     | 0.79              |
| 27:AU:64:ILE:HD13  | 27:AU:65:GLN:H     | 1.47                     | 0.79              |
| 33:BA:237:G:H2'    | 33:BA:238:A:C8     | 2.17                     | 0.79              |
| 33:BA:570:G:H1     | 33:BA:865:A:H61    | 1.31                     | 0.79              |
| 33:BA:878:A:H5''   | 40:BH:80:PRO:HG2   | 1.65                     | 0.79              |
| 33:BA:1491:G:H2'   | 33:BA:1492:A:C8    | 2.18                     | 0.79              |
| 37:BE:55:VAL:N     | 37:BE:56:PRO:HD2   | 1.98                     | 0.79              |
| 7:CA:29:A:C2       | 7:CA:30:C:C5       | 2.71                     | 0.79              |
| 8:CB:111:A:O5'     | 8:CB:111:A:H8      | 1.66                     | 0.79              |
| 8:CB:194:G:N3      | 8:CB:194:G:H2'     | 1.95                     | 0.79              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1941:C:H5'   | 8:CB:1941:C:H6     | 1.48                     | 0.79              |
| 8:CB:2208:C:H2'   | 8:CB:2209:G:H8     | 1.48                     | 0.79              |
| 20:CN:2:ARG:NE    | 20:CN:3:HIS:O      | 2.16                     | 0.79              |
| 27:CU:3:LYS:HB2   | 27:CU:3:LYS:NZ     | 1.98                     | 0.79              |
| 33:DA:1279:G:H5'' | 42:DJ:9:ARG:NH2    | 1.98                     | 0.79              |
| 35:DC:11:LEU:HD22 | 35:DC:17:TRP:CD1   | 2.17                     | 0.79              |
| 8:AB:1622:G:C2    | 8:AB:1623:G:C8     | 2.70                     | 0.79              |
| 8:AB:1752:C:N4    | 8:AB:1756:G:N1     | 2.30                     | 0.79              |
| 15:AI:14:ALA:HB3  | 15:AI:50:LYS:HA    | 1.63                     | 0.79              |
| 22:AP:24:THR:HG21 | 22:AP:111:GLU:HG2  | 1.63                     | 0.79              |
| 33:BA:728:A:H2'   | 33:BA:729:A:H8     | 1.47                     | 0.79              |
| 42:BJ:52:LEU:H    | 42:BJ:52:LEU:HD12  | 1.48                     | 0.79              |
| 1:C0:29:VAL:H     | 1:C0:36:LYS:HD2    | 1.47                     | 0.79              |
| 8:CB:76:C:N3      | 8:CB:111:A:C2      | 2.50                     | 0.79              |
| 8:CB:283:G:H1     | 8:CB:357:C:N4      | 1.80                     | 0.79              |
| 8:CB:346:A:H5'    | 8:CB:346:A:N3      | 1.97                     | 0.79              |
| 8:CB:637:A:P      | 18:CL:112:LEU:HB2  | 2.22                     | 0.79              |
| 8:CB:743:A:OP1    | 10:CD:134:HIS:NE2  | 2.16                     | 0.79              |
| 8:CB:1066:U:H3'   | 8:CB:1066:U:C6     | 2.17                     | 0.79              |
| 8:CB:1259:G:H2'   | 8:CB:1260:A:C8     | 2.18                     | 0.79              |
| 8:CB:2692:G:H1'   | 8:CB:2847:U:O2'    | 1.82                     | 0.79              |
| 10:CD:33:ARG:HD3  | 10:CD:89:GLU:OE2   | 1.82                     | 0.79              |
| 10:CD:36:GLN:C    | 10:CD:36:GLN:HE21  | 1.86                     | 0.79              |
| 19:CM:6:ARG:HD2   | 19:CM:71:LYS:NZ    | 1.97                     | 0.79              |
| 23:CQ:64:ILE:HD11 | 23:CQ:95:ALA:HB2   | 1.64                     | 0.79              |
| 31:CY:35:VAL:HG12 | 31:CY:36:GLU:H     | 1.47                     | 0.79              |
| 33:DA:479:U:H2'   | 33:DA:480:U:H5'    | 1.64                     | 0.79              |
| 33:DA:762:U:H2'   | 33:DA:763:G:C8     | 2.16                     | 0.79              |
| 33:DA:1216:A:H5'' | 46:DN:4:SER:CB     | 2.12                     | 0.79              |
| 36:DD:56:GLU:HB3  | 36:DD:198:LEU:HD21 | 1.65                     | 0.79              |
| 47:DO:17:ASP:HB2  | 47:DO:20:ASP:HB3   | 1.65                     | 0.79              |
| 8:AB:1210:G:H5''  | 8:AB:1211:C:H3'    | 1.65                     | 0.79              |
| 8:AB:1613:G:H2'   | 8:AB:1617:C:N4     | 1.97                     | 0.79              |
| 8:AB:1814:G:H5'   | 8:AB:1814:G:H8     | 1.48                     | 0.79              |
| 8:AB:2267:A:H3'   | 8:AB:2268:A:H5''   | 1.63                     | 0.79              |
| 8:AB:2786:U:O2'   | 10:AD:65:ALA:HB3   | 1.82                     | 0.79              |
| 8:AB:2787:C:H5'   | 10:AD:65:ALA:CB    | 2.12                     | 0.79              |
| 24:AR:67:GLY:O    | 24:AR:68:ARG:HB2   | 1.81                     | 0.79              |
| 30:AX:14:LEU:HB2  | 30:AX:53:VAL:HG13  | 1.63                     | 0.79              |
| 33:BA:479:U:H3'   | 33:BA:479:U:H6     | 1.48                     | 0.79              |
| 33:BA:1061:G:C8   | 33:BA:1062:U:C5    | 2.70                     | 0.79              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1418:A:C6    | 33:BA:1483:A:C2    | 2.71                     | 0.79              |
| 5:C4:17:VAL:HG21   | 8:CB:1032:A:H4'    | 1.65                     | 0.79              |
| 8:CB:850:U:H2'     | 8:CB:851:C:C6      | 2.18                     | 0.79              |
| 8:CB:1764:C:N3     | 8:CB:1765:U:H5     | 1.80                     | 0.79              |
| 8:CB:2144:G:H21    | 8:CB:2148:G:H21    | 1.27                     | 0.79              |
| 8:CB:2285:C:H1'    | 8:CB:2288:A:C8     | 2.18                     | 0.79              |
| 8:CB:2484:G:H1'    | 19:CM:119:LEU:HD12 | 1.63                     | 0.79              |
| 13:CG:96:ALA:HB3   | 13:CG:103:ASN:HB2  | 1.64                     | 0.79              |
| 14:CH:1:MET:HG3    | 14:CH:21:VAL:HG22  | 1.64                     | 0.79              |
| 18:CL:34:GLY:H     | 24:CR:85:LYS:HE2   | 1.46                     | 0.79              |
| 24:CR:92:TRP:CZ3   | 24:CR:94:THR:HG23  | 2.17                     | 0.79              |
| 33:DA:463:U:H2'    | 33:DA:464:U:O4'    | 1.82                     | 0.79              |
| 33:DA:680:C:O2'    | 33:DA:681:A:H5'    | 1.83                     | 0.79              |
| 33:DA:878:A:C8     | 33:DA:878:A:H3'    | 2.18                     | 0.79              |
| 8:AB:868:U:H3      | 8:AB:909:A:H61     | 1.31                     | 0.79              |
| 20:AN:68:ALA:C     | 20:AN:70:THR:H     | 1.86                     | 0.79              |
| 27:AU:26:ASN:HB3   | 27:AU:34:ILE:CD1   | 2.12                     | 0.79              |
| 33:BA:775:G:N2     | 33:BA:805:C:N4     | 2.31                     | 0.79              |
| 33:BA:959:A:N6     | 51:BS:77:ARG:HG2   | 1.97                     | 0.79              |
| 33:BA:1474:U:O2    | 33:BA:1475:G:C8    | 2.36                     | 0.79              |
| 3:C2:21:ARG:HH11   | 3:C2:21:ARG:CG     | 1.96                     | 0.79              |
| 8:CB:38:A:H1'      | 11:CE:43:THR:O     | 1.82                     | 0.79              |
| 8:CB:679:C:H2'     | 8:CB:680:C:H6      | 1.48                     | 0.79              |
| 8:CB:851:C:H2'     | 8:CB:852:U:H6      | 1.45                     | 0.79              |
| 8:CB:1838:C:N3     | 8:CB:1899:A:C2     | 2.51                     | 0.79              |
| 9:CC:264:LYS:HZ2   | 9:CC:264:LYS:N     | 1.80                     | 0.79              |
| 19:CM:40:ARG:HA    | 19:CM:92:TRP:HE1   | 1.46                     | 0.79              |
| 33:DA:395:C:H5''   | 33:DA:396:C:OP2    | 1.81                     | 0.79              |
| 34:DB:163:ILE:HG23 | 34:DB:164:ASP:H    | 1.47                     | 0.79              |
| 37:DE:80:LEU:HB2   | 37:DE:122:VAL:HG11 | 1.63                     | 0.79              |
| 44:DL:66:ILE:HD11  | 44:DL:73:LEU:HD12  | 1.64                     | 0.79              |
| 4:A3:11:LYS:HD3    | 18:AL:63:LYS:CB    | 2.13                     | 0.79              |
| 4:A3:30:HIS:ND1    | 8:AB:2419:U:O4     | 2.16                     | 0.79              |
| 5:A4:15:LYS:HZ2    | 5:A4:24:ARG:HG2    | 1.47                     | 0.79              |
| 9:AC:169:ALA:O     | 9:AC:170:TYR:HB2   | 1.82                     | 0.79              |
| 20:AN:62:ASN:HB3   | 20:AN:80:PHE:CZ    | 2.17                     | 0.79              |
| 29:AW:55:ASP:CG    | 29:AW:56:HIS:H     | 1.86                     | 0.79              |
| 30:AX:22:LEU:HA    | 30:AX:47:ARG:NH1   | 1.98                     | 0.79              |
| 33:BA:506:G:H2'    | 33:BA:507:C:H6     | 1.47                     | 0.79              |
| 33:BA:1174:G:H2'   | 33:BA:1175:G:C8    | 2.17                     | 0.79              |
| 33:BA:1466:C:O2    | 33:BA:1466:C:H2'   | 1.82                     | 0.79              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BD:94:GLU:CG   | 36:BD:103:ARG:HH22 | 1.95                     | 0.79              |
| 45:BM:73:SER:HA   | 45:BM:76:ILE:HB    | 1.64                     | 0.79              |
| 8:CB:320:A:H2'    | 11:CE:131:THR:OG1  | 1.83                     | 0.79              |
| 8:CB:450:G:H2'    | 8:CB:451:U:H5''    | 1.64                     | 0.79              |
| 8:CB:1803:A:O2'   | 9:CC:254:LYS:HE3   | 1.83                     | 0.79              |
| 8:CB:2341:G:H2'   | 8:CB:2342:C:H6     | 1.47                     | 0.79              |
| 9:CC:51:ARG:HH22  | 9:CC:54:GLY:CA     | 1.96                     | 0.79              |
| 10:CD:208:LYS:HE3 | 10:CD:209:ALA:N    | 1.98                     | 0.79              |
| 18:CL:111:ILE:H   | 18:CL:126:ARG:HH22 | 1.30                     | 0.79              |
| 19:CM:16:ARG:O    | 19:CM:17:ASN:HB2   | 1.82                     | 0.79              |
| 20:CN:26:GLY:O    | 20:CN:29:VAL:HG23  | 1.83                     | 0.79              |
| 21:CO:74:VAL:HG23 | 21:CO:106:LEU:HD12 | 1.63                     | 0.79              |
| 33:DA:243:A:H5''  | 33:DA:243:A:C8     | 2.18                     | 0.79              |
| 33:DA:430:A:O2'   | 33:DA:431:A:H5'    | 1.82                     | 0.79              |
| 33:DA:1218:C:H2'  | 33:DA:1219:A:C8    | 2.15                     | 0.79              |
| 34:DB:116:LEU:HB3 | 34:DB:140:LEU:HD21 | 1.65                     | 0.79              |
| 8:AB:850:U:H2'    | 8:AB:851:C:C6      | 2.18                     | 0.78              |
| 8:AB:1301:A:O2'   | 8:AB:1302:A:H3'    | 1.82                     | 0.78              |
| 16:AJ:40:HIS:H    | 16:AJ:40:HIS:CD2   | 1.99                     | 0.78              |
| 18:AL:117:THR:CG2 | 18:AL:118:THR:H    | 1.95                     | 0.78              |
| 25:AS:88:ARG:HD2  | 25:AS:94:ASP:OD1   | 1.83                     | 0.78              |
| 33:BA:803:G:H2'   | 33:BA:804:U:H6     | 1.45                     | 0.78              |
| 53:BU:20:ARG:HA   | 53:BU:24:LYS:HG3   | 1.65                     | 0.78              |
| 8:CB:561:G:O5'    | 8:CB:561:G:H8      | 1.66                     | 0.78              |
| 8:CB:1142:A:H5''  | 8:CB:1142:A:C8     | 2.18                     | 0.78              |
| 8:CB:1657:U:OP1   | 10:CD:141:ARG:HB2  | 1.83                     | 0.78              |
| 8:CB:2267:A:H3'   | 8:CB:2268:A:H5''   | 1.63                     | 0.78              |
| 13:CG:34:ARG:HG2  | 13:CG:34:ARG:O     | 1.82                     | 0.78              |
| 28:CV:63:ILE:H    | 28:CV:70:ILE:HD11  | 1.46                     | 0.78              |
| 33:DA:5:U:H1'     | 33:DA:6:G:N2       | 1.98                     | 0.78              |
| 33:DA:799:G:H5''  | 33:DA:799:G:H8     | 1.48                     | 0.78              |
| 33:DA:1160:G:H22  | 33:DA:1176:A:H2    | 1.31                     | 0.78              |
| 33:DA:1186:G:H8   | 33:DA:1186:G:H5'   | 1.48                     | 0.78              |
| 33:DA:1186:G:O2'  | 41:DI:112:ARG:HG2  | 1.83                     | 0.78              |
| 33:DA:1239:A:H4'  | 33:DA:1241:G:C8    | 2.17                     | 0.78              |
| 33:DA:1251:A:O2'  | 33:DA:1370:G:H5'   | 1.83                     | 0.78              |
| 33:DA:1317:C:H41  | 46:DN:58:ARG:HH21  | 1.28                     | 0.78              |
| 33:DA:1408:A:C2   | 33:DA:1494:G:N1    | 2.51                     | 0.78              |
| 34:DB:14:HIS:CE1  | 34:DB:42:LEU:HD21  | 2.17                     | 0.78              |
| 37:DE:24:VAL:HG23 | 37:DE:25:LYS:N     | 1.98                     | 0.78              |
| 37:DE:84:VAL:HG13 | 37:DE:95:MET:HB2   | 1.64                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:DH:91:LEU:HD23 | 40:DH:92:PRO:HD2   | 1.64                     | 0.78              |
| 45:DM:84:CYS:HB2  | 51:DS:72:GLU:HB3   | 1.65                     | 0.78              |
| 7:AA:27:C:H6      | 7:AA:27:C:H5''     | 1.48                     | 0.78              |
| 8:AB:263:G:N2     | 8:AB:264:C:H1'     | 1.99                     | 0.78              |
| 8:AB:777:G:H5''   | 8:AB:777:G:H8      | 1.48                     | 0.78              |
| 8:AB:1417:C:H2'   | 8:AB:1418:G:H5'    | 1.65                     | 0.78              |
| 9:AC:89:ASN:OD1   | 9:AC:199:HIS:HE1   | 1.65                     | 0.78              |
| 13:AG:85:LYS:HG2  | 13:AG:131:VAL:HB   | 1.64                     | 0.78              |
| 17:AK:31:ARG:HB3  | 17:AK:32:TYR:CD1   | 2.19                     | 0.78              |
| 17:AK:103:VAL:O   | 17:AK:122:VAL:HB   | 1.83                     | 0.78              |
| 29:AW:44:PHE:N    | 29:AW:76:ARG:HB2   | 1.99                     | 0.78              |
| 33:BA:18:C:H1'    | 33:BA:1079:G:N2    | 1.98                     | 0.78              |
| 42:BJ:70:HIS:H    | 42:BJ:70:HIS:CD2   | 1.98                     | 0.78              |
| 4:C3:12:ARG:CG    | 4:C3:23:HIS:HB2    | 2.13                     | 0.78              |
| 8:CB:687:C:C4     | 8:CB:688:U:C2      | 2.72                     | 0.78              |
| 8:CB:1682:G:H5'   | 8:CB:1682:G:H8     | 1.49                     | 0.78              |
| 11:CE:176:ASP:HB3 | 11:CE:179:SER:OG   | 1.83                     | 0.78              |
| 18:CL:101:ILE:O   | 18:CL:103:ILE:HD13 | 1.83                     | 0.78              |
| 25:CS:83:LYS:O    | 25:CS:84:ARG:HD3   | 1.82                     | 0.78              |
| 11:AE:37:ALA:HA   | 11:AE:40:ARG:HH21  | 1.47                     | 0.78              |
| 24:AR:43:ASN:CB   | 24:AR:51:VAL:HB    | 2.12                     | 0.78              |
| 26:AT:80:TRP:CD1  | 26:AT:81:LYS:N     | 2.50                     | 0.78              |
| 27:AU:78:LYS:HD2  | 27:AU:98:ASN:HB2   | 1.65                     | 0.78              |
| 33:BA:404:G:N2    | 33:BA:405:U:C2     | 2.52                     | 0.78              |
| 35:BC:59:PRO:HG2  | 35:BC:62:SER:OG    | 1.83                     | 0.78              |
| 8:CB:65:U:OP1     | 26:CT:76:ARG:CB    | 2.32                     | 0.78              |
| 8:CB:446:G:OP2    | 23:CQ:2:ARG:CZ     | 2.32                     | 0.78              |
| 8:CB:1786:A:C2    | 8:CB:1938:A:C4     | 2.72                     | 0.78              |
| 8:CB:1837:C:C2    | 8:CB:1899:A:N6     | 2.52                     | 0.78              |
| 18:CL:14:LYS:HZ3  | 18:CL:15:ALA:H     | 1.28                     | 0.78              |
| 29:CW:55:ASP:CG   | 29:CW:56:HIS:H     | 1.86                     | 0.78              |
| 32:CZ:34:LEU:HB3  | 32:CZ:35:ASP:OD1   | 1.82                     | 0.78              |
| 33:DA:585:G:H21   | 33:DA:879:C:C4'    | 1.95                     | 0.78              |
| 33:DA:975:A:H4'   | 33:DA:976:G:C5'    | 2.14                     | 0.78              |
| 33:DA:1279:G:H5'' | 42:DJ:9:ARG:HH21   | 1.48                     | 0.78              |
| 38:DF:92:THR:HG22 | 38:DF:93:LYS:N     | 1.97                     | 0.78              |
| 7:AA:44:G:H21     | 7:AA:46:A:N6       | 1.81                     | 0.78              |
| 8:AB:950:G:H2'    | 8:AB:951:C:C6      | 2.17                     | 0.78              |
| 8:AB:1123:C:H5'   | 8:AB:1123:C:H6     | 1.48                     | 0.78              |
| 8:AB:2231:U:H2'   | 8:AB:2232:C:C6     | 2.16                     | 0.78              |
| 9:AC:24:HIS:HB3   | 9:AC:27:LYS:CE     | 2.12                     | 0.78              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AE:46:GLN:CD    | 11:AE:46:GLN:H     | 1.85                     | 0.78              |
| 27:AU:23:LYS:O     | 27:AU:25:LYS:HG3   | 1.82                     | 0.78              |
| 33:BA:582:C:C5     | 33:BA:583:A:N7     | 2.50                     | 0.78              |
| 33:BA:1011:C:H42   | 33:BA:1018:G:H1    | 1.31                     | 0.78              |
| 37:BE:21:SER:HB2   | 37:BE:29:ILE:O     | 1.83                     | 0.78              |
| 48:BP:40:ASN:OD1   | 48:BP:42:ILE:HG12  | 1.84                     | 0.78              |
| 8:CB:556:A:H2'     | 8:CB:556:A:N3      | 1.97                     | 0.78              |
| 8:CB:1003:G:H5''   | 8:CB:1003:G:H8     | 1.49                     | 0.78              |
| 8:CB:1099:G:H5'    | 8:CB:1099:G:C8     | 2.19                     | 0.78              |
| 8:CB:1571:A:C2     | 8:CB:1572:A:C5     | 2.72                     | 0.78              |
| 8:CB:1616:A:H5'    | 8:CB:1616:A:C8     | 2.17                     | 0.78              |
| 8:CB:2029:G:O2'    | 8:CB:2030:A:H5'    | 1.82                     | 0.78              |
| 8:CB:2841:C:H2'    | 8:CB:2842:G:C8     | 2.19                     | 0.78              |
| 9:CC:140:VAL:O     | 9:CC:141:HIS:HB2   | 1.82                     | 0.78              |
| 9:CC:257:ARG:HG3   | 9:CC:257:ARG:HH11  | 1.48                     | 0.78              |
| 13:CG:102:ILE:HD11 | 13:CG:130:ILE:HD12 | 1.64                     | 0.78              |
| 16:CJ:114:LEU:O    | 16:CJ:118:MET:HB2  | 1.83                     | 0.78              |
| 20:CN:56:LYS:HD3   | 20:CN:57:THR:N     | 1.96                     | 0.78              |
| 32:CZ:8:LYS:O      | 32:CZ:9:TYR:HB2    | 1.83                     | 0.78              |
| 33:DA:1060:U:H4'   | 42:DJ:54:SER:CB    | 2.14                     | 0.78              |
| 33:DA:1288:A:H2'   | 33:DA:1289:A:O4'   | 1.84                     | 0.78              |
| 36:DD:187:ARG:NE   | 36:DD:191:SER:HB3  | 1.98                     | 0.78              |
| 8:AB:19:A:H2'      | 8:AB:20:C:H6       | 1.48                     | 0.78              |
| 8:AB:1677:A:H5''   | 8:AB:1677:A:H8     | 1.44                     | 0.78              |
| 8:AB:2025:C:H5''   | 8:AB:2026:U:OP2    | 1.83                     | 0.78              |
| 8:AB:2352:A:H8     | 8:AB:2352:A:H5'    | 1.47                     | 0.78              |
| 13:AG:14:VAL:HB    | 13:AG:25:ILE:HD11  | 1.63                     | 0.78              |
| 19:AM:8:LYS:HE2    | 19:AM:8:LYS:H      | 1.46                     | 0.78              |
| 33:BA:216:U:H2'    | 33:BA:217:C:C6     | 2.18                     | 0.78              |
| 33:BA:1436:U:H2'   | 33:BA:1437:A:C8    | 2.18                     | 0.78              |
| 33:BA:1512:U:C2'   | 33:BA:1513:A:H5''  | 2.13                     | 0.78              |
| 1:C0:27:LEU:HG     | 8:CB:2886:A:N6     | 1.99                     | 0.78              |
| 7:CA:34:A:H1'      | 7:CA:36:C:H41      | 1.47                     | 0.78              |
| 8:CB:103:A:N7      | 8:CB:104:A:N3      | 2.31                     | 0.78              |
| 8:CB:463:G:N2      | 8:CB:467:G:C5      | 2.51                     | 0.78              |
| 8:CB:780:G:H1      | 9:CC:228:ASP:CG    | 1.86                     | 0.78              |
| 8:CB:1028:A:C2     | 8:CB:1029:A:C5     | 2.72                     | 0.78              |
| 8:CB:2691:C:O2     | 8:CB:2872:A:N6     | 2.14                     | 0.78              |
| 16:CJ:24:THR:O     | 16:CJ:25:LEU:HD22  | 1.83                     | 0.78              |
| 23:CQ:105:PHE:HA   | 23:CQ:108:LEU:HD12 | 1.64                     | 0.78              |
| 24:CR:4:VAL:HB     | 24:CR:41:ILE:HG12  | 1.64                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:CW:19:ARG:HA   | 29:CW:33:GLY:HA2   | 1.66                     | 0.78              |
| 33:DA:602:A:C8    | 33:DA:602:A:H3'    | 2.19                     | 0.78              |
| 33:DA:768:A:H2'   | 33:DA:769:G:H5'    | 1.63                     | 0.78              |
| 33:DA:1361:G:C5   | 33:DA:1362:A:H8    | 2.01                     | 0.78              |
| 33:DA:1415:G:C4   | 33:DA:1416:G:C8    | 2.71                     | 0.78              |
| 35:DC:10:ARG:CG   | 35:DC:10:ARG:HH11  | 1.96                     | 0.78              |
| 46:DN:63:CYS:HB3  | 46:DN:68:ARG:H     | 1.48                     | 0.78              |
| 50:DR:26:ALA:HA   | 50:DR:29:LYS:CE    | 2.14                     | 0.78              |
| 8:AB:384:A:H8     | 8:AB:384:A:O5'     | 1.67                     | 0.78              |
| 8:AB:1028:A:H8    | 8:AB:1028:A:C5'    | 1.95                     | 0.78              |
| 8:AB:2784:U:H2'   | 8:AB:2785:C:H6     | 1.48                     | 0.78              |
| 19:AM:18:ARG:CG   | 19:AM:19:GLY:H     | 1.95                     | 0.78              |
| 27:AU:78:LYS:HG3  | 27:AU:96:LYS:HE2   | 1.65                     | 0.78              |
| 29:AW:23:LYS:CE   | 29:AW:24:ARG:HB3   | 2.13                     | 0.78              |
| 33:BA:785:G:H5''  | 33:BA:785:G:C8     | 2.19                     | 0.78              |
| 33:BA:947:G:H1'   | 33:BA:1333:A:C2    | 2.18                     | 0.78              |
| 33:BA:999:C:H42   | 33:BA:1042:A:H61   | 1.30                     | 0.78              |
| 33:BA:1511:G:C2   | 33:BA:1525:G:N2    | 2.52                     | 0.78              |
| 2:C1:46:VAL:HG13  | 2:C1:47:ILE:HG13   | 1.65                     | 0.78              |
| 5:C4:15:LYS:HG2   | 5:C4:28:SER:H      | 1.46                     | 0.78              |
| 8:CB:688:U:H6     | 8:CB:688:U:H3'     | 1.47                     | 0.78              |
| 8:CB:1653:G:O6    | 20:CN:10:LEU:HG    | 1.83                     | 0.78              |
| 8:CB:2637:U:H5''  | 8:CB:2638:G:OP2    | 1.83                     | 0.78              |
| 9:CC:20:ASN:CB    | 9:CC:202:ARG:HH11  | 1.95                     | 0.78              |
| 33:DA:1446:A:N6   | 33:DA:1447:A:C6    | 2.51                     | 0.78              |
| 8:AB:783:A:H8     | 8:AB:784:G:H4'     | 1.48                     | 0.78              |
| 8:AB:1178:C:H2'   | 8:AB:1179:G:C8     | 2.19                     | 0.78              |
| 8:AB:1635:A:H8    | 8:AB:1635:A:H5'    | 1.45                     | 0.78              |
| 8:AB:1764:C:N3    | 8:AB:1765:U:H5     | 1.81                     | 0.78              |
| 11:AE:43:THR:HG23 | 11:AE:44:ARG:HH21  | 1.48                     | 0.78              |
| 11:AE:48:THR:HG23 | 11:AE:86:ALA:HB3   | 1.66                     | 0.78              |
| 18:AL:54:GLN:HB3  | 18:AL:56:PRO:HD2   | 1.64                     | 0.78              |
| 24:AR:24:LYS:NZ   | 24:AR:66:HIS:HE1   | 1.81                     | 0.78              |
| 26:AT:62:VAL:HG23 | 26:AT:63:VAL:N     | 1.99                     | 0.78              |
| 33:BA:40:C:H2'    | 33:BA:41:G:C8      | 2.19                     | 0.78              |
| 33:BA:999:C:N4    | 33:BA:1042:A:H61   | 1.82                     | 0.78              |
| 33:BA:1523:G:P    | 43:BK:124:LYS:HZ3  | 2.07                     | 0.78              |
| 35:BC:108:PRO:HB3 | 35:BC:114:LEU:HD12 | 1.66                     | 0.78              |
| 44:BL:20:VAL:HA   | 44:BL:94:TYR:OH    | 1.83                     | 0.78              |
| 7:CA:53:A:H8      | 7:CA:53:A:O5'      | 1.65                     | 0.78              |
| 8:CB:264:C:C2'    | 8:CB:265:A:H5''    | 2.14                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2143:C:H6    | 8:CB:2143:C:O5'    | 1.67                     | 0.78              |
| 8:CB:2331:G:H4'   | 29:CW:69:GLU:HG2   | 1.65                     | 0.78              |
| 9:CC:63:ILE:O     | 9:CC:64:VAL:HG13   | 1.84                     | 0.78              |
| 10:CD:10:GLY:HA2  | 10:CD:24:VAL:HA    | 1.63                     | 0.78              |
| 10:CD:151:THR:O   | 10:CD:153:GLY:N    | 2.17                     | 0.78              |
| 21:CO:100:HIS:O   | 21:CO:104:GLN:HB3  | 1.83                     | 0.78              |
| 4:A3:31:ILE:HG21  | 8:AB:2392:A:OP1    | 1.82                     | 0.78              |
| 8:AB:463:G:N2     | 8:AB:467:G:C5      | 2.51                     | 0.78              |
| 8:AB:1361:G:C4    | 8:AB:1362:C:C5     | 2.71                     | 0.78              |
| 11:AE:25:GLU:HA   | 11:AE:28:VAL:CG1   | 2.14                     | 0.78              |
| 16:AJ:9:GLU:O     | 16:AJ:9:GLU:HG2    | 1.82                     | 0.78              |
| 18:AL:94:THR:O    | 18:AL:100:ILE:HG13 | 1.84                     | 0.78              |
| 22:AP:31:VAL:HG22 | 22:AP:81:ASP:CB    | 2.14                     | 0.78              |
| 33:BA:429:U:H1'   | 33:BA:430:A:H5''   | 1.66                     | 0.78              |
| 33:BA:1185:G:H5'  | 33:BA:1185:G:H8    | 1.48                     | 0.78              |
| 48:BP:25:ARG:HD3  | 48:BP:25:ARG:H     | 1.49                     | 0.78              |
| 4:C3:7:ARG:HD2    | 4:C3:10:ALA:HB3    | 1.64                     | 0.78              |
| 5:C4:16:ILE:HG12  | 5:C4:17:VAL:HG12   | 1.66                     | 0.78              |
| 8:CB:970:U:H2'    | 8:CB:971:G:H8      | 1.49                     | 0.78              |
| 8:CB:2073:C:O2    | 8:CB:2437:G:C2     | 2.37                     | 0.78              |
| 20:CN:25:ALA:HB2  | 20:CN:44:LEU:CD1   | 2.14                     | 0.78              |
| 20:CN:123:GLU:HG2 | 20:CN:124:ALA:H    | 1.48                     | 0.78              |
| 22:CP:2:ASN:N     | 22:CP:2:ASN:HD22   | 1.82                     | 0.78              |
| 24:CR:79:ARG:HH11 | 24:CR:81:LYS:CE    | 1.95                     | 0.78              |
| 33:DA:236:A:H2'   | 33:DA:237:G:C8     | 2.19                     | 0.78              |
| 33:DA:434:U:C2'   | 33:DA:435:A:H8     | 1.94                     | 0.78              |
| 33:DA:610:U:C5    | 33:DA:611:C:C4     | 2.72                     | 0.78              |
| 33:DA:802:A:C2'   | 33:DA:803:G:H5'    | 2.12                     | 0.78              |
| 37:DE:19:ARG:HD2  | 37:DE:28:ARG:HH22  | 1.49                     | 0.78              |
| 45:DM:73:SER:HB3  | 45:DM:77:LYS:HE2   | 1.64                     | 0.78              |
| 49:DQ:10:ARG:CZ   | 49:DQ:11:VAL:H     | 1.96                     | 0.78              |
| 8:AB:445:C:C4'    | 11:AE:47:LYS:HE2   | 2.13                     | 0.78              |
| 8:AB:688:U:H2'    | 8:AB:689:A:H5''    | 1.66                     | 0.78              |
| 8:AB:905:A:C6     | 8:AB:906:U:C5      | 2.72                     | 0.78              |
| 8:AB:1661:G:C5    | 8:AB:1662:U:H5     | 2.01                     | 0.78              |
| 8:AB:2405:G:H2'   | 8:AB:2411:A:N6     | 1.99                     | 0.78              |
| 25:AS:95:ARG:HG2  | 25:AS:95:ARG:HH11  | 1.48                     | 0.78              |
| 33:BA:212:G:H2'   | 33:BA:213:G:H8     | 1.49                     | 0.78              |
| 44:BL:87:LYS:NZ   | 44:BL:87:LYS:HA    | 1.99                     | 0.78              |
| 1:C0:41:HIS:CD2   | 1:C0:46:GLY:HA3    | 2.18                     | 0.78              |
| 8:CB:948:C:OP1    | 55:CB:5189:HOH:O   | 2.02                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2452:C:C4    | 8:CB:2453:A:N1     | 2.52                     | 0.78              |
| 10:CD:128:ARG:N   | 10:CD:128:ARG:HH11 | 1.81                     | 0.78              |
| 17:CK:39:ILE:HD12 | 17:CK:40:LYS:H     | 1.48                     | 0.78              |
| 17:CK:78:ARG:NH2  | 22:CP:102:ARG:HH12 | 1.82                     | 0.78              |
| 21:CO:36:TYR:HA   | 21:CO:52:SER:HB3   | 1.66                     | 0.78              |
| 33:DA:40:C:H2'    | 33:DA:41:G:C8      | 2.18                     | 0.78              |
| 33:DA:212:G:H2'   | 33:DA:213:G:H8     | 1.49                     | 0.78              |
| 33:DA:585:G:C8    | 33:DA:585:G:C5'    | 2.59                     | 0.78              |
| 33:DA:787:A:HO2'  | 33:DA:788:U:H6     | 1.32                     | 0.78              |
| 33:DA:913:A:H5'   | 33:DA:913:A:C8     | 2.19                     | 0.78              |
| 36:DD:36:ALA:HB2  | 36:DD:42:ALA:HB2   | 1.64                     | 0.78              |
| 40:DH:75:GLN:NE2  | 40:DH:76:ARG:H     | 1.81                     | 0.78              |
| 47:DO:63:ARG:HG3  | 47:DO:63:ARG:NH1   | 1.94                     | 0.78              |
| 1:A0:36:LYS:HG2   | 1:A0:37:HIS:O      | 1.84                     | 0.78              |
| 2:A1:24:LYS:NZ    | 8:AB:2285:C:H41    | 1.82                     | 0.78              |
| 2:A1:31:GLU:CG    | 2:A1:52:LYS:HD3    | 2.14                     | 0.78              |
| 3:A2:19:ARG:O     | 3:A2:21:ARG:N      | 2.16                     | 0.78              |
| 8:AB:861:A:C2     | 8:AB:862:G:H1'     | 2.18                     | 0.78              |
| 8:AB:948:C:H2'    | 8:AB:949:G:C8      | 2.19                     | 0.78              |
| 8:AB:1381:G:C5    | 8:AB:1382:G:N2     | 2.52                     | 0.78              |
| 14:AH:3:VAL:H     | 14:AH:21:VAL:HG21  | 1.47                     | 0.78              |
| 22:AP:2:ASN:N     | 22:AP:2:ASN:HD22   | 1.80                     | 0.78              |
| 23:AQ:87:VAL:HG12 | 24:AR:53:PHE:HZ    | 1.48                     | 0.78              |
| 24:AR:90:ARG:NH2  | 24:AR:92:TRP:CD1   | 2.53                     | 0.78              |
| 32:AZ:3:LYS:HB2   | 32:AZ:51:VAL:HG21  | 1.66                     | 0.78              |
| 33:BA:518:C:H2'   | 33:BA:530:G:C8     | 2.18                     | 0.78              |
| 34:BB:63:LYS:HA   | 34:BB:224:ARG:HH11 | 1.48                     | 0.78              |
| 8:CB:56:A:N6      | 8:CB:114:U:H3      | 1.81                     | 0.78              |
| 8:CB:1677:A:H5''  | 8:CB:1677:A:H8     | 1.46                     | 0.78              |
| 8:CB:1765:U:O2    | 8:CB:1766:G:C8     | 2.37                     | 0.78              |
| 9:CC:174:ARG:HB2  | 9:CC:180:MET:HG3   | 1.66                     | 0.78              |
| 18:CL:82:LEU:O    | 18:CL:85:VAL:HG12  | 1.84                     | 0.78              |
| 20:CN:52:ILE:HG21 | 20:CN:94:TYR:CD2   | 2.18                     | 0.78              |
| 31:CY:36:GLU:O    | 31:CY:37:ARG:HG2   | 1.83                     | 0.78              |
| 33:DA:154:U:H2'   | 33:DA:155:A:C8     | 2.19                     | 0.78              |
| 33:DA:577:G:O2'   | 33:DA:578:C:H5'    | 1.83                     | 0.78              |
| 33:DA:978:A:H61   | 33:DA:1316:G:H21   | 1.32                     | 0.78              |
| 34:DB:31:PHE:HB2  | 34:DB:41:ASN:HB2   | 1.63                     | 0.78              |
| 36:DD:2:ARG:HG2   | 36:DD:2:ARG:HH11   | 1.47                     | 0.78              |
| 47:DO:42:PHE:C    | 47:DO:44:GLU:H     | 1.87                     | 0.78              |
| 4:A3:48:MET:C     | 4:A3:50:SER:H      | 1.85                     | 0.77              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:347:A:H2'     | 8:AB:348:A:H5'     | 1.66                     | 0.77              |
| 8:AB:911:A:C5      | 19:AM:13:HIS:HD2   | 2.02                     | 0.77              |
| 8:AB:1139:G:H5''   | 8:AB:1139:G:H8     | 1.49                     | 0.77              |
| 8:AB:1567:G:H21    | 9:AC:30:ALA:HB2    | 1.49                     | 0.77              |
| 11:AE:3:LEU:HB2    | 11:AE:12:LEU:CB    | 2.14                     | 0.77              |
| 23:AQ:13:HIS:CE1   | 23:AQ:31:TYR:CZ    | 2.71                     | 0.77              |
| 32:AZ:49:ARG:HG2   | 32:AZ:50:ASP:H     | 1.47                     | 0.77              |
| 33:BA:409:U:H2'    | 33:BA:410:G:C8     | 2.19                     | 0.77              |
| 40:BH:70:VAL:HG12  | 40:BH:71:VAL:HG23  | 1.65                     | 0.77              |
| 41:BI:78:ILE:O     | 41:BI:82:ILE:HG13  | 1.83                     | 0.77              |
| 5:C4:26:ILE:CG2    | 5:C4:35:GLN:H      | 1.95                     | 0.77              |
| 8:CB:1285:A:H2'    | 8:CB:1286:A:H5''   | 1.64                     | 0.77              |
| 8:CB:1756:G:H3'    | 8:CB:1756:G:C8     | 2.19                     | 0.77              |
| 8:CB:2405:G:H2'    | 8:CB:2411:A:N6     | 1.99                     | 0.77              |
| 8:CB:2500:U:H5'    | 8:CB:2501:C:OP2    | 1.84                     | 0.77              |
| 10:CD:63:PRO:C     | 10:CD:65:ALA:H     | 1.85                     | 0.77              |
| 20:CN:37:THR:HG22  | 20:CN:39:PRO:HD2   | 1.64                     | 0.77              |
| 33:DA:15:G:H1'     | 37:DE:23:THR:HG21  | 1.64                     | 0.77              |
| 33:DA:625:U:H4'    | 48:DP:16:PHE:CE2   | 2.18                     | 0.77              |
| 33:DA:695:A:H2     | 33:DA:787:A:H4'    | 1.49                     | 0.77              |
| 33:DA:764:C:H2'    | 33:DA:764:C:O2     | 1.84                     | 0.77              |
| 42:DJ:65:TYR:HB3   | 46:DN:95:LEU:HD11  | 1.65                     | 0.77              |
| 48:DP:6:LEU:CD2    | 48:DP:71:VAL:HG12  | 2.14                     | 0.77              |
| 51:DS:42:ASN:O     | 51:DS:43:MET:HG3   | 1.84                     | 0.77              |
| 8:AB:1162:G:H4'    | 24:AR:23:GLU:OE2   | 1.84                     | 0.77              |
| 8:AB:1661:G:C6     | 8:AB:1662:U:C5     | 2.72                     | 0.77              |
| 16:AJ:45:THR:CG2   | 23:AQ:59:LEU:HD11  | 2.14                     | 0.77              |
| 18:AL:85:VAL:HG11  | 18:AL:98:ALA:HB3   | 1.66                     | 0.77              |
| 22:AP:49:ILE:HA    | 22:AP:62:LYS:O     | 1.83                     | 0.77              |
| 33:BA:1425:U:O2    | 33:BA:1476:A:C2    | 2.37                     | 0.77              |
| 36:BD:169:TRP:NE1  | 36:BD:185:PRO:HG3  | 1.98                     | 0.77              |
| 36:BD:183:ARG:HH22 | 36:BD:185:PRO:HA   | 1.50                     | 0.77              |
| 37:BE:91:SER:CB    | 37:BE:135:VAL:HG12 | 2.14                     | 0.77              |
| 41:BI:10:ARG:HG3   | 41:BI:105:ARG:HE   | 1.48                     | 0.77              |
| 44:BL:43:LYS:HB2   | 44:BL:44:PRO:HD3   | 1.67                     | 0.77              |
| 5:C4:26:ILE:HG21   | 5:C4:35:GLN:HG2    | 1.66                     | 0.77              |
| 8:CB:298:G:N2      | 8:CB:339:U:C5      | 2.51                     | 0.77              |
| 8:CB:515:A:H1'     | 8:CB:581:C:H1'     | 1.65                     | 0.77              |
| 8:CB:1021:A:H3'    | 8:CB:1021:A:H8     | 1.49                     | 0.77              |
| 8:CB:1417:C:H2'    | 8:CB:1418:G:H5'    | 1.65                     | 0.77              |
| 8:CB:1816:C:H3'    | 9:CC:62:ARG:NH1    | 1.99                     | 0.77              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:CD:11:MET:HG3  | 10:CD:12:THR:H     | 1.49                     | 0.77              |
| 10:CD:69:ALA:HB2  | 10:CD:91:THR:CB    | 2.13                     | 0.77              |
| 11:CE:48:THR:HG23 | 11:CE:85:PHE:O     | 1.84                     | 0.77              |
| 29:CW:40:ARG:HG3  | 29:CW:41:GLY:N     | 1.98                     | 0.77              |
| 33:DA:94:G:H5'    | 33:DA:94:G:C8      | 2.18                     | 0.77              |
| 33:DA:691:G:N2    | 33:DA:695:A:H5''   | 1.98                     | 0.77              |
| 33:DA:727:G:OP1   | 33:DA:742:G:N2     | 2.17                     | 0.77              |
| 33:DA:755:G:H8    | 33:DA:755:G:O5'    | 1.67                     | 0.77              |
| 33:DA:1084:G:OP2  | 33:DA:1084:G:C8    | 2.37                     | 0.77              |
| 36:DD:97:LEU:HA   | 36:DD:100:VAL:HB   | 1.65                     | 0.77              |
| 45:DM:16:ILE:HA   | 45:DM:19:THR:OG1   | 1.83                     | 0.77              |
| 5:A4:23:ILE:HG13  | 5:A4:24:ARG:H      | 1.49                     | 0.77              |
| 8:AB:581:C:H5'    | 23:AQ:30:VAL:HG13  | 1.67                     | 0.77              |
| 8:AB:2657:A:H4'   | 13:AG:91:VAL:HG21  | 1.65                     | 0.77              |
| 9:AC:3:VAL:N      | 33:BA:772:U:HO2'   | 1.81                     | 0.77              |
| 11:AE:166:LYS:HD2 | 11:AE:166:LYS:N    | 1.98                     | 0.77              |
| 8:CB:530:G:N2     | 8:CB:2023:C:H5     | 1.83                     | 0.77              |
| 8:CB:582:A:OP1    | 23:CQ:31:TYR:CZ    | 2.37                     | 0.77              |
| 8:CB:615:U:H5''   | 8:CB:616:A:C8      | 2.17                     | 0.77              |
| 8:CB:788:A:H5''   | 8:CB:790:U:C4      | 2.19                     | 0.77              |
| 8:CB:1036:G:O6    | 8:CB:1120:G:C5     | 2.37                     | 0.77              |
| 8:CB:1378:A:C8    | 8:CB:1380:G:C6     | 2.73                     | 0.77              |
| 10:CD:129:THR:OG1 | 10:CD:140:HIS:CE1  | 2.37                     | 0.77              |
| 19:CM:31:PHE:CE2  | 19:CM:113:ALA:HB3  | 2.19                     | 0.77              |
| 21:CO:65:THR:CB   | 21:CO:70:ALA:HB2   | 2.12                     | 0.77              |
| 25:CS:6:LYS:HB3   | 25:CS:104:THR:HG22 | 1.66                     | 0.77              |
| 26:CT:66:LYS:HE3  | 26:CT:67:VAL:N     | 1.98                     | 0.77              |
| 35:DC:10:ARG:NE   | 35:DC:179:ALA:HB3  | 1.97                     | 0.77              |
| 42:DJ:10:LEU:O    | 42:DJ:71:LEU:HB2   | 1.85                     | 0.77              |
| 8:AB:1060:U:C2    | 8:AB:1062:G:H5'    | 2.20                     | 0.77              |
| 8:AB:1756:G:H3'   | 8:AB:1756:G:C8     | 2.19                     | 0.77              |
| 8:AB:1914:C:H2'   | 8:AB:1915:U:C6     | 2.19                     | 0.77              |
| 8:AB:2575:C:H4'   | 10:AD:149:ASN:CB   | 2.14                     | 0.77              |
| 8:AB:2618:G:C5    | 8:AB:2619:C:C5     | 2.72                     | 0.77              |
| 11:AE:176:ASP:HB3 | 11:AE:179:SER:OG   | 1.85                     | 0.77              |
| 19:AM:73:ILE:O    | 19:AM:74:THR:HB    | 1.82                     | 0.77              |
| 20:AN:10:LEU:HD12 | 20:AN:10:LEU:O     | 1.84                     | 0.77              |
| 25:AS:11:ARG:HG3  | 25:AS:11:ARG:NH1   | 1.96                     | 0.77              |
| 26:AT:14:PRO:HA   | 26:AT:32:LEU:HA    | 1.67                     | 0.77              |
| 29:AW:48:ALA:N    | 29:AW:72:GLY:HA3   | 1.99                     | 0.77              |
| 33:BA:1281:C:H5'  | 33:BA:1282:C:C5    | 2.19                     | 0.77              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:BH:14:ARG:HH11 | 40:BH:14:ARG:HG2  | 1.48                     | 0.77              |
| 8:CB:1176:U:H2'   | 8:CB:1177:G:O4'   | 1.85                     | 0.77              |
| 8:CB:1617:C:O2    | 8:CB:1617:C:C2'   | 2.31                     | 0.77              |
| 8:CB:2081:U:H4'   | 32:CZ:23:LYS:HD3  | 1.66                     | 0.77              |
| 8:CB:2838:G:H5'   | 8:CB:2838:G:C8    | 2.19                     | 0.77              |
| 30:CX:8:GLU:CD    | 30:CX:9:LYS:H     | 1.87                     | 0.77              |
| 33:DA:870:U:H5'   | 33:DA:870:U:C6    | 2.19                     | 0.77              |
| 44:DL:24:GLU:HB3  | 44:DL:26:CYS:SG   | 2.25                     | 0.77              |
| 44:DL:78:VAL:HG23 | 44:DL:102:ASP:OD2 | 1.83                     | 0.77              |
| 3:A2:43:THR:C     | 3:A2:45:SER:N     | 2.38                     | 0.77              |
| 4:A3:29:ARG:HH12  | 4:A3:31:ILE:HD13  | 1.48                     | 0.77              |
| 4:A3:48:MET:SD    | 8:AB:2360:G:H5''  | 2.23                     | 0.77              |
| 8:AB:56:A:C2      | 8:AB:115:C:O2     | 2.38                     | 0.77              |
| 8:AB:1353:A:C4    | 8:AB:1354:A:N7    | 2.53                     | 0.77              |
| 8:AB:1590:A:H2'   | 8:AB:1591:A:C8    | 2.19                     | 0.77              |
| 8:AB:2053:G:OP1   | 10:AD:150:GLN:N   | 2.18                     | 0.77              |
| 8:AB:2563:U:H2'   | 8:AB:2565:A:OP2   | 1.85                     | 0.77              |
| 8:AB:2751:G:H21   | 13:AG:1:SER:CB    | 1.98                     | 0.77              |
| 19:AM:105:MET:HG3 | 19:AM:106:ASP:N   | 1.94                     | 0.77              |
| 27:AU:78:LYS:CB   | 27:AU:96:LYS:HB2  | 2.14                     | 0.77              |
| 28:AV:63:ILE:H    | 28:AV:70:ILE:HD11 | 1.50                     | 0.77              |
| 53:BU:5:VAL:O     | 53:BU:6:ARG:HB3   | 1.83                     | 0.77              |
| 7:CA:95:U:H2'     | 7:CA:96:G:C8      | 2.19                     | 0.77              |
| 8:CB:322:A:C5'    | 8:CB:340:A:H1'    | 2.13                     | 0.77              |
| 8:CB:1126:A:H8    | 8:CB:1126:A:H5'   | 1.49                     | 0.77              |
| 8:CB:1361:G:C4    | 8:CB:1362:C:H5    | 2.02                     | 0.77              |
| 8:CB:1912:A:C8    | 8:CB:1918:A:C2    | 2.72                     | 0.77              |
| 8:CB:2391:G:N2    | 8:CB:2424:C:H2'   | 1.99                     | 0.77              |
| 9:CC:51:ARG:NH2   | 9:CC:54:GLY:HA3   | 1.99                     | 0.77              |
| 19:CM:97:GLN:N    | 19:CM:98:PRO:HD3  | 2.00                     | 0.77              |
| 21:CO:39:VAL:O    | 21:CO:39:VAL:HG22 | 1.82                     | 0.77              |
| 22:CP:48:ALA:O    | 22:CP:49:ILE:HB   | 1.84                     | 0.77              |
| 26:CT:25:GLU:HA   | 26:CT:25:GLU:OE2  | 1.84                     | 0.77              |
| 33:DA:550:G:H2'   | 33:DA:551:U:C6    | 2.19                     | 0.77              |
| 33:DA:655:A:O2'   | 33:DA:755:G:H5'   | 1.84                     | 0.77              |
| 33:DA:729:A:C4    | 33:DA:730:G:C8    | 2.73                     | 0.77              |
| 40:DH:68:LYS:HE3  | 40:DH:68:LYS:N    | 1.98                     | 0.77              |
| 7:AA:29:A:H3'     | 7:AA:30:C:H6      | 1.50                     | 0.77              |
| 8:AB:554:U:H2'    | 8:AB:555:G:O4'    | 1.85                     | 0.77              |
| 8:AB:1361:G:C4    | 8:AB:1362:C:H5    | 2.02                     | 0.77              |
| 8:AB:1616:A:H5'   | 8:AB:1616:A:C8    | 2.19                     | 0.77              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2208:C:H2'    | 8:AB:2209:G:H8     | 1.49                     | 0.77              |
| 8:AB:2757:A:H2     | 8:AB:2758:A:N7     | 1.82                     | 0.77              |
| 8:AB:2838:G:H5'    | 8:AB:2838:G:C8     | 2.20                     | 0.77              |
| 11:AE:149:ILE:HG13 | 11:AE:186:VAL:HG13 | 1.64                     | 0.77              |
| 16:AJ:36:LEU:HD11  | 16:AJ:122:LEU:HG   | 1.66                     | 0.77              |
| 18:AL:38:GLN:H     | 18:AL:41:ARG:CZ    | 1.98                     | 0.77              |
| 19:AM:97:GLN:N     | 19:AM:98:PRO:HD3   | 2.00                     | 0.77              |
| 25:AS:29:VAL:HG21  | 25:AS:69:LEU:CB    | 2.14                     | 0.77              |
| 33:BA:565:U:H3'    | 33:BA:566:G:H2'    | 1.67                     | 0.77              |
| 33:BA:1370:G:C2'   | 33:BA:1371:G:H5''  | 2.14                     | 0.77              |
| 33:BA:1461:G:H2'   | 33:BA:1462:C:C6    | 2.20                     | 0.77              |
| 34:BB:106:VAL:HG12 | 34:BB:110:ILE:HD11 | 1.66                     | 0.77              |
| 1:C0:9:ARG:HD3     | 8:CB:517:C:OP2     | 1.85                     | 0.77              |
| 1:C0:36:LYS:HG2    | 1:C0:37:HIS:O      | 1.84                     | 0.77              |
| 5:C4:29:ALA:O      | 5:C4:30:GLU:HG3    | 1.84                     | 0.77              |
| 8:CB:104:A:H2'     | 8:CB:105:C:C6      | 2.18                     | 0.77              |
| 8:CB:1088:A:H4'    | 8:CB:1089:A:C8     | 2.20                     | 0.77              |
| 8:CB:1361:G:C4     | 8:CB:1362:C:C5     | 2.73                     | 0.77              |
| 8:CB:2289:G:H5'    | 8:CB:2289:G:H8     | 1.47                     | 0.77              |
| 8:CB:2442:C:N4     | 8:CB:2443:C:H41    | 1.82                     | 0.77              |
| 10:CD:68:PHE:HB2   | 10:CD:90:PHE:CE2   | 2.20                     | 0.77              |
| 13:CG:132:LEU:HD12 | 13:CG:140:ILE:HD12 | 1.65                     | 0.77              |
| 18:CL:14:LYS:NZ    | 18:CL:15:ALA:H     | 1.83                     | 0.77              |
| 19:CM:67:VAL:CG2   | 19:CM:100:LYS:HB3  | 2.14                     | 0.77              |
| 20:CN:96:ARG:NH2   | 20:CN:116:VAL:HG22 | 2.00                     | 0.77              |
| 23:CQ:38:VAL:HA    | 23:CQ:42:GLY:H     | 1.49                     | 0.77              |
| 33:DA:451:A:C1'    | 33:DA:452:A:C8     | 2.68                     | 0.77              |
| 33:DA:1053:G:H4'   | 33:DA:1054:C:H5'   | 1.65                     | 0.77              |
| 8:AB:851:C:H2'     | 8:AB:852:U:H6      | 1.46                     | 0.77              |
| 8:AB:1157:G:H5'    | 8:AB:1157:G:C8     | 2.19                     | 0.77              |
| 8:AB:1283:G:N2     | 8:AB:1286:A:H5'    | 1.99                     | 0.77              |
| 8:AB:1806:C:H6     | 8:AB:1806:C:H3'    | 1.48                     | 0.77              |
| 8:AB:2149:U:H4'    | 8:AB:2149:U:OP1    | 1.84                     | 0.77              |
| 8:AB:2637:U:H5''   | 8:AB:2638:G:OP2    | 1.85                     | 0.77              |
| 9:AC:102:TYR:O     | 9:AC:103:ILE:HG22  | 1.85                     | 0.77              |
| 11:AE:43:THR:CG2   | 11:AE:44:ARG:HH21  | 1.98                     | 0.77              |
| 33:BA:450:G:H22    | 33:BA:482:A:H61    | 1.33                     | 0.77              |
| 33:BA:724:G:H8     | 33:BA:724:G:H5'    | 1.50                     | 0.77              |
| 33:BA:1441:A:N6    | 33:BA:1462:C:H1'   | 1.99                     | 0.77              |
| 35:BC:134:LYS:HE3  | 35:BC:167:TYR:CE2  | 2.20                     | 0.77              |
| 49:BQ:10:ARG:CZ    | 49:BQ:11:VAL:H     | 1.98                     | 0.77              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:289:G:H2'     | 8:CB:290:U:O4'     | 1.84                     | 0.77              |
| 8:CB:877:A:N1      | 8:CB:899:A:H5'     | 2.00                     | 0.77              |
| 8:CB:1025:G:N7     | 8:CB:1135:C:H1'    | 1.99                     | 0.77              |
| 8:CB:1223:G:OP1    | 24:CR:72:VAL:HG21  | 1.84                     | 0.77              |
| 8:CB:2248:C:H2'    | 8:CB:2249:U:H5'    | 1.64                     | 0.77              |
| 9:CC:253:GLY:HA2   | 9:CC:254:LYS:NZ    | 1.99                     | 0.77              |
| 10:CD:181:ASP:HB3  | 10:CD:184:ARG:HB2  | 1.66                     | 0.77              |
| 17:CK:35:VAL:HG12  | 17:CK:63:VAL:O     | 1.85                     | 0.77              |
| 32:CZ:48:GLN:HE22  | 32:CZ:49:ARG:HD3   | 1.50                     | 0.77              |
| 37:DE:78:GLY:O     | 37:DE:119:VAL:HG12 | 1.85                     | 0.77              |
| 39:DG:125:ASP:HB3  | 39:DG:129:ASN:HA   | 1.65                     | 0.77              |
| 8:AB:679:C:C2      | 8:AB:680:C:C5      | 2.73                     | 0.77              |
| 8:AB:811:U:H5      | 18:AL:29:LYS:CE    | 1.98                     | 0.77              |
| 8:AB:2230:G:H2'    | 8:AB:2231:U:H6     | 1.47                     | 0.77              |
| 8:AB:2358:A:H8     | 8:AB:2358:A:H5'    | 1.49                     | 0.77              |
| 8:AB:2765:A:H3'    | 8:AB:2766:A:H8     | 1.50                     | 0.77              |
| 12:AF:37:MET:HG3   | 12:AF:86:CYS:SG    | 2.25                     | 0.77              |
| 14:AH:26:ALA:CB    | 14:AH:31:VAL:HG23  | 2.11                     | 0.77              |
| 16:AJ:136:GLN:N    | 16:AJ:137:PRO:HD2  | 2.00                     | 0.77              |
| 17:AK:35:VAL:HG12  | 17:AK:63:VAL:O     | 1.84                     | 0.77              |
| 23:AQ:89:ILE:HD11  | 23:AQ:91:ARG:NH1   | 1.99                     | 0.77              |
| 29:AW:24:ARG:O     | 29:AW:24:ARG:HG2   | 1.84                     | 0.77              |
| 37:BE:47:PHE:O     | 37:BE:66:ALA:HA    | 1.85                     | 0.77              |
| 51:BS:54:ARG:HG2   | 51:BS:54:ARG:NH1   | 1.99                     | 0.77              |
| 3:C2:5:PHE:CE1     | 8:CB:464:U:H5'     | 2.20                     | 0.77              |
| 8:CB:1178:C:H2'    | 8:CB:1179:G:C8     | 2.19                     | 0.77              |
| 8:CB:1353:A:N3     | 8:CB:1354:A:N7     | 2.33                     | 0.77              |
| 8:CB:2678:C:O2'    | 8:CB:2679:A:H5'    | 1.83                     | 0.77              |
| 10:CD:33:ARG:HD3   | 10:CD:89:GLU:OE1   | 1.84                     | 0.77              |
| 18:CL:117:THR:HG23 | 18:CL:119:PRO:HD2  | 1.66                     | 0.77              |
| 29:CW:24:ARG:O     | 29:CW:24:ARG:HG2   | 1.85                     | 0.77              |
| 33:DA:781:A:H3'    | 33:DA:781:A:H8     | 1.50                     | 0.77              |
| 33:DA:831:A:C8     | 33:DA:831:A:C3'    | 2.68                     | 0.77              |
| 33:DA:1511:G:H2'   | 33:DA:1512:U:O4'   | 1.84                     | 0.77              |
| 41:DI:40:ARG:H     | 41:DI:44:ARG:HD2   | 1.48                     | 0.77              |
| 8:AB:392:U:H2'     | 8:AB:393:C:C6      | 2.20                     | 0.77              |
| 8:AB:2400:G:N2     | 8:AB:2417:C:C2     | 2.52                     | 0.77              |
| 9:AC:144:GLU:HG2   | 9:AC:150:GLY:CA    | 2.14                     | 0.77              |
| 10:AD:33:ARG:HG2   | 10:AD:93:GLY:HA2   | 1.67                     | 0.77              |
| 28:AV:63:ILE:HB    | 28:AV:70:ILE:HG13  | 1.65                     | 0.77              |
| 33:BA:154:U:H2'    | 33:BA:155:A:C8     | 2.19                     | 0.77              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:528:A:H3'     | 8:CB:528:A:H8      | 1.50                     | 0.77              |
| 8:CB:601:C:O2      | 8:CB:605:G:H4'     | 1.85                     | 0.77              |
| 8:CB:1741:C:H2'    | 8:CB:1742:U:C6     | 2.18                     | 0.77              |
| 8:CB:2263:C:H2'    | 8:CB:2264:C:H6     | 1.49                     | 0.77              |
| 8:CB:2305:U:H3     | 12:CF:149:ARG:HB3  | 1.50                     | 0.77              |
| 10:CD:129:THR:HA   | 10:CD:140:HIS:HE1  | 1.48                     | 0.77              |
| 14:CH:115:VAL:HB   | 14:CH:132:PHE:CE1  | 2.20                     | 0.77              |
| 29:CW:17:ALA:C     | 29:CW:18:LYS:HG2   | 2.06                     | 0.77              |
| 33:DA:236:A:H2'    | 33:DA:237:G:H8     | 1.49                     | 0.77              |
| 33:DA:520:A:C8     | 33:DA:521:G:C8     | 2.72                     | 0.77              |
| 33:DA:908:A:O2'    | 33:DA:909:A:H5'    | 1.84                     | 0.77              |
| 46:DN:1:ALA:HB1    | 46:DN:3:GLN:OE1    | 1.85                     | 0.77              |
| 1:A0:21:LEU:HD11   | 25:AS:19:LEU:HB3   | 1.67                     | 0.77              |
| 8:AB:2633:G:H1'    | 10:AD:62:LYS:HG3   | 1.66                     | 0.77              |
| 10:AD:129:THR:HA   | 10:AD:140:HIS:CD2  | 2.19                     | 0.77              |
| 11:AE:169:VAL:HG23 | 11:AE:170:ARG:H    | 1.48                     | 0.77              |
| 14:AH:103:VAL:HG21 | 14:AH:110:VAL:HG22 | 1.66                     | 0.77              |
| 26:AT:6:ARG:HA     | 26:AT:8:LEU:HG     | 1.67                     | 0.77              |
| 33:BA:537:G:H3'    | 33:BA:537:G:H8     | 1.49                     | 0.77              |
| 33:BA:676:A:N1     | 33:BA:715:A:H2     | 1.83                     | 0.77              |
| 33:BA:864:A:H2     | 33:BA:917:G:N3     | 1.83                     | 0.77              |
| 46:BN:50:LEU:CG    | 46:BN:51:PRO:HD3   | 2.15                     | 0.77              |
| 7:CA:51:G:H1       | 21:CO:33:ARG:NH2   | 1.83                     | 0.77              |
| 8:CB:713:G:H21     | 8:CB:718:A:H2      | 1.33                     | 0.77              |
| 8:CB:1318:U:H2'    | 8:CB:1319:C:C6     | 2.18                     | 0.77              |
| 8:CB:1622:G:C2     | 8:CB:1623:G:C8     | 2.72                     | 0.77              |
| 8:CB:2344:U:H4'    | 8:CB:2345:G:OP1    | 1.85                     | 0.77              |
| 8:CB:2678:C:C2'    | 8:CB:2679:A:H8     | 1.98                     | 0.77              |
| 8:CB:2751:G:H5'    | 13:CG:3:VAL:HG11   | 1.65                     | 0.77              |
| 8:CB:2881:U:H2'    | 8:CB:2882:A:H8     | 1.48                     | 0.77              |
| 13:CG:23:ILE:CD1   | 13:CG:36:LEU:HD11  | 2.15                     | 0.77              |
| 14:CH:27:ARG:HB2   | 32:CZ:60:PHE:CZ    | 2.20                     | 0.77              |
| 16:CJ:7:LYS:HE3    | 16:CJ:47:HIS:NE2   | 2.00                     | 0.77              |
| 22:CP:24:THR:HG21  | 22:CP:111:GLU:HG2  | 1.66                     | 0.77              |
| 27:CU:27:VAL:HG12  | 27:CU:33:VAL:HA    | 1.67                     | 0.77              |
| 33:DA:18:C:H1'     | 33:DA:1079:G:N2    | 2.00                     | 0.77              |
| 33:DA:279:A:H4'    | 33:DA:280:C:OP2    | 1.84                     | 0.77              |
| 33:DA:585:G:H21    | 33:DA:879:C:H4'    | 1.48                     | 0.77              |
| 33:DA:1252:A:H3'   | 33:DA:1253:G:H5''  | 1.67                     | 0.77              |
| 39:DG:2:ARG:HH11   | 39:DG:2:ARG:CB     | 1.96                     | 0.77              |
| 8:AB:903:C:H2'     | 8:AB:904:G:H8      | 1.48                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1764:C:C2     | 8:AB:1765:U:H5     | 2.02                     | 0.76              |
| 8:AB:1765:U:O2     | 8:AB:1766:G:C8     | 2.38                     | 0.76              |
| 8:AB:2074:U:H2'    | 8:AB:2075:U:C6     | 2.20                     | 0.76              |
| 8:AB:2201:G:H5''   | 8:AB:2201:G:H8     | 1.49                     | 0.76              |
| 8:AB:2428:G:H21    | 18:AL:58:TYR:HD1   | 1.32                     | 0.76              |
| 31:AY:36:GLU:O     | 31:AY:37:ARG:HG2   | 1.84                     | 0.76              |
| 33:BA:537:G:C8     | 33:BA:537:G:C3'    | 2.68                     | 0.76              |
| 40:BH:10:LEU:HA    | 40:BH:13:ILE:HD12  | 1.67                     | 0.76              |
| 46:BN:12:ARG:HA    | 46:BN:15:LEU:HD11  | 1.67                     | 0.76              |
| 53:BU:11:PHE:HB2   | 35:DC:105:VAL:HG21 | 1.68                     | 0.76              |
| 5:C4:26:ILE:HG21   | 5:C4:35:GLN:N      | 1.99                     | 0.76              |
| 8:CB:237:C:H2'     | 8:CB:238:C:H6      | 1.49                     | 0.76              |
| 8:CB:1247:A:O2'    | 8:CB:1248:G:H5''   | 1.85                     | 0.76              |
| 8:CB:1783:A:OP2    | 55:CB:5303:HOH:O   | 2.03                     | 0.76              |
| 8:CB:1814:G:H8     | 8:CB:1814:G:H5'    | 1.50                     | 0.76              |
| 10:CD:130:GLN:HB3  | 10:CD:140:HIS:H    | 1.50                     | 0.76              |
| 16:CJ:27:ARG:HG3   | 16:CJ:27:ARG:HH11  | 1.49                     | 0.76              |
| 19:CM:80:VAL:CG1   | 19:CM:81:ARG:H     | 1.98                     | 0.76              |
| 24:CR:63:VAL:HG13  | 24:CR:101:ILE:HG23 | 1.67                     | 0.76              |
| 45:DM:33:LEU:HD22  | 45:DM:40:GLU:HA    | 1.66                     | 0.76              |
| 8:AB:1126:A:H8     | 8:AB:1126:A:H5'    | 1.48                     | 0.76              |
| 8:AB:2415:G:H2'    | 8:AB:2416:C:C6     | 2.19                     | 0.76              |
| 21:AO:25:ARG:HG3   | 21:AO:25:ARG:NH1   | 1.86                     | 0.76              |
| 26:AT:56:GLU:HG3   | 26:AT:88:LYS:HG3   | 1.67                     | 0.76              |
| 33:BA:376:G:H2'    | 33:BA:377:G:H8     | 1.50                     | 0.76              |
| 36:BD:8:LEU:CD2    | 36:BD:31:CYS:HB3   | 2.15                     | 0.76              |
| 8:CB:464:U:H2'     | 8:CB:465:G:H8      | 1.51                     | 0.76              |
| 11:CE:148:ILE:HA   | 11:CE:185:LYS:O    | 1.84                     | 0.76              |
| 12:CF:133:GLU:HG3  | 12:CF:134:GLN:H    | 1.50                     | 0.76              |
| 13:CG:142:GLN:HG3  | 13:CG:143:VAL:N    | 2.00                     | 0.76              |
| 19:CM:97:GLN:H     | 19:CM:98:PRO:HD3   | 1.50                     | 0.76              |
| 19:CM:108:VAL:HG21 | 19:CM:111:GLU:OE2  | 1.85                     | 0.76              |
| 28:CV:63:ILE:H     | 28:CV:70:ILE:CD1   | 1.99                     | 0.76              |
| 32:CZ:5:ILE:HD11   | 32:CZ:47:LYS:HE2   | 1.66                     | 0.76              |
| 33:DA:434:U:C2'    | 33:DA:435:A:C8     | 2.68                     | 0.76              |
| 35:DC:185:THR:HG21 | 35:DC:198:LYS:HE2  | 1.66                     | 0.76              |
| 49:DQ:46:HIS:CE1   | 49:DQ:48:GLU:HB2   | 2.21                     | 0.76              |
| 1:A0:29:VAL:HG23   | 1:A0:36:LYS:HD2    | 1.67                     | 0.76              |
| 8:AB:106:C:H6      | 8:AB:106:C:H3'     | 1.50                     | 0.76              |
| 8:AB:126:A:C2      | 8:AB:127:A:C6      | 2.74                     | 0.76              |
| 8:AB:556:A:H2'     | 8:AB:557:C:O4'     | 1.86                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1838:C:H4'    | 8:AB:1839:G:H5'    | 1.66                     | 0.76              |
| 16:AJ:12:LYS:HB2   | 16:AJ:44:TYR:OH    | 1.85                     | 0.76              |
| 26:AT:69:ARG:HD2   | 26:AT:70:HIS:H     | 1.48                     | 0.76              |
| 33:BA:473:U:H2'    | 33:BA:474:G:C8     | 2.19                     | 0.76              |
| 33:BA:1126:U:O2    | 33:BA:1280:A:H2'   | 1.84                     | 0.76              |
| 36:BD:153:ARG:HA   | 36:BD:156:ALA:HB3  | 1.67                     | 0.76              |
| 8:CB:81:G:H1       | 8:CB:105:C:N4      | 1.82                     | 0.76              |
| 8:CB:90:U:OP2      | 8:CB:91:A:H3'      | 1.83                     | 0.76              |
| 8:CB:343:C:H2'     | 8:CB:344:A:H5'     | 1.65                     | 0.76              |
| 8:CB:646:U:H6      | 8:CB:646:U:OP2     | 1.67                     | 0.76              |
| 9:CC:107:LYS:H     | 9:CC:194:VAL:CG2   | 1.98                     | 0.76              |
| 13:CG:118:ALA:C    | 13:CG:120:ILE:H    | 1.89                     | 0.76              |
| 19:CM:105:MET:HG3  | 19:CM:106:ASP:N    | 1.94                     | 0.76              |
| 36:DD:33:ILE:HG12  | 36:DD:34:GLU:N     | 2.01                     | 0.76              |
| 7:AA:12:C:H41      | 29:AW:50:VAL:HG23  | 1.48                     | 0.76              |
| 8:AB:132:G:H21     | 8:AB:148:U:H3      | 1.31                     | 0.76              |
| 8:AB:570:G:C4      | 8:AB:2030:A:N7     | 2.54                     | 0.76              |
| 8:AB:738:G:H2'     | 8:AB:739:A:C8      | 2.20                     | 0.76              |
| 8:AB:1216:G:H2'    | 8:AB:1217:U:H5'    | 1.66                     | 0.76              |
| 10:AD:181:ASP:HB3  | 10:AD:184:ARG:HB2  | 1.66                     | 0.76              |
| 11:AE:60:TRP:N     | 11:AE:60:TRP:CD1   | 2.54                     | 0.76              |
| 17:AK:78:ARG:HH21  | 22:AP:72:VAL:HG11  | 1.50                     | 0.76              |
| 18:AL:126:ARG:HH21 | 18:AL:128:THR:HG23 | 1.49                     | 0.76              |
| 24:AR:90:ARG:NH1   | 24:AR:92:TRP:H     | 1.83                     | 0.76              |
| 25:AS:89:ALA:O     | 25:AS:90:LYS:HB2   | 1.83                     | 0.76              |
| 33:BA:1212:U:H4'   | 33:BA:1213:A:H8    | 1.50                     | 0.76              |
| 36:BD:18:LEU:HD22  | 36:BD:63:ILE:HD11  | 1.68                     | 0.76              |
| 46:BN:42:ASN:HB3   | 46:BN:46:LYS:HE2   | 1.68                     | 0.76              |
| 52:BT:34:VAL:HG22  | 52:BT:49:ALA:HB1   | 1.67                     | 0.76              |
| 53:BU:39:LYS:O     | 53:BU:43:GLU:HB2   | 1.84                     | 0.76              |
| 8:CB:1316:U:O2'    | 8:CB:1317:G:H5'    | 1.86                     | 0.76              |
| 8:CB:1564:C:H2'    | 8:CB:1565:C:C6     | 2.20                     | 0.76              |
| 8:CB:1824:G:N2     | 9:CC:249:VAL:HG12  | 1.99                     | 0.76              |
| 8:CB:2391:G:H1     | 8:CB:2424:C:H3'    | 1.51                     | 0.76              |
| 11:CE:136:GLN:O    | 11:CE:139:LYS:HG2  | 1.84                     | 0.76              |
| 11:CE:143:LEU:HD13 | 11:CE:143:LEU:N    | 2.00                     | 0.76              |
| 13:CG:156:TYR:HD1  | 13:CG:174:LYS:HZ3  | 1.34                     | 0.76              |
| 18:CL:35:HIS:HE1   | 24:CR:84:ARG:C     | 1.88                     | 0.76              |
| 23:CQ:39:ILE:HG13  | 23:CQ:40:LYS:N     | 1.99                     | 0.76              |
| 45:DM:18:LEU:HD12  | 45:DM:33:LEU:HD12  | 1.68                     | 0.76              |
| 8:AB:476:G:N2      | 8:AB:479:A:C8      | 2.53                     | 0.76              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:1785:A:O2'    | 8:AB:1786:A:H5'   | 1.85                     | 0.76              |
| 9:AC:58:LYS:HB2    | 9:AC:58:LYS:NZ    | 2.00                     | 0.76              |
| 12:AF:67:THR:OG1   | 12:AF:85:GLY:HA3  | 1.86                     | 0.76              |
| 20:AN:8:ARG:HD2    | 20:AN:46:ARG:HD3  | 1.67                     | 0.76              |
| 20:AN:52:ILE:HG21  | 20:AN:94:TYR:CD2  | 2.21                     | 0.76              |
| 33:BA:1417:G:N2    | 33:BA:1484:C:N4   | 2.33                     | 0.76              |
| 41:BI:110:VAL:HG12 | 41:BI:111:GLU:H   | 1.50                     | 0.76              |
| 43:BK:68:ARG:HG3   | 43:BK:68:ARG:NH1  | 1.88                     | 0.76              |
| 8:CB:2081:U:H4'    | 32:CZ:23:LYS:CD   | 2.15                     | 0.76              |
| 8:CB:2699:C:H2'    | 8:CB:2700:A:H8    | 1.50                     | 0.76              |
| 8:CB:2765:A:H3'    | 8:CB:2766:A:H8    | 1.49                     | 0.76              |
| 9:CC:131:MET:HB2   | 9:CC:185:ALA:O    | 1.86                     | 0.76              |
| 10:CD:62:LYS:HZ2   | 10:CD:62:LYS:H    | 1.33                     | 0.76              |
| 23:CQ:24:TYR:O     | 23:CQ:27:ARG:HB3  | 1.85                     | 0.76              |
| 23:CQ:70:GLN:HG3   | 23:CQ:71:ASN:N    | 1.96                     | 0.76              |
| 33:DA:426:U:H2'    | 33:DA:427:U:C6    | 2.20                     | 0.76              |
| 33:DA:508:U:H1'    | 33:DA:509:A:N7    | 2.00                     | 0.76              |
| 34:DB:116:LEU:HA   | 34:DB:119:GLN:HB2 | 1.68                     | 0.76              |
| 38:DF:50:PRO:HD3   | 50:DR:73:HIS:CE1  | 2.21                     | 0.76              |
| 40:DH:17:GLN:NE2   | 40:DH:71:VAL:HG22 | 1.98                     | 0.76              |
| 1:A0:28:SER:O      | 1:A0:29:VAL:HB    | 1.85                     | 0.76              |
| 8:AB:84:A:P        | 27:AU:2:ALA:HB2   | 2.26                     | 0.76              |
| 8:AB:272:A:C2      | 8:AB:366:C:N3     | 2.54                     | 0.76              |
| 8:AB:529:A:N7      | 8:AB:2023:C:N4    | 2.33                     | 0.76              |
| 8:AB:850:U:H2'     | 8:AB:851:C:C5     | 2.19                     | 0.76              |
| 8:AB:870:U:OP1     | 19:AM:9:PHE:HB2   | 1.86                     | 0.76              |
| 8:AB:1176:U:H2'    | 8:AB:1177:G:O4'   | 1.86                     | 0.76              |
| 8:AB:1259:G:H2'    | 8:AB:1260:A:C8    | 2.19                     | 0.76              |
| 8:AB:1709:U:O2     | 8:AB:1710:G:C8    | 2.39                     | 0.76              |
| 9:AC:140:VAL:O     | 9:AC:141:HIS:HB2  | 1.83                     | 0.76              |
| 9:AC:253:GLY:HA2   | 9:AC:254:LYS:NZ   | 2.00                     | 0.76              |
| 13:AG:125:PRO:HB2  | 13:AG:129:GLU:OE2 | 1.86                     | 0.76              |
| 23:AQ:25:GLY:O     | 23:AQ:29:ARG:HB2  | 1.86                     | 0.76              |
| 24:AR:24:LYS:NZ    | 24:AR:66:HIS:CE1  | 2.53                     | 0.76              |
| 33:BA:922:G:C2     | 33:BA:1396:A:C2   | 2.73                     | 0.76              |
| 33:BA:1269:A:H2'   | 33:BA:1270:G:O4'  | 1.85                     | 0.76              |
| 49:BQ:46:HIS:CE1   | 49:BQ:48:GLU:HB2  | 2.21                     | 0.76              |
| 8:CB:450:G:N2      | 8:CB:451:U:H5     | 1.83                     | 0.76              |
| 8:CB:537:G:C2      | 8:CB:555:G:N2     | 2.53                     | 0.76              |
| 8:CB:2305:U:H1'    | 12:CF:131:VAL:O   | 1.86                     | 0.76              |
| 8:CB:2682:A:H61    | 8:CB:2728:U:H1'   | 1.51                     | 0.76              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:CD:34:VAL:HG22 | 10:CD:35:THR:N     | 2.00                     | 0.76              |
| 36:DD:138:PRO:HG3 | 36:DD:184:LYS:HG3  | 1.67                     | 0.76              |
| 41:DI:25:GLY:HA2  | 41:DI:56:MET:SD    | 2.26                     | 0.76              |
| 42:DJ:8:ILE:HG22  | 42:DJ:100:ILE:HG23 | 1.67                     | 0.76              |
| 44:DL:93:ARG:HD2  | 44:DL:93:ARG:N     | 1.99                     | 0.76              |
| 52:DT:9:ARG:O     | 52:DT:13:SER:HB2   | 1.86                     | 0.76              |
| 8:AB:327:G:N2     | 8:AB:336:C:C2      | 2.54                     | 0.76              |
| 8:AB:687:C:C4     | 8:AB:688:U:C2      | 2.73                     | 0.76              |
| 8:AB:831:G:C6     | 8:AB:832:U:N3      | 2.54                     | 0.76              |
| 8:AB:970:U:H2'    | 8:AB:971:G:H8      | 1.50                     | 0.76              |
| 8:AB:2263:C:H2'   | 8:AB:2264:C:H6     | 1.49                     | 0.76              |
| 8:AB:2534:A:H5''  | 8:AB:2534:A:H8     | 1.51                     | 0.76              |
| 8:AB:2881:U:H2'   | 8:AB:2882:A:H8     | 1.51                     | 0.76              |
| 14:AH:68:ARG:HB2  | 14:AH:138:VAL:HG21 | 1.67                     | 0.76              |
| 23:AQ:73:ILE:HG23 | 23:AQ:77:LYS:HD2   | 1.68                     | 0.76              |
| 23:AQ:92:LYS:O    | 23:AQ:93:ILE:HG22  | 1.86                     | 0.76              |
| 24:AR:70:GLU:O    | 24:AR:71:LYS:HB2   | 1.84                     | 0.76              |
| 25:AS:11:ARG:O    | 25:AS:12:SER:HB2   | 1.85                     | 0.76              |
| 32:AZ:34:LEU:HD12 | 32:AZ:44:PHE:HB3   | 1.68                     | 0.76              |
| 33:BA:577:G:C2    | 33:BA:578:C:C6     | 2.73                     | 0.76              |
| 33:BA:1206:G:O2'  | 35:BC:192:TYR:HB3  | 1.86                     | 0.76              |
| 43:BK:28:ASN:ND2  | 43:BK:46:ALA:HB3   | 2.01                     | 0.76              |
| 1:C0:40:HIS:HD1   | 1:C0:41:HIS:C      | 1.88                     | 0.76              |
| 3:C2:33:ARG:HA    | 3:C2:37:LYS:HG3    | 1.67                     | 0.76              |
| 8:CB:65:U:OP1     | 26:CT:76:ARG:HB3   | 1.85                     | 0.76              |
| 8:CB:539:G:H2'    | 8:CB:540:C:H6      | 1.50                     | 0.76              |
| 8:CB:1210:G:H5''  | 8:CB:1211:C:H3'    | 1.67                     | 0.76              |
| 11:CE:147:LEU:HB3 | 11:CE:167:VAL:HG13 | 1.68                     | 0.76              |
| 23:CQ:39:ILE:O    | 23:CQ:43:GLN:CB    | 2.29                     | 0.76              |
| 23:CQ:40:LYS:HB2  | 23:CQ:40:LYS:NZ    | 2.00                     | 0.76              |
| 24:CR:69:GLY:O    | 24:CR:70:GLU:HG3   | 1.86                     | 0.76              |
| 27:CU:35:VAL:O    | 27:CU:37:GLY:N     | 2.19                     | 0.76              |
| 32:CZ:34:LEU:CD1  | 32:CZ:35:ASP:H     | 1.98                     | 0.76              |
| 33:DA:442:G:H1    | 33:DA:493:A:N6     | 1.83                     | 0.76              |
| 33:DA:1332:A:H2'  | 33:DA:1333:A:C8    | 2.20                     | 0.76              |
| 8:AB:193:U:C2     | 8:AB:194:G:C8      | 2.74                     | 0.76              |
| 8:AB:237:C:H2'    | 8:AB:238:C:H6      | 1.50                     | 0.76              |
| 8:AB:420:C:H2'    | 8:AB:421:C:H6      | 1.51                     | 0.76              |
| 8:AB:450:G:N2     | 8:AB:451:U:H5      | 1.82                     | 0.76              |
| 8:AB:1618:A:OP2   | 55:AB:4504:HOH:O   | 2.04                     | 0.76              |
| 8:AB:2636:C:OP1   | 10:AD:80:TRP:HB2   | 1.86                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AZ:50:ASP:HA    | 32:AZ:53:THR:HG22  | 1.66                     | 0.76              |
| 33:BA:505:G:C5     | 33:BA:535:A:C2     | 2.74                     | 0.76              |
| 33:BA:1270:G:H4'   | 33:BA:1314:C:H5''  | 1.66                     | 0.76              |
| 36:BD:90:LEU:HD23  | 36:BD:93:LEU:HD11  | 1.68                     | 0.76              |
| 41:BI:79:ARG:HH21  | 41:BI:102:PHE:HA   | 1.51                     | 0.76              |
| 44:BL:89:LEU:O     | 44:BL:92:VAL:HB    | 1.86                     | 0.76              |
| 8:CB:136:G:H22     | 26:CT:3:ARG:CZ     | 1.98                     | 0.76              |
| 8:CB:1861:G:C8     | 8:CB:1861:G:H5''   | 2.20                     | 0.76              |
| 8:CB:1914:C:H2'    | 8:CB:1915:U:C6     | 2.21                     | 0.76              |
| 8:CB:2011:U:H5''   | 25:CS:11:ARG:HH22  | 1.50                     | 0.76              |
| 8:CB:2014:A:C2'    | 8:CB:2015:A:C8     | 2.67                     | 0.76              |
| 8:CB:2189:U:H2'    | 8:CB:2190:G:C8     | 2.20                     | 0.76              |
| 8:CB:2739:U:H6     | 8:CB:2739:U:H3'    | 1.49                     | 0.76              |
| 8:CB:2788:C:H2'    | 8:CB:2789:C:C6     | 2.21                     | 0.76              |
| 9:CC:257:ARG:HG2   | 9:CC:261:ARG:HH12  | 1.48                     | 0.76              |
| 9:CC:264:LYS:O     | 9:CC:265:PHE:HB2   | 1.83                     | 0.76              |
| 10:CD:138:LEU:HA   | 10:CD:142:VAL:HG21 | 1.68                     | 0.76              |
| 11:CE:49:ARG:HD3   | 11:CE:49:ARG:H     | 1.50                     | 0.76              |
| 23:CQ:13:HIS:CG    | 23:CQ:31:TYR:CE2   | 2.73                     | 0.76              |
| 24:CR:4:VAL:HG12   | 24:CR:43:ASN:HB2   | 1.68                     | 0.76              |
| 25:CS:95:ARG:HH11  | 25:CS:95:ARG:HG2   | 1.48                     | 0.76              |
| 33:DA:464:U:H5'    | 33:DA:465:A:OP2    | 1.86                     | 0.76              |
| 33:DA:963:G:H2'    | 33:DA:964:A:H8     | 1.49                     | 0.76              |
| 33:DA:1425:U:C6    | 33:DA:1425:U:C3'   | 2.67                     | 0.76              |
| 33:DA:1481:U:O2'   | 33:DA:1482:G:H5'   | 1.85                     | 0.76              |
| 2:A1:11:VAL:HG12   | 2:A1:51:ALA:HB2    | 1.67                     | 0.76              |
| 4:A3:27:ASN:N      | 4:A3:29:ARG:HD2    | 2.00                     | 0.76              |
| 8:AB:780:G:H1      | 9:AC:228:ASP:CG    | 1.89                     | 0.76              |
| 8:AB:790:U:H5''    | 8:AB:791:C:OP2     | 1.85                     | 0.76              |
| 9:AC:62:ARG:CG     | 9:AC:62:ARG:HH11   | 1.99                     | 0.76              |
| 12:AF:133:GLU:HG3  | 12:AF:134:GLN:H    | 1.49                     | 0.76              |
| 16:AJ:96:ARG:C     | 16:AJ:96:ARG:HE    | 1.89                     | 0.76              |
| 18:AL:96:LYS:H     | 18:AL:100:ILE:HD12 | 1.51                     | 0.76              |
| 19:AM:11:LYS:HG2   | 19:AM:12:MET:H     | 1.50                     | 0.76              |
| 23:AQ:47:ARG:HH21  | 23:AQ:54:ARG:CZ    | 1.98                     | 0.76              |
| 33:BA:1097:C:H2'   | 33:BA:1098:C:C6    | 2.15                     | 0.76              |
| 40:BH:103:VAL:HG12 | 40:BH:124:ILE:HA   | 1.67                     | 0.76              |
| 45:BM:14:ALA:HB3   | 45:BM:40:GLU:HA    | 1.67                     | 0.76              |
| 46:BN:12:ARG:HH11  | 46:BN:60:ARG:HH12  | 1.33                     | 0.76              |
| 47:BO:32:THR:HA    | 47:BO:62:ARG:HH11  | 1.49                     | 0.76              |
| 4:C3:12:ARG:CZ     | 18:CL:62:PRO:HB3   | 2.15                     | 0.76              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:584:C:H42     | 8:CB:1256:G:H1     | 1.31                     | 0.76              |
| 8:CB:860:U:C1'     | 8:CB:2268:A:H5'    | 2.16                     | 0.76              |
| 8:CB:1375:U:H3'    | 8:CB:1376:C:H5''   | 1.68                     | 0.76              |
| 8:CB:2320:U:H3'    | 8:CB:2320:U:C6     | 2.21                     | 0.76              |
| 8:CB:2337:G:H2'    | 8:CB:2337:G:N3     | 1.98                     | 0.76              |
| 8:CB:2683:C:C2'    | 8:CB:2684:U:H5'    | 2.16                     | 0.76              |
| 8:CB:2885:G:C6     | 8:CB:2886:A:H8     | 2.04                     | 0.76              |
| 18:CL:126:ARG:HH21 | 18:CL:128:THR:HG23 | 1.49                     | 0.76              |
| 22:CP:105:LYS:HG3  | 22:CP:107:ALA:H    | 1.49                     | 0.76              |
| 32:CZ:17:SER:O     | 32:CZ:18:CYS:HB2   | 1.86                     | 0.76              |
| 33:DA:951:G:H2'    | 33:DA:952:U:C6     | 2.20                     | 0.76              |
| 33:DA:1152:A:H5''  | 33:DA:1152:A:H8    | 1.49                     | 0.76              |
| 33:DA:1169:A:H2'   | 33:DA:1170:A:C8    | 2.15                     | 0.76              |
| 33:DA:1430:A:H2'   | 33:DA:1431:A:H5'   | 1.68                     | 0.76              |
| 41:DI:94:ARG:HG3   | 41:DI:94:ARG:HH11  | 1.49                     | 0.76              |
| 53:DU:13:VAL:HA    | 53:DU:16:ARG:HH21  | 1.49                     | 0.76              |
| 2:A1:24:LYS:HZ1    | 8:AB:2285:C:H41    | 1.33                     | 0.76              |
| 8:AB:572:A:H8      | 8:AB:572:A:O5'     | 1.69                     | 0.76              |
| 8:AB:1205:A:H8     | 11:AE:164:LEU:HD13 | 1.50                     | 0.76              |
| 8:AB:1263:U:H2'    | 8:AB:1264:A:C8     | 2.21                     | 0.76              |
| 8:AB:2572:A:H2'    | 10:AD:150:GLN:HG3  | 1.67                     | 0.76              |
| 33:BA:444:G:H2'    | 33:BA:445:G:H8     | 1.46                     | 0.76              |
| 33:BA:717:U:C2     | 33:BA:734:G:N7     | 2.54                     | 0.76              |
| 33:BA:757:U:O2'    | 33:BA:879:C:H1'    | 1.86                     | 0.76              |
| 34:BB:52:ALA:O     | 34:BB:56:LEU:HD23  | 1.85                     | 0.76              |
| 41:BI:7:GLY:HA3    | 41:BI:84:ARG:HB3   | 1.68                     | 0.76              |
| 42:BJ:10:LEU:HD13  | 42:BJ:18:ILE:HD11  | 1.67                     | 0.76              |
| 8:CB:743:A:OP1     | 10:CD:134:HIS:CE1  | 2.38                     | 0.76              |
| 8:CB:802:A:H2'     | 8:CB:803:U:C6      | 2.21                     | 0.76              |
| 8:CB:1996:C:H5     | 17:CK:32:TYR:HH    | 1.33                     | 0.76              |
| 10:CD:56:LYS:HZ2   | 10:CD:59:ARG:HA    | 1.47                     | 0.76              |
| 11:CE:83:VAL:O     | 11:CE:85:PHE:N     | 2.18                     | 0.76              |
| 18:CL:80:SER:O     | 18:CL:84:LYS:HD2   | 1.86                     | 0.76              |
| 22:CP:49:ILE:HA    | 22:CP:62:LYS:O     | 1.86                     | 0.76              |
| 33:DA:886:G:H8     | 33:DA:886:G:H5'    | 1.50                     | 0.76              |
| 33:DA:943:U:C2'    | 33:DA:944:G:H5'    | 2.16                     | 0.76              |
| 33:DA:1176:A:H2'   | 33:DA:1177:G:C8    | 2.21                     | 0.76              |
| 35:DC:21:TRP:CD1   | 35:DC:58:ARG:HG2   | 2.21                     | 0.76              |
| 51:DS:7:GLY:H      | 51:DS:8:PRO:HD3    | 1.51                     | 0.76              |
| 8:AB:85:G:H5''     | 8:AB:85:G:H8       | 1.51                     | 0.75              |
| 8:AB:528:A:H3'     | 8:AB:528:A:C8      | 2.21                     | 0.75              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:549:G:H4'    | 8:AB:550:C:C5     | 2.21                     | 0.75              |
| 8:AB:2341:G:H2'   | 8:AB:2342:C:H6    | 1.51                     | 0.75              |
| 8:AB:2421:G:H8    | 8:AB:2421:G:H5'   | 1.51                     | 0.75              |
| 8:AB:2788:C:H2'   | 8:AB:2789:C:C6    | 2.20                     | 0.75              |
| 8:AB:2891:U:H6    | 8:AB:2891:U:H3'   | 1.51                     | 0.75              |
| 9:AC:17:LYS:N     | 9:AC:17:LYS:HE2   | 2.01                     | 0.75              |
| 9:AC:80:LEU:HA    | 9:AC:91:ALA:HA    | 1.66                     | 0.75              |
| 9:AC:196:ASN:HB3  | 9:AC:199:HIS:NE2  | 2.00                     | 0.75              |
| 13:AG:64:ALA:HB1  | 13:AG:68:ARG:NH2  | 2.01                     | 0.75              |
| 33:BA:978:A:H2'   | 33:BA:979:C:H6    | 1.48                     | 0.75              |
| 33:BA:1438:G:H2'  | 33:BA:1439:G:C8   | 2.16                     | 0.75              |
| 40:BH:11:THR:HA   | 40:BH:14:ARG:NH1  | 2.00                     | 0.75              |
| 48:BP:21:VAL:O    | 48:BP:33:ILE:HG13 | 1.87                     | 0.75              |
| 8:CB:263:G:H2'    | 8:CB:264:C:O4'    | 1.85                     | 0.75              |
| 8:CB:1040:A:C6    | 8:CB:1041:G:C8    | 2.74                     | 0.75              |
| 8:CB:2444:G:P     | 11:CE:63:LYS:HZ1  | 2.09                     | 0.75              |
| 8:CB:2563:U:H2'   | 8:CB:2565:A:OP2   | 1.85                     | 0.75              |
| 8:CB:2717:C:H1'   | 22:CP:95:LYS:NZ   | 2.00                     | 0.75              |
| 9:CC:17:LYS:N     | 9:CC:17:LYS:HE2   | 2.00                     | 0.75              |
| 9:CC:121:ALA:H    | 9:CC:129:LEU:HD12 | 1.49                     | 0.75              |
| 9:CC:208:GLY:HA2  | 9:CC:212:TRP:HB2  | 1.68                     | 0.75              |
| 9:CC:216:ARG:HB3  | 9:CC:217:PRO:HD3  | 1.67                     | 0.75              |
| 10:CD:3:GLY:O     | 10:CD:4:LEU:HB3   | 1.84                     | 0.75              |
| 11:CE:199:MET:HG3 | 11:CE:200:LEU:N   | 2.00                     | 0.75              |
| 17:CK:11:ALA:HB3  | 17:CK:85:VAL:HG23 | 1.69                     | 0.75              |
| 19:CM:41:LEU:HB2  | 19:CM:93:VAL:HB   | 1.66                     | 0.75              |
| 20:CN:56:LYS:CD   | 20:CN:57:THR:H    | 1.96                     | 0.75              |
| 27:CU:83:GLY:HA2  | 27:CU:92:VAL:CB   | 2.16                     | 0.75              |
| 33:DA:836:G:H1    | 33:DA:850:U:H3    | 1.34                     | 0.75              |
| 33:DA:889:A:C2    | 33:DA:891:U:O4    | 2.40                     | 0.75              |
| 33:DA:1394:A:C8   | 33:DA:1501:C:C1'  | 2.68                     | 0.75              |
| 7:AA:6:G:H8       | 7:AA:6:G:H5'      | 1.50                     | 0.75              |
| 8:AB:860:U:H1'    | 8:AB:2268:A:H5'   | 1.67                     | 0.75              |
| 55:AB:4220:HOH:O  | 23:AQ:7:VAL:HG11  | 1.84                     | 0.75              |
| 10:AD:33:ARG:HD3  | 10:AD:94:GLN:H    | 1.51                     | 0.75              |
| 14:AH:89:LYS:HE3  | 14:AH:123:ARG:HB2 | 1.67                     | 0.75              |
| 15:AI:3:LYS:HE3   | 15:AI:5:GLN:HB2   | 1.67                     | 0.75              |
| 16:AJ:28:LEU:HD13 | 16:AJ:32:LEU:HD12 | 1.68                     | 0.75              |
| 33:BA:1313:U:C2'  | 33:BA:1314:C:H5'  | 2.16                     | 0.75              |
| 34:BB:103:TRP:CZ3 | 34:BB:107:ARG:HD3 | 2.21                     | 0.75              |
| 46:BN:60:ARG:HD3  | 46:BN:60:ARG:H    | 1.50                     | 0.75              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 47:BO:63:ARG:HG3  | 47:BO:63:ARG:NH1  | 1.94                     | 0.75              |
| 1:C0:38:LEU:HD23  | 8:CB:2815:C:H4'   | 1.69                     | 0.75              |
| 7:CA:57:A:C4      | 12:CF:25:MET:HG2  | 2.21                     | 0.75              |
| 8:CB:565:C:O2     | 8:CB:577:G:C2     | 2.39                     | 0.75              |
| 8:CB:1532:A:H5''  | 8:CB:1532:A:C8    | 2.22                     | 0.75              |
| 8:CB:1768:C:H3'   | 8:CB:1768:C:C6    | 2.22                     | 0.75              |
| 8:CB:1802:A:C6    | 8:CB:1817:G:N2    | 2.54                     | 0.75              |
| 8:CB:2661:G:H2'   | 8:CB:2662:A:C8    | 2.21                     | 0.75              |
| 9:CC:15:VAL:HG12  | 9:CC:16:VAL:HG22  | 1.69                     | 0.75              |
| 9:CC:261:ARG:HH11 | 9:CC:261:ARG:CG   | 1.98                     | 0.75              |
| 15:CI:27:LEU:HB2  | 15:CI:58:ILE:HD13 | 1.68                     | 0.75              |
| 16:CJ:28:LEU:HD13 | 16:CJ:32:LEU:HD12 | 1.67                     | 0.75              |
| 22:CP:93:LYS:HB3  | 22:CP:96:LEU:HA   | 1.66                     | 0.75              |
| 29:CW:47:GLY:CA   | 29:CW:72:GLY:HA3  | 2.15                     | 0.75              |
| 32:CZ:16:CYS:HA   | 32:CZ:21:VAL:HG21 | 1.68                     | 0.75              |
| 33:DA:216:U:H2'   | 33:DA:217:C:C6    | 2.21                     | 0.75              |
| 33:DA:382:A:N3    | 33:DA:383:A:N7    | 2.34                     | 0.75              |
| 33:DA:1057:G:H2'  | 33:DA:1058:G:O4'  | 1.87                     | 0.75              |
| 33:DA:1498:U:OP2  | 33:DA:1498:U:H6   | 1.68                     | 0.75              |
| 47:DO:84:LEU:HB3  | 47:DO:86:LEU:HD13 | 1.67                     | 0.75              |
| 3:A2:33:ARG:HA    | 3:A2:37:LYS:HG3   | 1.67                     | 0.75              |
| 8:AB:100:U:H4'    | 27:AU:90:LYS:HB3  | 1.69                     | 0.75              |
| 8:AB:2820:A:H5''  | 8:AB:2820:A:H8    | 1.51                     | 0.75              |
| 10:AD:42:ASN:HD22 | 10:AD:43:ASP:N    | 1.84                     | 0.75              |
| 32:AZ:21:VAL:CG1  | 32:AZ:23:LYS:HG2  | 2.16                     | 0.75              |
| 33:BA:26:A:H2     | 36:BD:205:LYS:HB3 | 1.51                     | 0.75              |
| 33:BA:451:A:H4'   | 33:BA:452:A:C8    | 2.22                     | 0.75              |
| 33:BA:731:G:H5''  | 33:BA:731:G:C8    | 2.21                     | 0.75              |
| 33:BA:812:G:H2'   | 33:BA:812:G:N3    | 2.02                     | 0.75              |
| 33:BA:862:C:C2'   | 33:BA:863:U:H5'   | 2.15                     | 0.75              |
| 33:BA:987:G:H21   | 33:BA:1014:A:H2   | 1.33                     | 0.75              |
| 40:BH:26:MET:HB2  | 40:BH:27:PRO:CD   | 2.16                     | 0.75              |
| 5:C4:22:VAL:O     | 5:C4:22:VAL:HG12  | 1.85                     | 0.75              |
| 7:CA:7:G:H5'      | 7:CA:7:G:C8       | 2.21                     | 0.75              |
| 7:CA:48:U:H4'     | 7:CA:48:U:OP1     | 1.86                     | 0.75              |
| 8:CB:32:C:N4      | 8:CB:473:G:H1     | 1.84                     | 0.75              |
| 8:CB:257:C:H2'    | 8:CB:258:G:O4'    | 1.85                     | 0.75              |
| 8:CB:582:A:OP1    | 23:CQ:31:TYR:CE2  | 2.38                     | 0.75              |
| 8:CB:927:A:H2'    | 8:CB:928:A:H8     | 1.49                     | 0.75              |
| 8:CB:1804:C:OP1   | 9:CC:254:LYS:HG2  | 1.86                     | 0.75              |
| 8:CB:2455:G:C2    | 8:CB:2498:C:N4    | 2.54                     | 0.75              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:CQ:69:ARG:HB2   | 23:CQ:69:ARG:NH1   | 2.01                     | 0.75              |
| 24:CR:4:VAL:HG12   | 24:CR:43:ASN:CB    | 2.17                     | 0.75              |
| 33:DA:453:G:H2'    | 33:DA:454:G:C8     | 2.20                     | 0.75              |
| 33:DA:727:G:N2     | 33:DA:731:G:C4     | 2.54                     | 0.75              |
| 35:DC:190:THR:HG22 | 35:DC:191:THR:H    | 1.51                     | 0.75              |
| 36:DD:117:VAL:HA   | 36:DD:122:ILE:HG13 | 1.68                     | 0.75              |
| 37:DE:61:LYS:HA    | 37:DE:64:GLU:HB3   | 1.68                     | 0.75              |
| 4:A3:34:LYS:NZ     | 8:AB:2420:C:OP1    | 2.18                     | 0.75              |
| 8:AB:351:C:H2'     | 8:AB:352:A:C8      | 2.15                     | 0.75              |
| 8:AB:396:G:C4'     | 32:AZ:28:VAL:HG21  | 2.16                     | 0.75              |
| 8:AB:2341:G:H2'    | 8:AB:2342:C:C6     | 2.21                     | 0.75              |
| 8:AB:2521:C:H6     | 8:AB:2521:C:H5'    | 1.52                     | 0.75              |
| 9:AC:216:ARG:HB3   | 9:AC:217:PRO:HD3   | 1.67                     | 0.75              |
| 16:AJ:135:GLN:HG2  | 16:AJ:137:PRO:CG   | 2.17                     | 0.75              |
| 23:AQ:40:LYS:O     | 23:AQ:41:ALA:C     | 2.25                     | 0.75              |
| 33:BA:692:U:O2     | 33:BA:694:A:C8     | 2.40                     | 0.75              |
| 33:BA:977:A:H8     | 33:BA:977:A:H3'    | 1.52                     | 0.75              |
| 33:BA:1221:G:O3'   | 51:BS:76:THR:HG21  | 1.86                     | 0.75              |
| 4:C3:54:LEU:C      | 4:C3:56:LEU:H      | 1.89                     | 0.75              |
| 8:CB:529:A:C8      | 8:CB:2023:C:N4     | 2.54                     | 0.75              |
| 8:CB:2739:U:H3'    | 8:CB:2739:U:C6     | 2.21                     | 0.75              |
| 33:DA:202:G:HO2'   | 33:DA:468:A:H8     | 0.77                     | 0.75              |
| 33:DA:227:G:H2'    | 33:DA:228:A:C8     | 2.20                     | 0.75              |
| 33:DA:894:G:N3     | 33:DA:895:G:C8     | 2.54                     | 0.75              |
| 33:DA:1278:G:H3'   | 33:DA:1279:G:H5'   | 1.68                     | 0.75              |
| 33:DA:1425:U:C6    | 33:DA:1425:U:H3'   | 2.22                     | 0.75              |
| 39:DG:14:ASP:HA    | 39:DG:23:ALA:HB2   | 1.69                     | 0.75              |
| 40:DH:54:THR:C     | 40:DH:56:PRO:HD3   | 2.06                     | 0.75              |
| 5:A4:11:CYS:SG     | 5:A4:33:HIS:CE1    | 2.79                     | 0.75              |
| 7:AA:113:C:H4'     | 21:AO:47:VAL:HG12  | 1.68                     | 0.75              |
| 8:AB:264:C:C2'     | 8:AB:265:A:H5''    | 2.17                     | 0.75              |
| 8:AB:1126:A:H5'    | 8:AB:1126:A:C8     | 2.22                     | 0.75              |
| 8:AB:1392:A:N6     | 26:AT:18:GLU:HG3   | 2.01                     | 0.75              |
| 8:AB:2089:C:H2'    | 8:AB:2090:A:C8     | 2.21                     | 0.75              |
| 8:AB:2092:U:H4'    | 8:AB:2093:G:O5'    | 1.85                     | 0.75              |
| 8:AB:2393:U:O5'    | 18:AL:62:PRO:HG3   | 1.85                     | 0.75              |
| 25:AS:17:VAL:HG23  | 25:AS:76:VAL:HG11  | 1.69                     | 0.75              |
| 27:AU:3:LYS:O      | 27:AU:4:ILE:HG12   | 1.85                     | 0.75              |
| 33:BA:350:G:H8     | 33:BA:350:G:H5'    | 1.50                     | 0.75              |
| 33:BA:820:U:H4'    | 33:BA:821:G:OP2    | 1.86                     | 0.75              |
| 36:BD:10:LEU:HD21  | 36:BD:62:ARG:HD3   | 1.67                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:BQ:66:LEU:HD12 | 49:BQ:70:LYS:HE2   | 1.69                     | 0.75              |
| 8:CB:468:G:H2'    | 8:CB:469:G:C8      | 2.21                     | 0.75              |
| 8:CB:616:A:H2'    | 8:CB:617:G:C8      | 2.21                     | 0.75              |
| 8:CB:1327:A:C2    | 8:CB:1328:A:H1'    | 2.21                     | 0.75              |
| 8:CB:1806:C:H6    | 8:CB:1806:C:H3'    | 1.50                     | 0.75              |
| 8:CB:1816:C:H6    | 9:CC:62:ARG:NH1    | 1.83                     | 0.75              |
| 8:CB:1875:G:HO2'  | 8:CB:1876:A:H8     | 1.34                     | 0.75              |
| 8:CB:2031:A:C6    | 8:CB:2498:C:H1'    | 2.21                     | 0.75              |
| 8:CB:2230:G:C4    | 8:CB:2231:U:C5     | 2.75                     | 0.75              |
| 8:CB:2511:U:O2    | 10:CD:144:GLY:HA3  | 1.84                     | 0.75              |
| 9:CC:114:GLN:O    | 9:CC:115:ILE:HD12  | 1.86                     | 0.75              |
| 10:CD:174:SER:HB2 | 10:CD:208:LYS:HG3  | 1.69                     | 0.75              |
| 10:CD:174:SER:HB2 | 10:CD:208:LYS:CG   | 2.17                     | 0.75              |
| 11:CE:15:SER:HB3  | 11:CE:196:VAL:HG22 | 1.69                     | 0.75              |
| 17:CK:32:TYR:CD1  | 17:CK:32:TYR:N     | 2.51                     | 0.75              |
| 19:CM:61:GLY:HA3  | 19:CM:105:MET:HB2  | 1.67                     | 0.75              |
| 23:CQ:87:VAL:O    | 24:CR:53:PHE:HB3   | 1.85                     | 0.75              |
| 33:DA:350:G:H8    | 33:DA:350:G:C5'    | 2.00                     | 0.75              |
| 33:DA:488:C:C2    | 33:DA:489:C:C5     | 2.74                     | 0.75              |
| 39:DG:77:ARG:HG3  | 39:DG:86:VAL:HG21  | 1.67                     | 0.75              |
| 48:DP:68:SER:HB3  | 48:DP:71:VAL:HG13  | 1.69                     | 0.75              |
| 53:DU:16:ARG:HB3  | 53:DU:20:ARG:CZ    | 2.16                     | 0.75              |
| 8:AB:688:U:H6     | 8:AB:688:U:H3'     | 1.52                     | 0.75              |
| 8:AB:869:G:C2     | 8:AB:870:U:H1'     | 2.21                     | 0.75              |
| 8:AB:1415:U:H1'   | 8:AB:1588:G:N2     | 2.01                     | 0.75              |
| 8:AB:2593:U:H2'   | 8:AB:2594:C:H5''   | 1.67                     | 0.75              |
| 8:AB:2691:C:O2    | 8:AB:2872:A:N6     | 2.20                     | 0.75              |
| 9:AC:205:GLY:O    | 9:AC:206:LYS:HE2   | 1.86                     | 0.75              |
| 19:AM:97:GLN:H    | 19:AM:98:PRO:HD3   | 1.52                     | 0.75              |
| 20:AN:25:ALA:HB2  | 20:AN:44:LEU:CD1   | 2.15                     | 0.75              |
| 33:BA:1313:U:H2'  | 33:BA:1314:C:H5'   | 1.68                     | 0.75              |
| 33:BA:1314:C:H5   | 51:BS:5:LYS:HD3    | 1.50                     | 0.75              |
| 36:BD:2:ARG:HG3   | 36:BD:114:ARG:NH2  | 2.02                     | 0.75              |
| 36:BD:25:ARG:HD3  | 36:BD:26:ALA:H     | 1.50                     | 0.75              |
| 1:C0:20:ALA:C     | 1:C0:21:LEU:HD12   | 2.07                     | 0.75              |
| 7:CA:109:A:H2'    | 7:CA:110:C:O4'     | 1.85                     | 0.75              |
| 8:CB:221:A:C8     | 8:CB:266:G:N7      | 2.55                     | 0.75              |
| 8:CB:496:G:H5''   | 8:CB:496:G:H8      | 1.51                     | 0.75              |
| 8:CB:2498:C:O2'   | 8:CB:2499:C:H5'    | 1.87                     | 0.75              |
| 9:CC:257:ARG:HG3  | 9:CC:257:ARG:NH1   | 1.99                     | 0.75              |
| 10:CD:137:SER:O   | 10:CD:138:LEU:HB2  | 1.87                     | 0.75              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:CH:50:ARG:HG3  | 14:CH:51:ARG:H    | 1.52                     | 0.75              |
| 24:CR:12:HIS:CD2  | 24:CR:14:VAL:O    | 2.40                     | 0.75              |
| 30:CX:17:GLU:O    | 30:CX:22:LEU:HG   | 1.87                     | 0.75              |
| 33:DA:456:A:C8    | 33:DA:456:A:H3'   | 2.21                     | 0.75              |
| 33:DA:977:A:H2'   | 33:DA:978:A:H5''  | 1.68                     | 0.75              |
| 33:DA:1068:G:H1'  | 33:DA:1191:A:C2   | 2.21                     | 0.75              |
| 33:DA:1258:G:H1   | 33:DA:1278:G:N2   | 1.83                     | 0.75              |
| 33:DA:1338:G:H2'  | 33:DA:1339:A:N7   | 2.01                     | 0.75              |
| 33:DA:1480:A:H2'  | 33:DA:1481:U:O4'  | 1.86                     | 0.75              |
| 43:DK:66:ALA:O    | 43:DK:69:CYS:HB3  | 1.86                     | 0.75              |
| 8:AB:200:U:H5''   | 32:AZ:20:ASN:HB3  | 1.68                     | 0.75              |
| 9:AC:12:ARG:NH1   | 9:AC:18:VAL:HG11  | 2.01                     | 0.75              |
| 19:AM:16:ARG:O    | 19:AM:17:ASN:HB2  | 1.85                     | 0.75              |
| 22:AP:27:VAL:HB   | 22:AP:86:LYS:O    | 1.86                     | 0.75              |
| 25:AS:90:LYS:CA   | 25:AS:90:LYS:HE3  | 2.15                     | 0.75              |
| 33:BA:679:C:N3    | 33:BA:712:A:C2    | 2.55                     | 0.75              |
| 33:BA:1169:A:H2'  | 33:BA:1170:A:C8   | 2.22                     | 0.75              |
| 46:BN:66:THR:HB   | 46:BN:82:LYS:HD2  | 1.68                     | 0.75              |
| 8:CB:19:A:H2'     | 8:CB:20:C:C6      | 2.21                     | 0.75              |
| 8:CB:1190:G:OP1   | 18:CL:38:GLN:HB2  | 1.86                     | 0.75              |
| 8:CB:1604:C:O2'   | 8:CB:1610:A:N6    | 2.20                     | 0.75              |
| 8:CB:1960:A:C5    | 8:CB:1961:C:C5    | 2.75                     | 0.75              |
| 8:CB:2303:G:C1'   | 12:CF:122:ASP:HA  | 2.16                     | 0.75              |
| 8:CB:2593:U:H2'   | 8:CB:2594:C:H5''  | 1.68                     | 0.75              |
| 9:CC:12:ARG:NH1   | 9:CC:18:VAL:HG11  | 2.02                     | 0.75              |
| 10:CD:13:ARG:NH2  | 22:CP:12:MET:SD   | 2.59                     | 0.75              |
| 13:CG:97:VAL:HG21 | 13:CG:124:CYS:N   | 2.00                     | 0.75              |
| 21:CO:10:ARG:CG   | 21:CO:96:GLY:HA2  | 2.17                     | 0.75              |
| 24:CR:80:ARG:HG3  | 24:CR:85:LYS:HA   | 1.68                     | 0.75              |
| 29:CW:36:ILE:HG23 | 29:CW:68:PHE:HD1  | 1.50                     | 0.75              |
| 32:CZ:50:ASP:HA   | 32:CZ:53:THR:HG22 | 1.68                     | 0.75              |
| 33:DA:15:G:N3     | 33:DA:16:A:C8     | 2.54                     | 0.75              |
| 48:DP:50:THR:CG2  | 48:DP:52:LEU:HD11 | 2.16                     | 0.75              |
| 49:DQ:30:HIS:HE1  | 49:DQ:32:ILE:HG22 | 1.50                     | 0.75              |
| 8:AB:376:G:H2'    | 8:AB:377:G:C8     | 2.22                     | 0.75              |
| 8:AB:378:C:H2'    | 8:AB:379:G:H5'    | 1.69                     | 0.75              |
| 8:AB:532:A:N7     | 8:AB:2021:C:O2'   | 2.18                     | 0.75              |
| 8:AB:1042:G:N2    | 8:AB:1114:C:O2    | 2.20                     | 0.75              |
| 8:AB:2621:G:O2'   | 10:AD:164:GLN:HB3 | 1.86                     | 0.75              |
| 8:AB:2853:C:H2'   | 8:AB:2854:G:C8    | 2.22                     | 0.75              |
| 11:AE:6:LYS:HZ1   | 11:AE:119:ILE:C   | 1.90                     | 0.75              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:AH:4:ILE:HG23  | 14:AH:16:GLY:CA   | 2.17                     | 0.75              |
| 16:AJ:34:ARG:CG   | 16:AJ:39:LYS:HB2  | 2.17                     | 0.75              |
| 18:AL:77:ILE:CG2  | 18:AL:110:VAL:HA  | 2.17                     | 0.75              |
| 21:AO:1:MET:HG2   | 21:AO:2:ASP:N     | 1.98                     | 0.75              |
| 24:AR:23:GLU:HA   | 24:AR:96:VAL:CG2  | 2.17                     | 0.75              |
| 33:BA:947:G:OP1   | 45:BM:106:ARG:HB3 | 1.87                     | 0.75              |
| 33:BA:1225:A:H3'  | 33:BA:1226:C:C6   | 2.21                     | 0.75              |
| 33:BA:1320:C:H42  | 51:BS:35:ARG:HH12 | 1.33                     | 0.75              |
| 33:BA:1438:G:N2   | 33:BA:1464:U:H1'  | 2.02                     | 0.75              |
| 37:BE:89:THR:HG22 | 37:BE:90:GLY:N    | 2.02                     | 0.75              |
| 41:BI:38:PHE:HE1  | 41:BI:75:ALA:HB2  | 1.52                     | 0.75              |
| 41:BI:82:ILE:HG22 | 41:BI:86:LEU:HD22 | 1.68                     | 0.75              |
| 45:BM:106:ARG:NH1 | 45:BM:109:LYS:HE2 | 2.01                     | 0.75              |
| 47:BO:8:ALA:O     | 47:BO:11:VAL:HG12 | 1.87                     | 0.75              |
| 51:BS:68:HIS:CD2  | 51:BS:69:LYS:H    | 2.04                     | 0.75              |
| 8:CB:725:G:C6     | 8:CB:726:G:N1     | 2.55                     | 0.75              |
| 8:CB:1570:A:H2'   | 8:CB:1571:A:H8    | 1.51                     | 0.75              |
| 8:CB:1933:G:H8    | 8:CB:1933:G:O5'   | 1.69                     | 0.75              |
| 8:CB:2273:A:H2'   | 8:CB:2274:A:C8    | 2.21                     | 0.75              |
| 8:CB:2717:C:H1'   | 22:CP:95:LYS:HZ3  | 1.51                     | 0.75              |
| 24:CR:18:GLN:HB3  | 24:CR:99:THR:CA   | 2.16                     | 0.75              |
| 24:CR:97:LYS:O    | 24:CR:98:ILE:HB   | 1.84                     | 0.75              |
| 33:DA:728:A:H2'   | 33:DA:729:A:C8    | 2.22                     | 0.75              |
| 34:DB:65:LYS:HB2  | 34:DB:157:PRO:HA  | 1.68                     | 0.75              |
| 44:DL:43:LYS:HB2  | 44:DL:44:PRO:HD3  | 1.69                     | 0.75              |
| 45:DM:56:ARG:O    | 45:DM:60:ALA:HB2  | 1.86                     | 0.75              |
| 48:DP:80:LYS:HB2  | 48:DP:80:LYS:NZ   | 2.02                     | 0.75              |
| 2:A1:47:ILE:HG22  | 2:A1:48:TYR:N     | 1.97                     | 0.75              |
| 8:AB:65:U:H2'     | 8:AB:66:C:C6      | 2.21                     | 0.75              |
| 8:AB:597:G:C2     | 8:AB:661:A:C2     | 2.75                     | 0.75              |
| 8:AB:2155:U:H2'   | 8:AB:2156:G:O4'   | 1.86                     | 0.75              |
| 8:AB:2371:G:C2    | 8:AB:2372:U:C6    | 2.74                     | 0.75              |
| 10:AD:29:VAL:O    | 10:AD:51:THR:HG21 | 1.86                     | 0.75              |
| 10:AD:62:LYS:CE   | 10:AD:63:PRO:HD3  | 2.08                     | 0.75              |
| 14:AH:89:LYS:HG2  | 14:AH:123:ARG:O   | 1.87                     | 0.75              |
| 19:AM:2:LEU:HD23  | 19:AM:50:ARG:HD3  | 1.67                     | 0.75              |
| 33:BA:506:G:H2'   | 33:BA:507:C:C6    | 2.21                     | 0.75              |
| 33:BA:802:A:H2'   | 33:BA:803:G:H5'   | 1.69                     | 0.75              |
| 33:BA:948:C:H2'   | 33:BA:949:A:H8    | 1.52                     | 0.75              |
| 35:BC:69:THR:HG23 | 35:BC:72:PRO:HG3  | 1.68                     | 0.75              |
| 36:BD:94:GLU:HG3  | 36:BD:103:ARG:NH2 | 2.02                     | 0.75              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:C4:7:VAL:O      | 5:C4:23:ILE:HD12   | 1.87                     | 0.75              |
| 7:CA:56:G:H5'     | 7:CA:56:G:H8       | 1.52                     | 0.75              |
| 8:CB:63:A:H5''    | 26:CT:69:ARG:HH22  | 1.52                     | 0.75              |
| 8:CB:85:G:N3      | 8:CB:103:A:C2      | 2.54                     | 0.75              |
| 8:CB:292:U:O5'    | 8:CB:292:U:H6      | 1.70                     | 0.75              |
| 8:CB:1988:G:H2'   | 8:CB:1989:G:H5'    | 1.68                     | 0.75              |
| 8:CB:2618:G:C5    | 8:CB:2619:C:C5     | 2.75                     | 0.75              |
| 10:CD:31:ALA:HB3  | 10:CD:95:SER:HB3   | 1.65                     | 0.75              |
| 23:CQ:30:VAL:HG21 | 23:CQ:33:VAL:CG2   | 2.17                     | 0.75              |
| 29:CW:2:HIS:O     | 29:CW:3:LYS:HE2    | 1.87                     | 0.75              |
| 32:CZ:17:SER:OG   | 32:CZ:21:VAL:HB    | 1.86                     | 0.75              |
| 33:DA:975:A:C2    | 33:DA:1357:A:H2    | 2.05                     | 0.75              |
| 33:DA:1295:U:N3   | 33:DA:1296:C:H5    | 1.84                     | 0.75              |
| 8:AB:725:G:C6     | 8:AB:726:G:N1      | 2.56                     | 0.74              |
| 8:AB:1564:C:H2'   | 8:AB:1565:C:C6     | 2.22                     | 0.74              |
| 8:AB:1613:G:C2'   | 8:AB:1617:C:H42    | 1.97                     | 0.74              |
| 8:AB:1816:C:H5    | 9:AC:62:ARG:HD2    | 1.51                     | 0.74              |
| 8:AB:2086:U:N3    | 8:AB:2234:G:C6     | 2.55                     | 0.74              |
| 8:AB:2592:G:C6    | 8:AB:2593:U:N3     | 2.55                     | 0.74              |
| 8:AB:2866:U:H4'   | 8:AB:2867:G:H4'    | 1.66                     | 0.74              |
| 22:AP:73:PHE:O    | 22:AP:74:GLN:NE2   | 2.20                     | 0.74              |
| 24:AR:98:ILE:HG22 | 24:AR:100:GLY:H    | 1.50                     | 0.74              |
| 33:BA:878:A:C5    | 33:BA:879:C:C5     | 2.75                     | 0.74              |
| 41:BI:32:ARG:HD3  | 41:BI:37:TYR:CD1   | 2.21                     | 0.74              |
| 51:BS:35:ARG:HB3  | 51:BS:71:GLY:CA    | 2.17                     | 0.74              |
| 3:C2:5:PHE:HE2    | 3:C2:7:PRO:CB      | 1.97                     | 0.74              |
| 3:C2:16:HIS:O     | 3:C2:44:VAL:HG12   | 1.87                     | 0.74              |
| 8:CB:440:C:H6     | 8:CB:440:C:H3'     | 1.52                     | 0.74              |
| 8:CB:530:G:H22    | 8:CB:2023:C:H5     | 1.32                     | 0.74              |
| 8:CB:2071:A:H2'   | 8:CB:2072:C:C6     | 2.22                     | 0.74              |
| 8:CB:2230:G:H1'   | 32:CZ:30:HIS:CE1   | 2.21                     | 0.74              |
| 8:CB:2850:A:O2'   | 8:CB:2851:A:H5'    | 1.87                     | 0.74              |
| 9:CC:12:ARG:NH1   | 9:CC:18:VAL:HG21   | 2.02                     | 0.74              |
| 9:CC:169:ALA:O    | 9:CC:170:TYR:HB2   | 1.83                     | 0.74              |
| 11:CE:29:HIS:HD2  | 18:CL:19:LEU:CD1   | 2.00                     | 0.74              |
| 16:CJ:10:THR:CG2  | 16:CJ:50:THR:HB    | 2.14                     | 0.74              |
| 17:CK:82:ASN:H    | 17:CK:82:ASN:HD22  | 1.33                     | 0.74              |
| 18:CL:90:VAL:HG13 | 18:CL:122:VAL:HG13 | 1.69                     | 0.74              |
| 19:CM:6:ARG:HD2   | 19:CM:71:LYS:HZ1   | 1.51                     | 0.74              |
| 20:CN:7:GLY:HA3   | 20:CN:8:ARG:HH11   | 1.52                     | 0.74              |
| 22:CP:13:LYS:CD   | 22:CP:78:PRO:HG3   | 2.16                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:725:G:C5    | 33:DA:726:C:H5     | 2.04                     | 0.74              |
| 33:DA:794:A:H2'   | 33:DA:795:C:C6     | 2.22                     | 0.74              |
| 33:DA:804:U:C5    | 33:DA:805:C:N4     | 2.54                     | 0.74              |
| 33:DA:948:C:OP1   | 45:DM:107:THR:HG22 | 1.87                     | 0.74              |
| 33:DA:1474:U:C2'  | 33:DA:1475:G:H5''  | 2.13                     | 0.74              |
| 1:A0:5:ASN:ND2    | 8:AB:2019:A:N6     | 2.34                     | 0.74              |
| 8:AB:831:G:C6     | 8:AB:832:U:C2      | 2.75                     | 0.74              |
| 8:AB:1122:G:H2'   | 8:AB:1123:C:C5'    | 2.17                     | 0.74              |
| 8:AB:1247:A:O2'   | 8:AB:1248:G:H5''   | 1.86                     | 0.74              |
| 8:AB:1432:G:O2'   | 8:AB:1433:A:H5'    | 1.86                     | 0.74              |
| 8:AB:1824:G:H1'   | 9:AC:247:TRP:HZ3   | 1.52                     | 0.74              |
| 8:AB:2872:A:O2'   | 8:AB:2873:A:H5''   | 1.85                     | 0.74              |
| 10:AD:10:GLY:HA2  | 10:AD:24:VAL:HA    | 1.69                     | 0.74              |
| 18:AL:47:ARG:HG3  | 18:AL:47:ARG:O     | 1.87                     | 0.74              |
| 22:AP:29:VAL:O    | 22:AP:31:VAL:HG23  | 1.87                     | 0.74              |
| 32:AZ:9:TYR:CE1   | 32:AZ:11:GLU:HB2   | 2.21                     | 0.74              |
| 33:BA:94:G:H5'    | 33:BA:94:G:C8      | 2.22                     | 0.74              |
| 33:BA:688:G:C6    | 33:BA:700:G:C2     | 2.75                     | 0.74              |
| 34:BB:65:LYS:HB3  | 34:BB:89:PHE:CE1   | 2.22                     | 0.74              |
| 35:BC:90:VAL:HG21 | 35:BC:98:ALA:HB3   | 1.69                     | 0.74              |
| 7:CA:42:C:H2'     | 7:CA:42:C:O2       | 1.86                     | 0.74              |
| 8:CB:64:A:O2'     | 26:CT:74:ILE:HG21  | 1.86                     | 0.74              |
| 8:CB:508:A:C2     | 25:CS:9:HIS:NE2    | 2.55                     | 0.74              |
| 8:CB:2331:G:C2'   | 29:CW:69:GLU:HG3   | 2.16                     | 0.74              |
| 9:CC:12:ARG:HH12  | 9:CC:18:VAL:HG11   | 1.53                     | 0.74              |
| 9:CC:124:LYS:HB2  | 9:CC:125:PRO:CD    | 2.17                     | 0.74              |
| 9:CC:244:VAL:HG22 | 9:CC:245:THR:N     | 2.01                     | 0.74              |
| 10:CD:42:ASN:HD22 | 10:CD:43:ASP:N     | 1.85                     | 0.74              |
| 12:CF:106:ALA:HB1 | 12:CF:136:ILE:HG23 | 1.66                     | 0.74              |
| 16:CJ:38:GLY:CA   | 16:CJ:41:LYS:HE3   | 2.18                     | 0.74              |
| 19:CM:40:ARG:HG3  | 19:CM:92:TRP:NE1   | 2.00                     | 0.74              |
| 33:DA:386:C:C2'   | 33:DA:387:U:H5''   | 2.16                     | 0.74              |
| 33:DA:663:A:C2    | 33:DA:743:A:C2     | 2.74                     | 0.74              |
| 33:DA:1382:C:H2'  | 33:DA:1383:C:H6    | 1.52                     | 0.74              |
| 38:DF:92:THR:C    | 38:DF:94:HIS:H     | 1.90                     | 0.74              |
| 8:AB:257:C:H2'    | 8:AB:258:G:O4'     | 1.86                     | 0.74              |
| 8:AB:1007:C:H4'   | 16:AJ:110:PRO:HD3  | 1.68                     | 0.74              |
| 8:AB:1139:G:H5''  | 8:AB:1139:G:C8     | 2.22                     | 0.74              |
| 8:AB:1429:G:H5'   | 8:AB:1429:G:C8     | 2.22                     | 0.74              |
| 8:AB:1816:C:H3'   | 9:AC:62:ARG:NH1    | 2.03                     | 0.74              |
| 9:AC:114:GLN:O    | 9:AC:115:ILE:HD12  | 1.87                     | 0.74              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:AE:145:ASP:O    | 11:AE:147:LEU:N   | 2.20                     | 0.74              |
| 15:AI:33:ASN:HD21  | 15:AI:64:ARG:HD2  | 1.53                     | 0.74              |
| 18:AL:117:THR:HG23 | 18:AL:119:PRO:HD2 | 1.69                     | 0.74              |
| 19:AM:71:LYS:NZ    | 19:AM:91:TYR:HB3  | 2.03                     | 0.74              |
| 33:BA:38:G:C2      | 33:BA:397:A:C2    | 2.76                     | 0.74              |
| 33:BA:737:C:O5'    | 33:BA:737:C:H6    | 1.69                     | 0.74              |
| 51:BS:10:ILE:HG22  | 51:BS:38:THR:H    | 1.53                     | 0.74              |
| 8:CB:1430:G:H2'    | 8:CB:1431:A:H8    | 1.51                     | 0.74              |
| 8:CB:1562:U:H2'    | 8:CB:1563:U:H6    | 1.52                     | 0.74              |
| 8:CB:1570:A:C6     | 8:CB:1571:A:C6    | 2.76                     | 0.74              |
| 8:CB:2746:U:H2'    | 8:CB:2747:G:H8    | 1.52                     | 0.74              |
| 10:CD:141:ARG:O    | 10:CD:142:VAL:O   | 2.04                     | 0.74              |
| 16:CJ:36:LEU:HD11  | 16:CJ:122:LEU:HG  | 1.69                     | 0.74              |
| 18:CL:92:LEU:HD22  | 18:CL:96:LYS:HG2  | 1.68                     | 0.74              |
| 32:CZ:49:ARG:HG2   | 32:CZ:50:ASP:N    | 2.02                     | 0.74              |
| 33:DA:243:A:H5''   | 33:DA:243:A:H8    | 1.51                     | 0.74              |
| 33:DA:976:G:H22    | 33:DA:1362:A:H3'  | 1.52                     | 0.74              |
| 34:DB:46:VAL:HA    | 34:DB:49:PHE:CE2  | 2.23                     | 0.74              |
| 35:DC:17:TRP:CE3   | 46:DN:93:PRO:HA   | 2.21                     | 0.74              |
| 39:DG:70:PRO:HG3   | 39:DG:102:TRP:HH2 | 1.52                     | 0.74              |
| 41:DI:11:ARG:HG3   | 41:DI:11:ARG:NH1  | 2.02                     | 0.74              |
| 8:AB:319:G:C4      | 8:AB:320:A:C8     | 2.75                     | 0.74              |
| 8:AB:794:A:H2'     | 8:AB:795:C:H6     | 1.51                     | 0.74              |
| 8:AB:1069:A:H5'    | 8:AB:1070:A:C8    | 2.23                     | 0.74              |
| 8:AB:1163:G:H21    | 24:AR:91:GLN:HG3  | 1.52                     | 0.74              |
| 8:AB:2221:G:O2'    | 8:AB:2222:C:H5'   | 1.87                     | 0.74              |
| 8:AB:2615:U:OP1    | 55:AB:4685:HOH:O  | 2.05                     | 0.74              |
| 19:AM:18:ARG:HG2   | 19:AM:19:GLY:H    | 1.48                     | 0.74              |
| 33:BA:702:A:H4'    | 33:BA:703:G:OP2   | 1.87                     | 0.74              |
| 33:BA:783:C:H2'    | 33:BA:784:A:C8    | 2.23                     | 0.74              |
| 46:BN:63:CYS:SG    | 46:BN:66:THR:HG22 | 2.28                     | 0.74              |
| 49:BQ:71:SER:C     | 49:BQ:72:TRP:HD1  | 1.90                     | 0.74              |
| 53:BU:36:PHE:CB    | 53:BU:40:PRO:HD3  | 2.14                     | 0.74              |
| 8:CB:393:C:C2      | 8:CB:394:C:C5     | 2.75                     | 0.74              |
| 8:CB:1050:A:C2     | 8:CB:2751:G:C6    | 2.76                     | 0.74              |
| 8:CB:2640:G:C2'    | 8:CB:2641:G:H5''  | 2.17                     | 0.74              |
| 8:CB:2746:U:C2'    | 8:CB:2747:G:H5'   | 2.17                     | 0.74              |
| 13:CG:10:VAL:HA    | 13:CG:14:VAL:HG21 | 1.69                     | 0.74              |
| 15:CI:77:VAL:HA    | 15:CI:80:LYS:HB2  | 1.68                     | 0.74              |
| 33:DA:922:G:H2'    | 33:DA:923:A:H8    | 1.49                     | 0.74              |
| 33:DA:953:G:H3'    | 33:DA:954:G:C8    | 2.22                     | 0.74              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:DN:5:MET:HA     | 46:DN:8:ARG:HB2   | 1.69                     | 0.74              |
| 8:AB:272:A:H2      | 8:AB:366:C:N3     | 1.86                     | 0.74              |
| 8:AB:772:C:H2'     | 8:AB:773:U:H6     | 1.51                     | 0.74              |
| 8:AB:1527:G:H21    | 8:AB:1545:A:H62   | 1.36                     | 0.74              |
| 8:AB:2860:A:H8     | 8:AB:2860:A:H5'   | 1.52                     | 0.74              |
| 11:AE:46:GLN:HE22  | 11:AE:47:LYS:HG3  | 1.52                     | 0.74              |
| 18:AL:78:ARG:NH1   | 18:AL:80:SER:HA   | 2.02                     | 0.74              |
| 21:AO:9:ARG:HA     | 21:AO:12:THR:HG21 | 1.69                     | 0.74              |
| 33:BA:61:G:H2'     | 33:BA:62:U:O4'    | 1.87                     | 0.74              |
| 33:BA:1163:A:H2'   | 33:BA:1164:G:C8   | 2.22                     | 0.74              |
| 33:BA:1434:A:O2'   | 33:BA:1435:G:H5'  | 1.86                     | 0.74              |
| 40:BH:105:THR:HG22 | 40:BH:122:GLY:CA  | 2.16                     | 0.74              |
| 4:C3:54:LEU:HA     | 4:C3:57:VAL:HG13  | 1.68                     | 0.74              |
| 8:CB:1225:G:H5''   | 24:CR:90:ARG:NE   | 2.02                     | 0.74              |
| 9:CC:63:ILE:C      | 9:CC:64:VAL:HG22  | 2.08                     | 0.74              |
| 11:CE:131:THR:C    | 11:CE:132:LYS:HZ3 | 1.91                     | 0.74              |
| 21:CO:27:VAL:HG21  | 21:CO:38:GLN:N    | 2.03                     | 0.74              |
| 27:CU:79:ALA:O     | 27:CU:96:LYS:HB2  | 1.87                     | 0.74              |
| 33:DA:1154:G:C2    | 33:DA:1155:A:C8   | 2.74                     | 0.74              |
| 33:DA:1258:G:N1    | 33:DA:1278:G:N2   | 2.35                     | 0.74              |
| 33:DA:1329:A:OP1   | 45:DM:28:ARG:HG3  | 1.86                     | 0.74              |
| 33:DA:1443:C:H2'   | 33:DA:1444:U:O4'  | 1.85                     | 0.74              |
| 36:DD:84:ASN:ND2   | 36:DD:87:GLU:HB2  | 2.03                     | 0.74              |
| 47:DO:32:THR:HA    | 47:DO:62:ARG:HH11 | 1.50                     | 0.74              |
| 8:AB:811:U:C5      | 18:AL:29:LYS:HD3  | 2.23                     | 0.74              |
| 8:AB:968:C:C4      | 8:AB:969:G:N7     | 2.56                     | 0.74              |
| 8:AB:1063:G:H1     | 8:AB:1075:C:H42   | 1.36                     | 0.74              |
| 8:AB:1376:C:H2'    | 8:AB:1376:C:O2    | 1.87                     | 0.74              |
| 8:AB:2329:U:H2'    | 8:AB:2330:G:O4'   | 1.87                     | 0.74              |
| 8:AB:2777:G:H3'    | 8:AB:2777:G:H8    | 1.52                     | 0.74              |
| 10:AD:102:ALA:HB3  | 10:AD:105:LYS:NZ  | 2.02                     | 0.74              |
| 17:AK:82:ASN:H     | 17:AK:82:ASN:HD22 | 1.30                     | 0.74              |
| 19:AM:31:PHE:CE2   | 19:AM:113:ALA:HB3 | 2.21                     | 0.74              |
| 21:AO:6:ALA:CA     | 21:AO:10:ARG:HD3  | 2.17                     | 0.74              |
| 25:AS:29:VAL:HG21  | 25:AS:69:LEU:HB2  | 1.67                     | 0.74              |
| 27:AU:72:PHE:HA    | 27:AU:96:LYS:HZ1  | 1.50                     | 0.74              |
| 33:BA:349:A:H2'    | 33:BA:350:G:H5''  | 1.70                     | 0.74              |
| 33:BA:553:A:C2'    | 33:BA:554:A:H8    | 1.92                     | 0.74              |
| 33:BA:1206:G:H4'   | 35:BC:191:THR:O   | 1.87                     | 0.74              |
| 33:BA:1212:U:H4'   | 33:BA:1213:A:C8   | 2.23                     | 0.74              |
| 33:BA:1238:A:H8    | 33:BA:1301:U:H3   | 1.36                     | 0.74              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:BL:24:GLU:HB3   | 44:BL:26:CYS:SG    | 2.28                     | 0.74              |
| 8:CB:220:G:H2'     | 8:CB:427:U:O4      | 1.87                     | 0.74              |
| 8:CB:538:A:C8      | 8:CB:556:A:N6      | 2.56                     | 0.74              |
| 8:CB:968:C:C4      | 8:CB:969:G:N7      | 2.56                     | 0.74              |
| 8:CB:1342:A:O2'    | 8:CB:1343:G:H5''   | 1.87                     | 0.74              |
| 8:CB:2371:G:C2     | 8:CB:2372:U:C6     | 2.76                     | 0.74              |
| 8:CB:2498:C:H2'    | 8:CB:2498:C:O2     | 1.86                     | 0.74              |
| 10:CD:77:ARG:NH2   | 10:CD:79:LEU:HB2   | 2.02                     | 0.74              |
| 11:CE:98:LYS:HE3   | 11:CE:102:ARG:HH21 | 1.51                     | 0.74              |
| 17:CK:2:ILE:HG23   | 17:CK:33:ALA:O     | 1.86                     | 0.74              |
| 20:CN:4:ARG:HG2    | 20:CN:5:LYS:O      | 1.87                     | 0.74              |
| 25:CS:21:ALA:O     | 25:CS:74:ILE:HD12  | 1.87                     | 0.74              |
| 33:DA:550:G:O2'    | 33:DA:551:U:H5'    | 1.88                     | 0.74              |
| 33:DA:731:G:N2     | 33:DA:732:C:C2     | 2.56                     | 0.74              |
| 33:DA:812:G:OP2    | 33:DA:902:G:N2     | 2.20                     | 0.74              |
| 33:DA:1434:A:N7    | 33:DA:1435:G:N7    | 2.35                     | 0.74              |
| 8:AB:533:G:OP1     | 23:AQ:23:TYR:O     | 2.05                     | 0.74              |
| 8:AB:2452:C:H6     | 8:AB:2452:C:H3'    | 1.51                     | 0.74              |
| 9:AC:161:VAL:H     | 9:AC:193:GLU:CD    | 1.91                     | 0.74              |
| 16:AJ:51:GLY:O     | 16:AJ:52:ASP:HB2   | 1.86                     | 0.74              |
| 22:AP:23:ASP:CB    | 22:AP:93:LYS:HE2   | 2.18                     | 0.74              |
| 23:AQ:30:VAL:HG12  | 23:AQ:31:TYR:N     | 2.02                     | 0.74              |
| 29:AW:16:GLU:HA    | 29:AW:18:LYS:CD    | 2.18                     | 0.74              |
| 33:BA:565:U:H2'    | 33:BA:566:G:H8     | 1.53                     | 0.74              |
| 33:BA:619:U:HO2'   | 36:BD:134:TYR:HE1  | 1.34                     | 0.74              |
| 34:BB:163:ILE:HG23 | 34:BB:164:ASP:N    | 2.03                     | 0.74              |
| 8:CB:1366:A:C2'    | 8:CB:1367:A:H5'    | 2.18                     | 0.74              |
| 8:CB:1952:A:H5''   | 8:CB:1953:A:OP2    | 1.87                     | 0.74              |
| 9:CC:62:ARG:CG     | 9:CC:62:ARG:HH11   | 2.01                     | 0.74              |
| 9:CC:102:TYR:O     | 9:CC:103:ILE:HG22  | 1.87                     | 0.74              |
| 9:CC:257:ARG:HH11  | 9:CC:257:ARG:CG    | 2.00                     | 0.74              |
| 10:CD:197:THR:HG22 | 10:CD:198:GLY:N    | 2.01                     | 0.74              |
| 16:CJ:9:GLU:O      | 16:CJ:9:GLU:HG2    | 1.87                     | 0.74              |
| 18:CL:38:GLN:OE1   | 18:CL:39:LYS:HG2   | 1.88                     | 0.74              |
| 19:CM:8:LYS:HG2    | 19:CM:9:PHE:N      | 2.03                     | 0.74              |
| 23:CQ:87:VAL:HB    | 24:CR:54:VAL:CB    | 2.13                     | 0.74              |
| 33:DA:50:A:H62     | 33:DA:361:G:C4'    | 2.01                     | 0.74              |
| 33:DA:515:G:C2     | 33:DA:537:G:N3     | 2.55                     | 0.74              |
| 34:DB:139:GLU:O    | 34:DB:143:LEU:HB2  | 1.87                     | 0.74              |
| 37:DE:41:GLY:O     | 37:DE:42:ASN:HB2   | 1.87                     | 0.74              |
| 48:DP:25:ARG:HD3   | 48:DP:25:ARG:H     | 1.51                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:374:A:H2'    | 8:AB:375:G:C8      | 2.21                     | 0.74              |
| 8:AB:599:A:H4'    | 11:AE:26:ALA:CB    | 2.17                     | 0.74              |
| 8:AB:646:U:OP2    | 8:AB:646:U:H6      | 1.69                     | 0.74              |
| 8:AB:792:A:C8     | 8:AB:2440:C:C2     | 2.74                     | 0.74              |
| 8:AB:1399:C:C5'   | 26:AT:26:LYS:HG2   | 2.17                     | 0.74              |
| 8:AB:2094:A:H2'   | 8:AB:2095:A:H5''   | 1.68                     | 0.74              |
| 8:AB:2636:C:O3'   | 10:AD:80:TRP:CZ3   | 2.39                     | 0.74              |
| 8:AB:2769:U:H2'   | 8:AB:2770:G:H8     | 1.53                     | 0.74              |
| 17:AK:39:ILE:HD12 | 17:AK:40:LYS:H     | 1.52                     | 0.74              |
| 19:AM:9:PHE:CG    | 19:AM:10:ARG:N     | 2.56                     | 0.74              |
| 22:AP:48:ALA:O    | 22:AP:49:ILE:HB    | 1.85                     | 0.74              |
| 33:BA:779:C:N4    | 33:BA:803:G:H1     | 1.86                     | 0.74              |
| 33:BA:919:A:H8    | 33:BA:919:A:O5'    | 1.70                     | 0.74              |
| 4:C3:4:LYS:HZ1    | 4:C3:61:LEU:N      | 1.85                     | 0.74              |
| 4:C3:18:LYS:HB2   | 8:CB:651:G:OP1     | 1.88                     | 0.74              |
| 8:CB:1268:A:C2    | 8:CB:1269:A:H1'    | 2.23                     | 0.74              |
| 8:CB:1568:G:H5''  | 9:CC:60:ALA:HB3    | 1.68                     | 0.74              |
| 8:CB:2090:A:H4'   | 32:CZ:49:ARG:HH12  | 1.51                     | 0.74              |
| 8:CB:2138:G:C2    | 8:CB:2139:U:H1'    | 2.23                     | 0.74              |
| 8:CB:2553:G:N3    | 8:CB:2583:G:H1'    | 2.02                     | 0.74              |
| 9:CC:80:LEU:HA    | 9:CC:91:ALA:HA     | 1.70                     | 0.74              |
| 18:CL:126:ARG:NH2 | 18:CL:128:THR:HG23 | 2.02                     | 0.74              |
| 23:CQ:29:ARG:HH11 | 23:CQ:29:ARG:CB    | 1.99                     | 0.74              |
| 24:CR:69:GLY:O    | 24:CR:96:VAL:HG23  | 1.88                     | 0.74              |
| 28:CV:77:VAL:HG12 | 28:CV:89:ILE:HG23  | 1.70                     | 0.74              |
| 29:CW:42:THR:H    | 29:CW:65:LYS:HG3   | 1.53                     | 0.74              |
| 33:DA:230:G:H5''  | 48:DP:31:ARG:HH21  | 1.52                     | 0.74              |
| 33:DA:337:G:H2'   | 33:DA:338:A:C8     | 2.21                     | 0.74              |
| 33:DA:763:G:N3    | 33:DA:764:C:C6     | 2.56                     | 0.74              |
| 51:DS:28:LYS:HB2  | 51:DS:29:PRO:HD2   | 1.69                     | 0.74              |
| 4:A3:54:LEU:C     | 4:A3:56:LEU:H      | 1.88                     | 0.74              |
| 8:AB:794:A:C2'    | 8:AB:795:C:H5'     | 2.18                     | 0.74              |
| 8:AB:905:A:H3'    | 8:AB:906:U:H5''    | 1.69                     | 0.74              |
| 8:AB:2358:A:H61   | 8:AB:2428:G:H22    | 1.35                     | 0.74              |
| 9:AC:179:GLU:CG   | 9:AC:266:ILE:HA    | 2.17                     | 0.74              |
| 10:AD:14:ILE:HA   | 10:AD:19:GLY:HA2   | 1.70                     | 0.74              |
| 10:AD:83:ARG:HD3  | 10:AD:84:LEU:HA    | 1.68                     | 0.74              |
| 13:AG:68:ARG:HA   | 13:AG:71:LEU:HD13  | 1.70                     | 0.74              |
| 14:AH:6:LEU:HA    | 14:AH:15:LEU:N     | 2.03                     | 0.74              |
| 33:BA:18:C:H1'    | 33:BA:1079:G:H21   | 1.53                     | 0.74              |
| 33:BA:279:A:H4'   | 33:BA:280:C:OP2    | 1.87                     | 0.74              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 39:BG:6:ILE:HG13   | 39:BG:7:GLY:H     | 1.52                     | 0.74              |
| 41:BI:44:ARG:HH11  | 41:BI:44:ARG:CG   | 1.92                     | 0.74              |
| 8:CB:117:G:H5''    | 8:CB:118:A:OP2    | 1.87                     | 0.74              |
| 8:CB:420:C:H2'     | 8:CB:421:C:H6     | 1.52                     | 0.74              |
| 8:CB:976:G:H2'     | 8:CB:977:G:H8     | 1.53                     | 0.74              |
| 8:CB:2040:G:H2'    | 8:CB:2041:U:C6    | 2.22                     | 0.74              |
| 8:CB:2358:A:H8     | 8:CB:2358:A:H5'   | 1.53                     | 0.74              |
| 8:CB:2366:A:H3'    | 8:CB:2367:G:C8    | 2.23                     | 0.74              |
| 8:CB:2421:G:H8     | 8:CB:2421:G:H5'   | 1.53                     | 0.74              |
| 8:CB:2534:A:H5''   | 8:CB:2534:A:H8    | 1.51                     | 0.74              |
| 9:CC:164:VAL:HG23  | 9:CC:172:THR:HG22 | 1.69                     | 0.74              |
| 13:CG:3:VAL:HG13   | 13:CG:4:ALA:N     | 2.01                     | 0.74              |
| 14:CH:96:THR:HG23  | 14:CH:97:ARG:H    | 1.51                     | 0.74              |
| 21:CO:15:ARG:HH22  | 29:CW:74:LYS:HE2  | 1.53                     | 0.74              |
| 22:CP:73:PHE:O     | 22:CP:74:GLN:NE2  | 2.20                     | 0.74              |
| 24:CR:39:LEU:HD12  | 24:CR:61:ALA:HA   | 1.68                     | 0.74              |
| 24:CR:79:ARG:HD2   | 24:CR:80:ARG:N    | 2.02                     | 0.74              |
| 29:CW:39:GLN:H     | 29:CW:68:PHE:CB   | 2.00                     | 0.74              |
| 33:DA:390:U:C2     | 33:DA:391:G:N7    | 2.55                     | 0.74              |
| 33:DA:550:G:C4     | 33:DA:551:U:C6    | 2.76                     | 0.74              |
| 33:DA:1179:A:H5''  | 41:DI:98:ARG:HH12 | 1.51                     | 0.74              |
| 3:A2:21:ARG:NH2    | 8:AB:466:A:H5''   | 2.03                     | 0.74              |
| 8:AB:123:G:C2      | 8:AB:129:C:N3     | 2.55                     | 0.74              |
| 8:AB:584:C:H42     | 8:AB:1256:G:H1    | 1.35                     | 0.74              |
| 8:AB:597:G:O2'     | 18:AL:21:ARG:HG2  | 1.87                     | 0.74              |
| 8:AB:1355:G:C6     | 8:AB:1377:G:N2    | 2.56                     | 0.74              |
| 8:AB:2618:G:O2'    | 10:AD:154:LYS:O   | 2.05                     | 0.74              |
| 12:AF:157:THR:HG22 | 12:AF:158:THR:H   | 1.53                     | 0.74              |
| 27:AU:95:PHE:HE1   | 27:AU:96:LYS:HD2  | 1.53                     | 0.74              |
| 29:AW:39:GLN:OE1   | 29:AW:66:VAL:HG23 | 1.88                     | 0.74              |
| 32:AZ:17:SER:CB    | 32:AZ:21:VAL:HG23 | 2.13                     | 0.74              |
| 46:BN:30:ILE:HG12  | 46:BN:44:VAL:HG21 | 1.68                     | 0.74              |
| 1:C0:27:LEU:CG     | 8:CB:2886:A:C6    | 2.68                     | 0.74              |
| 8:CB:110:G:H8      | 8:CB:110:G:O5'    | 1.70                     | 0.74              |
| 8:CB:347:A:H5'     | 8:CB:347:A:C8     | 2.21                     | 0.74              |
| 8:CB:654:A:C2'     | 8:CB:655:A:H5''   | 2.18                     | 0.74              |
| 8:CB:738:G:H2'     | 8:CB:739:A:C8     | 2.22                     | 0.74              |
| 8:CB:1663:G:H8     | 8:CB:1663:G:H5'   | 1.51                     | 0.74              |
| 8:CB:1808:A:H3'    | 8:CB:1809:A:H8    | 1.52                     | 0.74              |
| 8:CB:2400:G:N2     | 8:CB:2417:C:C2    | 2.56                     | 0.74              |
| 8:CB:2523:G:N2     | 8:CB:2541:A:H1'   | 2.03                     | 0.74              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:CD:140:HIS:O   | 10:CD:141:ARG:HG2  | 1.87                     | 0.74              |
| 21:CO:48:LEU:HD22 | 21:CO:48:LEU:N     | 2.02                     | 0.74              |
| 33:DA:408:A:N6    | 33:DA:434:U:H3     | 1.86                     | 0.74              |
| 33:DA:787:A:H2'   | 33:DA:788:U:C5     | 2.22                     | 0.74              |
| 33:DA:864:A:H2    | 33:DA:917:G:N3     | 1.85                     | 0.74              |
| 33:DA:905:U:H3'   | 33:DA:906:A:H8     | 1.52                     | 0.74              |
| 33:DA:1181:G:C2   | 33:DA:1182:G:N2    | 2.56                     | 0.74              |
| 36:DD:16:THR:O    | 36:DD:33:ILE:HD11  | 1.87                     | 0.74              |
| 36:DD:90:LEU:HD21 | 36:DD:196:GLU:HG3  | 1.69                     | 0.74              |
| 51:DS:40:PHE:HB3  | 51:DS:41:PRO:HD2   | 1.68                     | 0.74              |
| 52:DT:34:VAL:HG22 | 52:DT:49:ALA:HB1   | 1.68                     | 0.74              |
| 9:AC:12:ARG:HH12  | 9:AC:18:VAL:HG11   | 1.52                     | 0.73              |
| 10:AD:86:GLU:CD   | 10:AD:87:GLY:H     | 1.91                     | 0.73              |
| 18:AL:126:ARG:NH2 | 18:AL:128:THR:HG23 | 2.03                     | 0.73              |
| 24:AR:5:PHE:HD1   | 24:AR:40:MET:CB    | 2.01                     | 0.73              |
| 24:AR:75:VAL:H    | 24:AR:90:ARG:HE    | 1.35                     | 0.73              |
| 26:AT:3:ARG:HH12  | 30:AX:19:LEU:HD11  | 1.53                     | 0.73              |
| 29:AW:36:ILE:HG23 | 29:AW:68:PHE:HD1   | 1.53                     | 0.73              |
| 33:BA:125:U:H2'   | 33:BA:126:G:H8     | 1.51                     | 0.73              |
| 33:BA:203:G:N2    | 33:BA:215:C:C2     | 2.56                     | 0.73              |
| 33:BA:428:G:C8    | 33:BA:430:A:C8     | 2.75                     | 0.73              |
| 33:BA:618:C:H3'   | 33:BA:619:U:C5'    | 2.18                     | 0.73              |
| 33:BA:665:A:N7    | 33:BA:733:G:C2     | 2.56                     | 0.73              |
| 33:BA:678:U:O2'   | 33:BA:679:C:O4'    | 2.05                     | 0.73              |
| 33:BA:903:G:N1    | 33:BA:904:U:O2     | 2.20                     | 0.73              |
| 33:BA:1282:C:H2'  | 33:BA:1283:U:C6    | 2.23                     | 0.73              |
| 34:BB:30:ILE:HD11 | 34:BB:188:THR:HG21 | 1.68                     | 0.73              |
| 34:BB:143:LEU:O   | 34:BB:147:LEU:HB2  | 1.88                     | 0.73              |
| 47:BO:84:LEU:HB3  | 47:BO:86:LEU:CD1   | 2.18                     | 0.73              |
| 3:C2:16:HIS:CD2   | 3:C2:44:VAL:HA     | 2.23                     | 0.73              |
| 7:CA:55:U:H2'     | 7:CA:56:G:H5''     | 1.70                     | 0.73              |
| 7:CA:56:G:H5'     | 7:CA:56:G:C8       | 2.22                     | 0.73              |
| 8:CB:817:C:H2'    | 8:CB:818:G:O4'     | 1.87                     | 0.73              |
| 11:CE:3:LEU:HD11  | 11:CE:194:LYS:HB3  | 1.70                     | 0.73              |
| 14:CH:27:ARG:HB2  | 32:CZ:60:PHE:HZ    | 1.53                     | 0.73              |
| 23:CQ:4:LYS:HB2   | 23:CQ:4:LYS:NZ     | 2.03                     | 0.73              |
| 23:CQ:64:ILE:HG12 | 23:CQ:95:ALA:CB    | 2.17                     | 0.73              |
| 26:CT:56:GLU:HG3  | 26:CT:88:LYS:HG3   | 1.70                     | 0.73              |
| 29:CW:44:PHE:HB3  | 29:CW:77:LYS:C     | 2.08                     | 0.73              |
| 33:DA:673:A:H4'   | 38:DF:86:ARG:HD2   | 1.69                     | 0.73              |
| 33:DA:823:C:H2'   | 33:DA:824:G:C8     | 2.23                     | 0.73              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DC:178:ARG:HG2 | 35:DC:205:GLU:O   | 1.87                     | 0.73              |
| 45:DM:106:ARG:HG2 | 45:DM:106:ARG:NH1 | 2.00                     | 0.73              |
| 48:DP:39:PHE:CE1  | 48:DP:74:LEU:HD13 | 2.23                     | 0.73              |
| 3:A2:5:PHE:HE2    | 3:A2:7:PRO:CB     | 1.95                     | 0.73              |
| 7:AA:103:U:H2'    | 7:AA:104:A:H8     | 1.52                     | 0.73              |
| 8:AB:1012:U:O4    | 16:AJ:30:THR:HG21 | 1.88                     | 0.73              |
| 15:AI:85:ILE:HD13 | 15:AI:97:VAL:O    | 1.88                     | 0.73              |
| 24:AR:23:GLU:HG2  | 24:AR:24:LYS:N    | 2.01                     | 0.73              |
| 27:AU:48:VAL:HG11 | 27:AU:52:ASN:HB2  | 1.69                     | 0.73              |
| 33:BA:669:G:N2    | 33:BA:738:C:C2    | 2.55                     | 0.73              |
| 33:BA:1251:A:H2'  | 33:BA:1252:A:H8   | 1.51                     | 0.73              |
| 38:BF:12:PRO:HG3  | 38:BF:56:LYS:O    | 1.88                     | 0.73              |
| 43:BK:56:LYS:HG2  | 43:BK:57:SER:N    | 2.02                     | 0.73              |
| 3:C2:28:ARG:HH22  | 3:C2:32:ALA:N     | 1.87                     | 0.73              |
| 8:CB:370:G:P      | 8:CB:370:G:H8     | 2.11                     | 0.73              |
| 8:CB:420:C:H2'    | 8:CB:421:C:C6     | 2.23                     | 0.73              |
| 8:CB:468:G:H2'    | 8:CB:469:G:H8     | 1.53                     | 0.73              |
| 8:CB:531:C:OP1    | 8:CB:532:A:C8     | 2.41                     | 0.73              |
| 8:CB:539:G:O2'    | 8:CB:540:C:H5'    | 1.88                     | 0.73              |
| 8:CB:564:C:O2     | 8:CB:578:G:N2     | 2.14                     | 0.73              |
| 8:CB:597:G:C2     | 8:CB:661:A:C2     | 2.76                     | 0.73              |
| 8:CB:666:A:O2'    | 8:CB:667:U:H5''   | 1.86                     | 0.73              |
| 8:CB:2539:C:H2'   | 8:CB:2540:C:H5''  | 1.68                     | 0.73              |
| 8:CB:2821:A:P     | 20:CN:2:ARG:HD2   | 2.29                     | 0.73              |
| 10:CD:101:PHE:HB2 | 10:CD:105:LYS:CD  | 2.17                     | 0.73              |
| 30:CX:49:ASP:HA   | 30:CX:52:ARG:HH11 | 1.52                     | 0.73              |
| 30:CX:57:LEU:O    | 30:CX:60:LYS:HB2  | 1.88                     | 0.73              |
| 33:DA:950:U:OP2   | 45:DM:100:ARG:HB3 | 1.88                     | 0.73              |
| 33:DA:1171:A:H2'  | 33:DA:1172:C:C6   | 2.23                     | 0.73              |
| 33:DA:1250:A:H2   | 33:DA:1370:G:H1'  | 1.53                     | 0.73              |
| 33:DA:1350:A:H2'  | 33:DA:1351:U:C6   | 2.23                     | 0.73              |
| 34:DB:167:HIS:HD2 | 34:DB:168:GLU:HG2 | 1.52                     | 0.73              |
| 37:DE:79:THR:HG22 | 37:DE:121:ASN:HB3 | 1.69                     | 0.73              |
| 41:DI:18:VAL:CG2  | 41:DI:85:ALA:HB2  | 2.18                     | 0.73              |
| 44:DL:97:VAL:CG2  | 44:DL:100:ALA:HB3 | 2.18                     | 0.73              |
| 49:DQ:43:LEU:HD23 | 49:DQ:72:TRP:CE2  | 2.23                     | 0.73              |
| 1:A0:41:HIS:HB3   | 1:A0:47:TYR:O     | 1.88                     | 0.73              |
| 7:AA:29:A:H3'     | 7:AA:30:C:C6      | 2.23                     | 0.73              |
| 8:AB:307:G:N2     | 8:AB:310:A:C8     | 2.41                     | 0.73              |
| 8:AB:394:C:O2     | 8:AB:395:U:C2     | 2.41                     | 0.73              |
| 8:AB:444:C:O2'    | 11:AE:47:LYS:HD3  | 1.88                     | 0.73              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:657:U:C2'     | 8:AB:658:U:C6     | 2.69                     | 0.73              |
| 8:AB:1122:G:H2'    | 8:AB:1123:C:H5''  | 1.70                     | 0.73              |
| 8:AB:2699:C:H2'    | 8:AB:2700:A:H8    | 1.51                     | 0.73              |
| 8:AB:2805:C:O5'    | 8:AB:2805:C:H6    | 1.70                     | 0.73              |
| 17:AK:2:ILE:HG21   | 17:AK:67:LYS:HE3  | 1.70                     | 0.73              |
| 26:AT:66:LYS:HE3   | 26:AT:66:LYS:C    | 2.08                     | 0.73              |
| 33:BA:240:G:C8     | 33:BA:240:G:C5'   | 2.71                     | 0.73              |
| 33:BA:782:A:H62    | 33:BA:800:G:N2    | 1.84                     | 0.73              |
| 33:BA:1263:C:O5'   | 33:BA:1263:C:H6   | 1.71                     | 0.73              |
| 51:BS:31:ARG:HE    | 51:BS:56:HIS:CE1  | 2.05                     | 0.73              |
| 8:CB:831:G:N1      | 8:CB:832:U:O2     | 2.21                     | 0.73              |
| 8:CB:900:A:H2'     | 8:CB:901:C:H6     | 1.52                     | 0.73              |
| 8:CB:1126:A:H5'    | 8:CB:1126:A:C8    | 2.22                     | 0.73              |
| 8:CB:1420:A:C2     | 8:CB:2211:A:H8    | 2.05                     | 0.73              |
| 8:CB:2850:A:C4     | 8:CB:2851:A:C8    | 2.77                     | 0.73              |
| 9:CC:36:ASN:HB3    | 9:CC:63:ILE:H     | 1.53                     | 0.73              |
| 9:CC:156:SER:OG    | 9:CC:195:GLY:HA3  | 1.89                     | 0.73              |
| 10:CD:61:THR:HG23  | 10:CD:62:LYS:H    | 1.53                     | 0.73              |
| 15:CI:17:ALA:O     | 15:CI:18:ASN:HB2  | 1.87                     | 0.73              |
| 20:CN:2:ARG:O      | 20:CN:2:ARG:CZ    | 2.36                     | 0.73              |
| 23:CQ:98:ALA:HB2   | 23:CQ:105:PHE:CD1 | 2.23                     | 0.73              |
| 33:DA:543:U:H2'    | 33:DA:544:G:H8    | 1.53                     | 0.73              |
| 33:DA:577:G:N2     | 33:DA:763:G:H22   | 1.86                     | 0.73              |
| 33:DA:707:U:H2'    | 33:DA:708:C:C6    | 2.23                     | 0.73              |
| 33:DA:1139:G:H4'   | 33:DA:1140:C:H5'  | 1.71                     | 0.73              |
| 34:DB:209:VAL:HG23 | 34:DB:210:THR:H   | 1.51                     | 0.73              |
| 43:DK:62:ALA:HB3   | 43:DK:91:GLY:HA3  | 1.70                     | 0.73              |
| 2:A1:31:GLU:HG2    | 2:A1:52:LYS:HD3   | 1.69                     | 0.73              |
| 8:AB:19:A:H2'      | 8:AB:20:C:C6      | 2.24                     | 0.73              |
| 8:AB:538:A:H2'     | 8:AB:539:G:H8     | 1.54                     | 0.73              |
| 8:AB:1532:A:C8     | 8:AB:1532:A:H5''  | 2.23                     | 0.73              |
| 8:AB:2841:C:H2'    | 8:AB:2842:G:C8    | 2.23                     | 0.73              |
| 8:AB:2841:C:H2'    | 8:AB:2842:G:H8    | 1.50                     | 0.73              |
| 8:AB:2856:A:H2'    | 8:AB:2857:G:O4'   | 1.87                     | 0.73              |
| 9:AC:163:ILE:HG22  | 9:AC:172:THR:HG21 | 1.69                     | 0.73              |
| 9:AC:179:GLU:HG3   | 9:AC:267:VAL:H    | 1.52                     | 0.73              |
| 27:AU:52:ASN:O     | 27:AU:54:PRO:HD3  | 1.88                     | 0.73              |
| 33:BA:78:A:H61     | 33:BA:91:U:H3     | 1.36                     | 0.73              |
| 33:BA:433:G:H2'    | 33:BA:434:U:O4'   | 1.87                     | 0.73              |
| 33:BA:781:A:H2     | 33:BA:1514:G:H4'  | 1.53                     | 0.73              |
| 33:BA:815:A:H4'    | 33:BA:817:C:N4    | 2.03                     | 0.73              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BF:9:MET:HG2    | 38:BF:86:ARG:O     | 1.89                     | 0.73              |
| 46:BN:13:VAL:O     | 46:BN:17:ASP:HB2   | 1.87                     | 0.73              |
| 50:BR:67:LEU:H     | 50:BR:67:LEU:CD1   | 1.95                     | 0.73              |
| 51:BS:51:HIS:HD2   | 51:BS:56:HIS:CE1   | 2.07                     | 0.73              |
| 7:CA:55:U:H5'      | 12:CF:24:VAL:HG23  | 1.70                     | 0.73              |
| 8:CB:532:A:H2'     | 8:CB:532:A:N3      | 2.04                     | 0.73              |
| 8:CB:583:G:N2      | 8:CB:584:C:C2      | 2.57                     | 0.73              |
| 8:CB:1965:C:OP1    | 8:CB:1966:A:H2'    | 1.88                     | 0.73              |
| 8:CB:2748:A:H1'    | 13:CG:66:THR:OG1   | 1.87                     | 0.73              |
| 12:CF:133:GLU:HG2  | 12:CF:147:ARG:O    | 1.88                     | 0.73              |
| 18:CL:54:GLN:NE2   | 18:CL:55:MET:HB3   | 2.02                     | 0.73              |
| 22:CP:23:ASP:OD2   | 22:CP:93:LYS:HG2   | 1.88                     | 0.73              |
| 33:DA:1441:A:H62   | 33:DA:1461:G:H21   | 1.34                     | 0.73              |
| 34:DB:20:ARG:O     | 34:DB:20:ARG:HG3   | 1.88                     | 0.73              |
| 36:DD:185:PRO:HB2  | 36:DD:190:LEU:HD11 | 1.69                     | 0.73              |
| 8:AB:227:A:N3      | 8:AB:2407:A:H1'    | 2.04                     | 0.73              |
| 8:AB:256:A:O2'     | 8:AB:257:C:H5'     | 1.88                     | 0.73              |
| 8:AB:420:C:H2'     | 8:AB:421:C:C6      | 2.24                     | 0.73              |
| 8:AB:568:U:O2      | 8:AB:570:G:H8      | 1.72                     | 0.73              |
| 8:AB:615:U:H5''    | 8:AB:616:A:C8      | 2.21                     | 0.73              |
| 8:AB:979:A:C2      | 8:AB:982:C:C2      | 2.77                     | 0.73              |
| 8:AB:1571:A:C2     | 8:AB:1572:A:C5     | 2.76                     | 0.73              |
| 8:AB:1677:A:C2     | 8:AB:1678:A:C4     | 2.76                     | 0.73              |
| 8:AB:2051:A:N6     | 8:AB:2614:A:C8     | 2.57                     | 0.73              |
| 8:AB:2241:A:C2     | 8:AB:2242:G:C5     | 2.77                     | 0.73              |
| 8:AB:2273:A:H2'    | 8:AB:2274:A:C8     | 2.23                     | 0.73              |
| 8:AB:2278:A:C8     | 29:AW:8:SER:HB3    | 2.22                     | 0.73              |
| 9:AC:36:ASN:HB3    | 9:AC:63:ILE:H      | 1.52                     | 0.73              |
| 9:AC:143:VAL:HG23  | 9:AC:152:GLN:HG3   | 1.70                     | 0.73              |
| 11:AE:112:LEU:HD22 | 11:AE:115:GLN:HG3  | 1.71                     | 0.73              |
| 14:AH:24:GLY:C     | 14:AH:27:ARG:HB3   | 2.08                     | 0.73              |
| 17:AK:76:VAL:O     | 22:AP:74:GLN:HB2   | 1.88                     | 0.73              |
| 20:AN:44:LEU:O     | 20:AN:47:VAL:HG22  | 1.89                     | 0.73              |
| 21:AO:85:LYS:HD2   | 21:AO:85:LYS:H     | 1.53                     | 0.73              |
| 33:BA:541:G:H2'    | 33:BA:542:G:H8     | 1.52                     | 0.73              |
| 33:BA:764:C:O2'    | 33:BA:765:G:H5'    | 1.89                     | 0.73              |
| 33:BA:969:A:H5'    | 33:BA:969:A:C8     | 2.24                     | 0.73              |
| 33:BA:1129:C:H1'   | 33:BA:1130:A:N7    | 2.03                     | 0.73              |
| 8:CB:574:A:H4'     | 8:CB:575:A:H5''    | 1.71                     | 0.73              |
| 8:CB:1257:C:O2     | 8:CB:1257:C:H2'    | 1.87                     | 0.73              |
| 8:CB:2051:A:N6     | 8:CB:2614:A:C8     | 2.57                     | 0.73              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:2784:U:H2'    | 8:CB:2785:C:H6    | 1.52                     | 0.73              |
| 13:CG:77:GLY:HA2   | 13:CG:82:PHE:CE2  | 2.23                     | 0.73              |
| 14:CH:32:PRO:HD2   | 14:CH:33:GLN:H    | 1.53                     | 0.73              |
| 16:CJ:129:GLU:HA   | 16:CJ:132:HIS:ND1 | 2.03                     | 0.73              |
| 18:CL:103:ILE:HD13 | 18:CL:103:ILE:H   | 1.53                     | 0.73              |
| 26:CT:80:TRP:CD1   | 26:CT:81:LYS:N    | 2.53                     | 0.73              |
| 29:CW:31:LEU:HD11  | 29:CW:39:GLN:NE2  | 2.03                     | 0.73              |
| 29:CW:38:ARG:HB3   | 29:CW:68:PHE:CE1  | 2.24                     | 0.73              |
| 33:DA:291:U:H1'    | 33:DA:310:G:N2    | 2.03                     | 0.73              |
| 33:DA:381:C:C2'    | 33:DA:382:A:H8    | 1.99                     | 0.73              |
| 33:DA:599:C:C4'    | 40:DH:121:GLY:HA3 | 2.11                     | 0.73              |
| 33:DA:691:G:H22    | 33:DA:695:A:H5''  | 1.54                     | 0.73              |
| 33:DA:943:U:H2'    | 33:DA:944:G:O4'   | 1.89                     | 0.73              |
| 42:DJ:66:GLU:HB2   | 46:DN:98:ALA:HB2  | 1.70                     | 0.73              |
| 44:DL:64:SER:HB2   | 44:DL:81:ILE:HD11 | 1.70                     | 0.73              |
| 44:DL:122:LYS:NZ   | 44:DL:122:LYS:H   | 1.84                     | 0.73              |
| 51:DS:39:ILE:HB    | 51:DS:66:VAL:HA   | 1.71                     | 0.73              |
| 52:DT:70:LYS:O     | 52:DT:73:ARG:HG2  | 1.87                     | 0.73              |
| 8:AB:136:G:H2'     | 8:AB:137:U:H6     | 1.51                     | 0.73              |
| 8:AB:814:C:H1'     | 8:AB:1225:G:H21   | 1.53                     | 0.73              |
| 8:AB:1760:C:H2'    | 8:AB:1761:C:O4'   | 1.89                     | 0.73              |
| 8:AB:2052:A:O2'    | 10:AD:153:GLY:HA3 | 1.89                     | 0.73              |
| 9:AC:51:ARG:HH22   | 9:AC:54:GLY:CA    | 2.00                     | 0.73              |
| 33:BA:328:C:H4'    | 33:BA:329:A:H5''  | 1.69                     | 0.73              |
| 33:BA:715:A:H3'    | 33:BA:715:A:C8    | 2.22                     | 0.73              |
| 33:BA:1479:C:H2'   | 33:BA:1480:A:C8   | 2.23                     | 0.73              |
| 34:BB:17:HIS:HD2   | 34:BB:18:GLN:NE2  | 1.86                     | 0.73              |
| 43:BK:113:THR:HG22 | 43:BK:114:PRO:HD2 | 1.69                     | 0.73              |
| 44:BL:30:ARG:HA    | 44:BL:80:LEU:HD12 | 1.70                     | 0.73              |
| 51:BS:68:HIS:HD2   | 51:BS:69:LYS:H    | 1.35                     | 0.73              |
| 8:CB:116:C:O2'     | 8:CB:126:A:C8     | 2.42                     | 0.73              |
| 8:CB:476:G:N2      | 8:CB:479:A:C8     | 2.55                     | 0.73              |
| 8:CB:749:A:C5      | 8:CB:1618:A:C2    | 2.77                     | 0.73              |
| 8:CB:1378:A:C8     | 8:CB:1380:G:O6    | 2.41                     | 0.73              |
| 8:CB:2186:G:H2'    | 8:CB:2187:U:O4'   | 1.88                     | 0.73              |
| 9:CC:163:ILE:HG22  | 9:CC:172:THR:HG21 | 1.70                     | 0.73              |
| 10:CD:99:GLU:HA    | 10:CD:99:GLU:OE1  | 1.86                     | 0.73              |
| 20:CN:44:LEU:O     | 20:CN:47:VAL:HG22 | 1.88                     | 0.73              |
| 33:DA:1250:A:C2    | 33:DA:1370:G:H1'  | 2.24                     | 0.73              |
| 33:DA:1460:C:H2'   | 33:DA:1461:G:C8   | 2.23                     | 0.73              |
| 34:DB:8:MET:N      | 34:DB:10:LYS:HE2  | 2.04                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DD:3:TYR:O     | 36:DD:4:LEU:HB2    | 1.87                     | 0.73              |
| 8:AB:100:U:H5''   | 27:AU:90:LYS:HD3   | 1.70                     | 0.73              |
| 8:AB:118:A:H5'    | 8:AB:119:A:H8      | 1.54                     | 0.73              |
| 8:AB:320:A:H5''   | 8:AB:321:U:OP1     | 1.87                     | 0.73              |
| 8:AB:496:G:H5''   | 8:AB:496:G:H8      | 1.54                     | 0.73              |
| 8:AB:1378:A:N7    | 8:AB:1380:G:C6     | 2.56                     | 0.73              |
| 8:AB:1663:G:H8    | 8:AB:1663:G:H5'    | 1.53                     | 0.73              |
| 8:AB:2358:A:H61   | 8:AB:2428:G:N2     | 1.87                     | 0.73              |
| 8:AB:2452:C:C4    | 8:AB:2453:A:N1     | 2.57                     | 0.73              |
| 8:AB:2511:U:C4    | 8:AB:2512:C:C4     | 2.77                     | 0.73              |
| 10:AD:36:GLN:HE21 | 10:AD:36:GLN:C     | 1.92                     | 0.73              |
| 12:AF:111:ARG:CZ  | 45:BM:67:ASP:HB2   | 2.18                     | 0.73              |
| 32:AZ:56:ARG:CG   | 32:AZ:56:ARG:HH11  | 2.02                     | 0.73              |
| 33:BA:977:A:H3'   | 33:BA:977:A:C8     | 2.23                     | 0.73              |
| 37:BE:16:ALA:O    | 37:BE:34:ALA:HA    | 1.88                     | 0.73              |
| 41:BI:20:ILE:HG12 | 41:BI:86:LEU:HD11  | 1.71                     | 0.73              |
| 41:BI:38:PHE:O    | 41:BI:44:ARG:HG2   | 1.87                     | 0.73              |
| 8:CB:136:G:H2'    | 8:CB:137:U:C6      | 2.23                     | 0.73              |
| 8:CB:1283:G:N2    | 8:CB:1286:A:H5'    | 2.03                     | 0.73              |
| 8:CB:1527:G:H21   | 8:CB:1545:A:H62    | 1.35                     | 0.73              |
| 8:CB:2452:C:H6    | 8:CB:2452:C:H3'    | 1.53                     | 0.73              |
| 27:CU:97:SER:C    | 27:CU:98:ASN:HD22  | 1.92                     | 0.73              |
| 33:DA:768:A:H1'   | 33:DA:1512:U:O2'   | 1.88                     | 0.73              |
| 33:DA:1080:A:H4'  | 37:DE:20:VAL:HG21  | 1.70                     | 0.73              |
| 33:DA:1242:G:H2'  | 33:DA:1243:C:O4'   | 1.88                     | 0.73              |
| 34:DB:163:ILE:HA  | 34:DB:185:ILE:HD12 | 1.71                     | 0.73              |
| 2:A1:47:ILE:CG2   | 2:A1:48:TYR:H      | 1.94                     | 0.73              |
| 8:AB:371:A:C8     | 8:AB:373:U:C2      | 2.77                     | 0.73              |
| 8:AB:528:A:C2     | 8:AB:2043:C:H4'    | 2.23                     | 0.73              |
| 8:AB:749:A:C6     | 8:AB:1618:A:C2     | 2.77                     | 0.73              |
| 8:AB:2028:U:H2'   | 8:AB:2029:G:C8     | 2.23                     | 0.73              |
| 9:AC:53:ILE:HG12  | 9:AC:218:THR:CA    | 2.18                     | 0.73              |
| 9:AC:83:ASP:HB2   | 9:AC:90:ILE:HD12   | 1.71                     | 0.73              |
| 10:AD:34:VAL:HG22 | 10:AD:35:THR:N     | 2.03                     | 0.73              |
| 19:AM:90:GLU:O    | 19:AM:91:TYR:HB2   | 1.88                     | 0.73              |
| 33:BA:355:C:H2'   | 33:BA:356:A:C8     | 2.23                     | 0.73              |
| 33:BA:401:C:H2'   | 33:BA:402:G:H8     | 1.54                     | 0.73              |
| 33:BA:602:A:C2    | 33:BA:637:C:N3     | 2.57                     | 0.73              |
| 33:BA:878:A:C8    | 33:BA:878:A:H3'    | 2.22                     | 0.73              |
| 33:BA:922:G:H4'   | 37:BE:24:VAL:HB    | 1.68                     | 0.73              |
| 38:BF:38:ARG:HD3  | 38:BF:98:GLU:H     | 1.52                     | 0.73              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:BH:87:ARG:O    | 40:BH:91:LEU:HG   | 1.88                     | 0.73              |
| 46:BN:20:PHE:HA   | 46:BN:24:ALA:HB2  | 1.69                     | 0.73              |
| 8:CB:136:G:H22    | 26:CT:3:ARG:NH2   | 1.86                     | 0.73              |
| 8:CB:464:U:H2'    | 8:CB:465:G:C8     | 2.23                     | 0.73              |
| 8:CB:570:G:C4     | 8:CB:2030:A:N7    | 2.56                     | 0.73              |
| 8:CB:2677:G:C6    | 8:CB:2731:G:C6    | 2.77                     | 0.73              |
| 8:CB:2842:G:H5''  | 8:CB:2843:G:OP2   | 1.88                     | 0.73              |
| 10:CD:115:GLY:O   | 20:CN:2:ARG:HD3   | 1.88                     | 0.73              |
| 13:CG:157:LYS:HB2 | 13:CG:159:LYS:HG3 | 1.71                     | 0.73              |
| 18:CL:55:MET:CB   | 18:CL:56:PRO:HD3  | 2.19                     | 0.73              |
| 21:CO:3:LYS:O     | 21:CO:7:ARG:HG2   | 1.88                     | 0.73              |
| 22:CP:29:VAL:O    | 22:CP:31:VAL:HG23 | 1.88                     | 0.73              |
| 27:CU:82:VAL:HG21 | 27:CU:95:PHE:O    | 1.88                     | 0.73              |
| 33:DA:350:G:H2'   | 33:DA:351:G:H5'   | 1.70                     | 0.73              |
| 33:DA:551:U:H2'   | 33:DA:552:U:C6    | 2.22                     | 0.73              |
| 33:DA:799:G:H2'   | 33:DA:800:G:H5'   | 1.70                     | 0.73              |
| 41:DI:29:ILE:HG12 | 41:DI:30:ASN:N    | 2.03                     | 0.73              |
| 44:DL:79:ILE:HD12 | 44:DL:96:THR:HG21 | 1.71                     | 0.73              |
| 50:DR:37:LYS:HA   | 50:DR:62:ARG:HH22 | 1.51                     | 0.73              |
| 8:AB:53:A:H62     | 8:AB:117:G:H21    | 1.35                     | 0.73              |
| 8:AB:83:A:N6      | 8:AB:101:A:OP1    | 2.21                     | 0.73              |
| 8:AB:1220:G:H2'   | 8:AB:1221:C:C6    | 2.24                     | 0.73              |
| 8:AB:1316:U:O2'   | 8:AB:1317:G:H5'   | 1.88                     | 0.73              |
| 8:AB:2027:G:C2    | 8:AB:2037:A:C2    | 2.76                     | 0.73              |
| 8:AB:2423:U:O4'   | 8:AB:2425:A:N7    | 2.22                     | 0.73              |
| 8:AB:2549:G:C6    | 55:AB:4659:HOH:O  | 2.39                     | 0.73              |
| 8:AB:2683:C:C2'   | 8:AB:2684:U:H5'   | 2.19                     | 0.73              |
| 8:AB:2722:G:C4    | 8:AB:2723:C:C5    | 2.77                     | 0.73              |
| 13:AG:8:VAL:HG11  | 13:AG:49:LEU:HB2  | 1.69                     | 0.73              |
| 21:AO:9:ARG:O     | 21:AO:13:ARG:HD2  | 1.87                     | 0.73              |
| 23:AQ:12:ARG:HH11 | 23:AQ:12:ARG:CG   | 2.01                     | 0.73              |
| 23:AQ:26:ALA:HA   | 23:AQ:29:ARG:HB2  | 1.71                     | 0.73              |
| 33:BA:243:A:H5''  | 33:BA:243:A:C8    | 2.24                     | 0.73              |
| 33:BA:712:A:H2'   | 33:BA:713:G:O4'   | 1.89                     | 0.73              |
| 33:BA:977:A:H2    | 33:BA:1223:C:H2'  | 1.54                     | 0.73              |
| 33:BA:1236:A:H5'' | 33:BA:1236:A:H8   | 1.53                     | 0.73              |
| 8:CB:378:C:H2'    | 8:CB:379:G:H5'    | 1.69                     | 0.73              |
| 8:CB:563:A:N1     | 8:CB:2018:G:C4    | 2.57                     | 0.73              |
| 8:CB:637:A:OP2    | 18:CL:112:LEU:HB2 | 1.89                     | 0.73              |
| 8:CB:1364:G:N7    | 32:CZ:1:MET:SD    | 2.62                     | 0.73              |
| 8:CB:2074:U:C4    | 8:CB:2436:G:N2    | 2.57                     | 0.73              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2241:A:C2    | 8:CB:2242:G:C5     | 2.77                     | 0.73              |
| 18:CL:30:THR:HG22 | 18:CL:36:LYS:HE3   | 1.70                     | 0.73              |
| 21:CO:2:ASP:CB    | 21:CO:4:LYS:HB2    | 2.19                     | 0.73              |
| 21:CO:17:LYS:O    | 21:CO:20:GLU:HG2   | 1.88                     | 0.73              |
| 23:CQ:21:LYS:HD3  | 23:CQ:21:LYS:O     | 1.89                     | 0.73              |
| 26:CT:76:ARG:HH11 | 26:CT:76:ARG:CB    | 2.02                     | 0.73              |
| 30:CX:28:LEU:HD22 | 30:CX:42:LEU:CG    | 2.02                     | 0.73              |
| 33:DA:61:G:H2'    | 33:DA:62:U:O4'     | 1.89                     | 0.73              |
| 33:DA:81:A:H2     | 33:DA:89:U:N3      | 1.86                     | 0.73              |
| 33:DA:238:A:C2'   | 33:DA:239:U:H5''   | 2.19                     | 0.73              |
| 33:DA:328:C:H4'   | 33:DA:329:A:H5''   | 1.71                     | 0.73              |
| 33:DA:540:G:H2'   | 33:DA:541:G:H8     | 1.54                     | 0.73              |
| 33:DA:1068:G:H8   | 33:DA:1068:G:C5'   | 2.01                     | 0.73              |
| 49:DQ:45:VAL:HG13 | 49:DQ:72:TRP:O     | 1.87                     | 0.73              |
| 8:AB:135:U:H2'    | 8:AB:136:G:C8      | 2.22                     | 0.73              |
| 8:AB:468:G:H2'    | 8:AB:469:G:H8      | 1.48                     | 0.73              |
| 8:AB:968:C:C2'    | 8:AB:969:G:H5''    | 2.19                     | 0.73              |
| 8:AB:1232:G:C5    | 8:AB:1233:C:C5     | 2.76                     | 0.73              |
| 8:AB:1381:G:O2'   | 8:AB:1382:G:H5'    | 1.89                     | 0.73              |
| 8:AB:1861:G:C8    | 8:AB:1861:G:H5''   | 2.23                     | 0.73              |
| 8:AB:2717:C:H1'   | 22:AP:95:LYS:HZ3   | 1.52                     | 0.73              |
| 16:AJ:58:ASN:HA   | 16:AJ:126:ALA:C    | 2.10                     | 0.73              |
| 20:AN:71:ARG:O    | 20:AN:71:ARG:HG2   | 1.87                     | 0.73              |
| 27:AU:43:LYS:HD2  | 27:AU:43:LYS:O     | 1.89                     | 0.73              |
| 29:AW:38:ARG:O    | 29:AW:39:GLN:HB2   | 1.86                     | 0.73              |
| 33:BA:759:A:H2'   | 33:BA:760:G:O4'    | 1.89                     | 0.73              |
| 33:BA:878:A:H5''  | 40:BH:80:PRO:CG    | 2.18                     | 0.73              |
| 33:BA:1084:G:C8   | 33:BA:1085:U:C2'   | 2.71                     | 0.73              |
| 33:BA:1229:A:N6   | 45:BM:103:THR:HG21 | 2.02                     | 0.73              |
| 36:BD:87:GLU:HA   | 36:BD:90:LEU:HD12  | 1.70                     | 0.73              |
| 43:BK:95:THR:O    | 43:BK:99:LEU:HD23  | 1.89                     | 0.73              |
| 49:BQ:57:VAL:HG12 | 49:BQ:78:VAL:HB    | 1.69                     | 0.73              |
| 8:CB:1381:G:C5    | 8:CB:1382:G:N2     | 2.56                     | 0.73              |
| 8:CB:2074:U:H2'   | 8:CB:2075:U:C6     | 2.21                     | 0.73              |
| 9:CC:243:PRO:HB3  | 9:CC:248:GLY:HA2   | 1.71                     | 0.73              |
| 13:CG:32:LEU:HD21 | 13:CG:135:ALA:HB1  | 1.69                     | 0.73              |
| 16:CJ:58:ASN:HA   | 16:CJ:126:ALA:C    | 2.09                     | 0.73              |
| 16:CJ:94:ALA:CA   | 16:CJ:97:PRO:HG3   | 2.18                     | 0.73              |
| 19:CM:92:TRP:CD1  | 19:CM:93:VAL:N     | 2.53                     | 0.73              |
| 19:CM:133:LYS:HD2 | 19:CM:134:THR:N    | 2.02                     | 0.73              |
| 33:DA:714:G:H2'   | 33:DA:715:A:H8     | 1.51                     | 0.73              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:1053:G:C4'   | 33:DA:1054:C:H5'  | 2.19                     | 0.73              |
| 33:DA:1386:G:C2    | 33:DA:1387:G:C5   | 2.77                     | 0.73              |
| 33:DA:1420:U:C2'   | 33:DA:1421:G:H5'  | 2.19                     | 0.73              |
| 34:DB:72:LYS:HE3   | 34:DB:164:ASP:HB3 | 1.71                     | 0.73              |
| 35:DC:166:TRP:CD1  | 35:DC:167:TYR:N   | 2.55                     | 0.73              |
| 3:A2:19:ARG:HB2    | 3:A2:19:ARG:NH1   | 2.04                     | 0.72              |
| 4:A3:39:ARG:NH2    | 8:AB:2363:G:H5''  | 2.04                     | 0.72              |
| 4:A3:46:LYS:HG2    | 4:A3:47:ALA:H     | 1.52                     | 0.72              |
| 5:A4:9:LYS:N       | 5:A4:9:LYS:HD3    | 2.03                     | 0.72              |
| 8:AB:158:U:H2'     | 8:AB:159:G:H5'    | 1.69                     | 0.72              |
| 8:AB:2047:C:H2'    | 8:AB:2048:G:C8    | 2.24                     | 0.72              |
| 8:AB:2366:A:H3'    | 8:AB:2367:G:C8    | 2.24                     | 0.72              |
| 8:AB:2489:U:O2     | 8:AB:2491:U:C5    | 2.42                     | 0.72              |
| 10:AD:46:ARG:HD2   | 10:AD:80:TRP:CH2  | 2.24                     | 0.72              |
| 16:AJ:31:GLU:HG2   | 16:AJ:40:HIS:NE2  | 2.03                     | 0.72              |
| 23:AQ:39:ILE:HD13  | 24:AR:80:ARG:NH1  | 2.01                     | 0.72              |
| 24:AR:29:THR:HG23  | 24:AR:66:HIS:CE1  | 2.24                     | 0.72              |
| 27:AU:95:PHE:CE1   | 27:AU:96:LYS:HD2  | 2.23                     | 0.72              |
| 29:AW:16:GLU:HA    | 29:AW:18:LYS:CE   | 2.19                     | 0.72              |
| 33:BA:177:G:OP1    | 52:BT:59:ARG:HD3  | 1.88                     | 0.72              |
| 33:BA:885:G:H8     | 33:BA:885:G:O5'   | 1.72                     | 0.72              |
| 33:BA:1320:C:O2'   | 51:BS:72:GLU:HG2  | 1.89                     | 0.72              |
| 36:BD:173:ASP:HB2  | 36:BD:178:GLU:HB3 | 1.70                     | 0.72              |
| 37:BE:123:LEU:HD12 | 37:BE:123:LEU:O   | 1.89                     | 0.72              |
| 38:BF:86:ARG:NH1   | 50:BR:63:TYR:HB3  | 2.04                     | 0.72              |
| 46:BN:77:GLY:O     | 46:BN:78:LEU:HD23 | 1.88                     | 0.72              |
| 2:C1:26:LYS:HD3    | 2:C1:28:THR:OG1   | 1.88                     | 0.72              |
| 8:CB:37:C:H42      | 8:CB:442:G:H1     | 1.37                     | 0.72              |
| 8:CB:483:A:H4'     | 27:CU:45:GLN:HB2  | 1.71                     | 0.72              |
| 8:CB:532:A:N1      | 8:CB:2020:A:H1'   | 2.04                     | 0.72              |
| 8:CB:968:C:C2'     | 8:CB:969:G:H5''   | 2.19                     | 0.72              |
| 8:CB:1094:U:O2     | 8:CB:1097:U:H5    | 1.73                     | 0.72              |
| 8:CB:1220:G:H2'    | 8:CB:1221:C:H6    | 1.53                     | 0.72              |
| 8:CB:1677:A:C2     | 8:CB:1678:A:C4    | 2.77                     | 0.72              |
| 8:CB:1709:U:O2     | 8:CB:1710:G:C8    | 2.42                     | 0.72              |
| 8:CB:1763:G:H2'    | 8:CB:1764:C:H5'   | 1.71                     | 0.72              |
| 8:CB:2282:G:C5     | 8:CB:2425:A:C2    | 2.77                     | 0.72              |
| 10:CD:157:LYS:HE3  | 16:CJ:80:HIS:CA   | 2.19                     | 0.72              |
| 17:CK:102:PRO:HD3  | 22:CP:68:GLY:HA3  | 1.70                     | 0.72              |
| 42:DJ:37:ARG:HG3   | 42:DJ:75:ASP:O    | 1.88                     | 0.72              |
| 50:DR:26:ALA:HA    | 50:DR:29:LYS:HE3  | 1.70                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:440:C:H3'     | 8:AB:440:C:H6      | 1.53                     | 0.72              |
| 8:AB:614:A:H5''    | 8:AB:616:A:N6      | 2.05                     | 0.72              |
| 8:AB:2060:A:C2     | 8:AB:2502:G:C5     | 2.76                     | 0.72              |
| 8:AB:2593:U:H2'    | 8:AB:2594:C:H6     | 1.55                     | 0.72              |
| 8:AB:2831:G:H1'    | 8:AB:2883:A:H2'    | 1.70                     | 0.72              |
| 13:AG:125:PRO:HD2  | 13:AG:129:GLU:HB3  | 1.70                     | 0.72              |
| 19:AM:41:LEU:HG    | 19:AM:95:LEU:HD22  | 1.69                     | 0.72              |
| 28:AV:63:ILE:H     | 28:AV:70:ILE:CD1   | 2.02                     | 0.72              |
| 33:BA:15:G:N3      | 33:BA:16:A:C8      | 2.57                     | 0.72              |
| 33:BA:789:U:H2'    | 33:BA:790:A:H5''   | 1.70                     | 0.72              |
| 33:BA:1355:G:H2'   | 33:BA:1356:G:O4'   | 1.89                     | 0.72              |
| 37:BE:89:THR:HG21  | 37:BE:134:ASN:HD22 | 1.54                     | 0.72              |
| 50:BR:25:ILE:O     | 50:BR:25:ILE:HG12  | 1.90                     | 0.72              |
| 8:CB:762:U:O2      | 8:CB:763:G:C6      | 2.43                     | 0.72              |
| 8:CB:794:A:H2'     | 8:CB:795:C:H6      | 1.54                     | 0.72              |
| 8:CB:1354:A:C2     | 8:CB:1355:G:H1'    | 2.24                     | 0.72              |
| 8:CB:1645:G:H5''   | 8:CB:1646:C:H5'    | 1.70                     | 0.72              |
| 8:CB:2366:A:H5''   | 8:CB:2367:G:OP2    | 1.89                     | 0.72              |
| 8:CB:2740:A:C4     | 8:CB:2741:A:C8     | 2.76                     | 0.72              |
| 12:CF:37:MET:HG3   | 12:CF:86:CYS:SG    | 2.29                     | 0.72              |
| 22:CP:23:ASP:CB    | 22:CP:93:LYS:HE2   | 2.19                     | 0.72              |
| 23:CQ:91:ARG:HA    | 23:CQ:94:LEU:HD23  | 1.71                     | 0.72              |
| 25:CS:5:ALA:HB3    | 25:CS:54:ALA:HB2   | 1.71                     | 0.72              |
| 33:DA:442:G:N1     | 33:DA:493:A:N6     | 2.37                     | 0.72              |
| 33:DA:1455:G:H2'   | 33:DA:1456:A:C8    | 2.24                     | 0.72              |
| 41:DI:119:LYS:HB3  | 41:DI:122:ARG:HB2  | 1.70                     | 0.72              |
| 43:DK:28:ASN:ND2   | 43:DK:46:ALA:HB3   | 2.05                     | 0.72              |
| 49:DQ:61:ARG:HB3   | 49:DQ:61:ARG:CZ    | 2.20                     | 0.72              |
| 4:A3:28:LEU:C      | 4:A3:29:ARG:HD3    | 2.10                     | 0.72              |
| 8:AB:347:A:C2'     | 8:AB:348:A:H5'     | 2.18                     | 0.72              |
| 8:AB:1077:A:N1     | 8:AB:1088:A:H2'    | 2.04                     | 0.72              |
| 8:AB:1570:A:C6     | 8:AB:1571:A:C6     | 2.77                     | 0.72              |
| 8:AB:1802:A:C6     | 8:AB:1817:G:N2     | 2.56                     | 0.72              |
| 8:AB:2230:G:C4     | 8:AB:2231:U:C5     | 2.78                     | 0.72              |
| 8:AB:2560:A:C5     | 8:AB:2561:U:C5     | 2.77                     | 0.72              |
| 9:AC:121:ALA:H     | 9:AC:129:LEU:HD12  | 1.52                     | 0.72              |
| 10:AD:115:GLY:HA2  | 10:AD:166:GLY:HA2  | 1.70                     | 0.72              |
| 11:AE:112:LEU:HD21 | 18:AL:11:GLY:O     | 1.88                     | 0.72              |
| 19:AM:134:THR:HB   | 28:AV:79:ARG:HD2   | 1.71                     | 0.72              |
| 25:AS:8:ARG:HA     | 25:AS:102:HIS:CD2  | 2.25                     | 0.72              |
| 33:BA:678:U:N3     | 33:BA:713:G:N2     | 2.36                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:803:G:H2'    | 33:BA:804:U:C6     | 2.24                     | 0.72              |
| 33:BA:895:G:C8     | 33:BA:895:G:O5'    | 2.42                     | 0.72              |
| 33:BA:1319:A:H5''  | 33:BA:1319:A:H8    | 1.55                     | 0.72              |
| 34:BB:34:ARG:NH1   | 34:BB:35:ASN:HB3   | 2.04                     | 0.72              |
| 35:BC:155:ARG:HG2  | 35:BC:192:TYR:CD1  | 2.24                     | 0.72              |
| 35:BC:179:ALA:HB1  | 35:BC:181:ILE:HD12 | 1.71                     | 0.72              |
| 43:BK:113:THR:CG2  | 43:BK:114:PRO:HD2  | 2.18                     | 0.72              |
| 8:CB:86:G:O2'      | 8:CB:104:A:H4'     | 1.89                     | 0.72              |
| 8:CB:792:A:C8      | 8:CB:2440:C:C2     | 2.77                     | 0.72              |
| 8:CB:1157:G:H5'    | 8:CB:1157:G:C8     | 2.23                     | 0.72              |
| 8:CB:1286:A:C5     | 8:CB:1289:C:N4     | 2.58                     | 0.72              |
| 8:CB:2074:U:N3     | 8:CB:2436:G:N2     | 2.37                     | 0.72              |
| 8:CB:2307:G:N2     | 8:CB:2308:G:H4'    | 2.03                     | 0.72              |
| 8:CB:2860:A:H8     | 8:CB:2860:A:H5'    | 1.53                     | 0.72              |
| 11:CE:48:THR:HG22  | 11:CE:49:ARG:N     | 2.04                     | 0.72              |
| 27:CU:82:VAL:HB    | 27:CU:94:PHE:CB    | 2.18                     | 0.72              |
| 33:DA:33:A:H8      | 33:DA:33:A:O5'     | 1.72                     | 0.72              |
| 33:DA:94:G:H5'     | 33:DA:94:G:H8      | 1.53                     | 0.72              |
| 33:DA:186:C:O3'    | 52:DT:76:ALA:HB2   | 1.89                     | 0.72              |
| 33:DA:408:A:C6     | 33:DA:409:U:C2     | 2.77                     | 0.72              |
| 37:DE:75:LEU:HD21  | 37:DE:119:VAL:CG1  | 2.19                     | 0.72              |
| 42:DJ:76:ILE:HG22  | 42:DJ:77:VAL:O     | 1.90                     | 0.72              |
| 3:A2:33:ARG:HD2    | 8:AB:467:G:OP1     | 1.90                     | 0.72              |
| 8:AB:134:G:H5''    | 8:AB:135:U:OP2     | 1.89                     | 0.72              |
| 8:AB:523:C:H4'     | 8:AB:540:C:O2      | 1.88                     | 0.72              |
| 8:AB:601:C:O2      | 8:AB:605:G:H4'     | 1.87                     | 0.72              |
| 8:AB:928:A:H4'     | 31:AY:37:ARG:HH11  | 1.53                     | 0.72              |
| 8:AB:1011:G:H5''   | 23:AQ:76:SER:OG    | 1.89                     | 0.72              |
| 8:AB:1392:A:H2'    | 8:AB:1393:A:C8     | 2.25                     | 0.72              |
| 9:AC:75:ALA:HA     | 9:AC:94:LEU:O      | 1.89                     | 0.72              |
| 11:AE:120:VAL:HG12 | 11:AE:121:VAL:H    | 1.54                     | 0.72              |
| 11:AE:148:ILE:HG13 | 11:AE:167:VAL:HG13 | 1.70                     | 0.72              |
| 14:AH:82:SER:HB3   | 14:AH:146:VAL:HG13 | 1.72                     | 0.72              |
| 16:AJ:40:HIS:H     | 16:AJ:40:HIS:HD2   | 1.35                     | 0.72              |
| 19:AM:89:VAL:O     | 19:AM:90:GLU:HG2   | 1.89                     | 0.72              |
| 23:AQ:89:ILE:HD11  | 23:AQ:91:ARG:HH11  | 1.53                     | 0.72              |
| 28:AV:5:ASN:HA     | 28:AV:64:VAL:HB    | 1.72                     | 0.72              |
| 29:AW:44:PHE:CZ    | 29:AW:60:ALA:HB3   | 2.24                     | 0.72              |
| 51:BS:48:ILE:HG22  | 51:BS:49:ALA:H     | 1.54                     | 0.72              |
| 8:CB:567:U:N3      | 8:CB:568:U:H5      | 1.88                     | 0.72              |
| 8:CB:1152:C:H3'    | 55:CB:5208:HOH:O   | 1.89                     | 0.72              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1220:G:H2'   | 8:CB:1221:C:C6     | 2.24                     | 0.72              |
| 8:CB:2233:U:H2'   | 8:CB:2234:G:C8     | 2.24                     | 0.72              |
| 10:CD:2:ILE:HG21  | 10:CD:203:VAL:O    | 1.89                     | 0.72              |
| 10:CD:115:GLY:HA2 | 10:CD:166:GLY:HA2  | 1.71                     | 0.72              |
| 17:CK:5:GLN:O     | 17:CK:21:CYS:HB3   | 1.90                     | 0.72              |
| 17:CK:17:ARG:CB   | 17:CK:45:GLU:HG2   | 2.19                     | 0.72              |
| 24:CR:18:GLN:CB   | 24:CR:99:THR:HA    | 2.18                     | 0.72              |
| 24:CR:66:HIS:HB2  | 24:CR:98:ILE:HG13  | 1.72                     | 0.72              |
| 26:CT:24:MET:CE   | 26:CT:30:ILE:HG13  | 2.18                     | 0.72              |
| 27:CU:39:ASN:HB2  | 27:CU:59:GLU:HB2   | 1.71                     | 0.72              |
| 28:CV:78:GLN:O    | 28:CV:87:GLN:HB2   | 1.87                     | 0.72              |
| 32:CZ:25:ARG:HG2  | 32:CZ:26:SER:H     | 1.54                     | 0.72              |
| 33:DA:411:A:C2'   | 33:DA:412:A:H4'    | 2.19                     | 0.72              |
| 33:DA:1415:G:N3   | 33:DA:1416:G:C8    | 2.56                     | 0.72              |
| 39:DG:95:ARG:O    | 39:DG:99:ALA:HB2   | 1.89                     | 0.72              |
| 42:DJ:57:VAL:HG22 | 42:DJ:58:ASN:H     | 1.54                     | 0.72              |
| 4:A3:42:HIS:CE1   | 4:A3:43:LEU:O      | 2.42                     | 0.72              |
| 8:AB:1568:G:H21   | 9:AC:58:LYS:HE3    | 1.54                     | 0.72              |
| 9:AC:12:ARG:NH1   | 9:AC:18:VAL:HG21   | 2.03                     | 0.72              |
| 13:AG:9:VAL:HG22  | 13:AG:11:PRO:HD3   | 1.70                     | 0.72              |
| 15:AI:72:THR:HB   | 15:AI:73:PRO:CD    | 2.19                     | 0.72              |
| 16:AJ:125:TYR:OH  | 16:AJ:134:ALA:HB2  | 1.89                     | 0.72              |
| 19:AM:105:MET:HA  | 19:AM:105:MET:CE   | 2.18                     | 0.72              |
| 24:AR:66:HIS:H    | 24:AR:98:ILE:HD12  | 1.55                     | 0.72              |
| 25:AS:21:ALA:O    | 25:AS:74:ILE:HD12  | 1.89                     | 0.72              |
| 27:AU:27:VAL:HG22 | 27:AU:28:LEU:H     | 1.55                     | 0.72              |
| 33:BA:337:G:H2'   | 33:BA:338:A:C8     | 2.24                     | 0.72              |
| 33:BA:708:C:H4'   | 43:BK:38:GLY:HA3   | 1.71                     | 0.72              |
| 33:BA:1263:C:H2'  | 33:BA:1264:U:O4'   | 1.89                     | 0.72              |
| 33:BA:1465:A:C6   | 33:BA:1466:C:C5    | 2.77                     | 0.72              |
| 44:BL:2:THR:HG22  | 44:BL:4:ASN:N      | 2.04                     | 0.72              |
| 46:BN:20:PHE:HE1  | 46:BN:51:PRO:HG2   | 1.55                     | 0.72              |
| 47:BO:42:PHE:C    | 47:BO:44:GLU:H     | 1.93                     | 0.72              |
| 8:CB:1021:A:H3'   | 8:CB:1021:A:C8     | 2.23                     | 0.72              |
| 8:CB:1029:A:H3'   | 8:CB:1030:C:C6     | 2.24                     | 0.72              |
| 8:CB:1059:G:N1    | 8:CB:1080:A:C2     | 2.57                     | 0.72              |
| 8:CB:1228:G:H2'   | 8:CB:1229:C:C6     | 2.25                     | 0.72              |
| 8:CB:1800:C:N3    | 8:CB:1818:U:O2     | 2.22                     | 0.72              |
| 8:CB:2017:U:H5''  | 8:CB:2018:G:P      | 2.30                     | 0.72              |
| 8:CB:2588:G:C5    | 8:CB:2589:A:N7     | 2.57                     | 0.72              |
| 11:CE:143:LEU:H   | 11:CE:143:LEU:HD22 | 1.55                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:CU:3:LYS:O      | 27:CU:4:ILE:HG12   | 1.88                     | 0.72              |
| 33:DA:1425:U:O2'   | 33:DA:1426:G:H5'   | 1.88                     | 0.72              |
| 36:DD:148:ALA:O    | 36:DD:151:GLN:HG2  | 1.90                     | 0.72              |
| 8:AB:188:G:H5''    | 32:AZ:12:ILE:CG2   | 2.19                     | 0.72              |
| 8:AB:378:C:C2'     | 8:AB:379:G:H5'     | 2.19                     | 0.72              |
| 8:AB:811:U:O2      | 8:AB:1251:C:C6     | 2.42                     | 0.72              |
| 8:AB:868:U:C4      | 8:AB:869:G:N7      | 2.58                     | 0.72              |
| 8:AB:1373:A:H5''   | 8:AB:1374:G:OP2    | 1.90                     | 0.72              |
| 8:AB:2282:G:C5     | 8:AB:2425:A:C2     | 2.77                     | 0.72              |
| 8:AB:2445:G:N7     | 55:AB:4636:HOH:O   | 2.21                     | 0.72              |
| 8:AB:2471:A:H61    | 8:AB:2479:U:H3     | 1.38                     | 0.72              |
| 9:AC:181:ARG:HH12  | 9:AC:260:LYS:HD3   | 1.54                     | 0.72              |
| 11:AE:83:VAL:O     | 11:AE:85:PHE:N     | 2.21                     | 0.72              |
| 11:AE:98:LYS:HE3   | 11:AE:102:ARG:HH21 | 1.54                     | 0.72              |
| 19:AM:88:ASN:N     | 19:AM:88:ASN:HD22  | 1.88                     | 0.72              |
| 22:AP:59:THR:O     | 22:AP:60:VAL:HG13  | 1.88                     | 0.72              |
| 32:AZ:12:ILE:HD12  | 32:AZ:13:THR:HA    | 1.72                     | 0.72              |
| 33:BA:627:G:H2'    | 33:BA:628:G:H8     | 1.54                     | 0.72              |
| 33:BA:784:A:N1     | 33:BA:798:U:O4     | 2.23                     | 0.72              |
| 33:BA:829:G:H2'    | 33:BA:830:G:H8     | 1.54                     | 0.72              |
| 33:BA:1191:A:H8    | 33:BA:1191:A:C5'   | 2.02                     | 0.72              |
| 36:BD:200:VAL:HG22 | 36:BD:201:GLU:HG3  | 1.70                     | 0.72              |
| 1:C0:40:HIS:ND1    | 1:C0:41:HIS:N      | 2.37                     | 0.72              |
| 8:CB:188:G:H5''    | 32:CZ:12:ILE:HG21  | 1.71                     | 0.72              |
| 8:CB:748:G:C8      | 8:CB:750:A:N7      | 2.57                     | 0.72              |
| 8:CB:994:C:OP1     | 23:CQ:49:ARG:CZ    | 2.36                     | 0.72              |
| 8:CB:1707:G:H2'    | 8:CB:1708:C:H5'    | 1.70                     | 0.72              |
| 8:CB:2201:G:H5''   | 8:CB:2201:G:H8     | 1.53                     | 0.72              |
| 8:CB:2428:G:O2'    | 18:CL:56:PRO:HG3   | 1.90                     | 0.72              |
| 8:CB:2591:C:C2'    | 8:CB:2592:G:H8     | 2.01                     | 0.72              |
| 8:CB:2745:C:H3'    | 8:CB:2746:U:H6     | 1.54                     | 0.72              |
| 10:CD:14:ILE:HA    | 10:CD:19:GLY:HA2   | 1.71                     | 0.72              |
| 10:CD:33:ARG:NH2   | 10:CD:87:GLY:HA3   | 2.04                     | 0.72              |
| 10:CD:122:VAL:HG11 | 10:CD:141:ARG:HH11 | 1.54                     | 0.72              |
| 13:CG:97:VAL:CG2   | 13:CG:124:CYS:H    | 1.96                     | 0.72              |
| 20:CN:97:ILE:HD13  | 20:CN:97:ILE:H     | 1.54                     | 0.72              |
| 25:CS:75:PHE:CE1   | 25:CS:104:THR:OG1  | 2.43                     | 0.72              |
| 31:CY:2:LYS:N      | 31:CY:37:ARG:HB2   | 2.04                     | 0.72              |
| 33:DA:376:G:H2'    | 33:DA:377:G:H8     | 1.53                     | 0.72              |
| 33:DA:1477:U:H2'   | 33:DA:1478:U:C6    | 2.24                     | 0.72              |
| 42:DJ:10:LEU:HD12  | 42:DJ:72:ARG:HB2   | 1.70                     | 0.72              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:A0:52:LYS:HD2    | 1:A0:52:LYS:N     | 2.05                     | 0.72              |
| 8:AB:566:U:H4'     | 55:AB:4383:HOH:O  | 1.89                     | 0.72              |
| 8:AB:679:C:H2'     | 8:AB:680:C:C6     | 2.24                     | 0.72              |
| 8:AB:2713:U:H3'    | 8:AB:2714:G:H5''  | 1.72                     | 0.72              |
| 17:AK:17:ARG:CB    | 17:AK:45:GLU:HG2  | 2.19                     | 0.72              |
| 19:AM:108:VAL:HG21 | 19:AM:111:GLU:OE2 | 1.88                     | 0.72              |
| 20:AN:97:ILE:H     | 20:AN:97:ILE:HD13 | 1.53                     | 0.72              |
| 23:AQ:4:LYS:HB2    | 23:AQ:4:LYS:NZ    | 2.04                     | 0.72              |
| 23:AQ:33:VAL:O     | 23:AQ:34:ALA:C    | 2.28                     | 0.72              |
| 33:BA:1323:G:H4'   | 33:BA:1362:A:C2   | 2.25                     | 0.72              |
| 33:BA:1493:A:O2'   | 33:BA:1494:G:H5'' | 1.89                     | 0.72              |
| 33:BA:1526:G:OP2   | 53:BU:38:GLU:HB3  | 1.89                     | 0.72              |
| 40:BH:79:ARG:HH11  | 40:BH:79:ARG:CG   | 2.02                     | 0.72              |
| 8:CB:442:G:N3      | 8:CB:444:C:C5     | 2.58                     | 0.72              |
| 8:CB:565:C:H4'     | 8:CB:1253:A:N1    | 2.05                     | 0.72              |
| 8:CB:1022:G:C6     | 8:CB:1140:C:C4    | 2.78                     | 0.72              |
| 8:CB:2439:A:H4'    | 8:CB:2440:C:O5'   | 1.90                     | 0.72              |
| 8:CB:2444:G:P      | 11:CE:63:LYS:NZ   | 2.63                     | 0.72              |
| 8:CB:2856:A:H2'    | 8:CB:2857:G:O4'   | 1.89                     | 0.72              |
| 16:CJ:94:ALA:HA    | 16:CJ:97:PRO:HG3  | 1.70                     | 0.72              |
| 19:CM:5:LYS:HG2    | 19:CM:6:ARG:N     | 2.05                     | 0.72              |
| 24:CR:4:VAL:HA     | 24:CR:43:ASN:CG   | 2.10                     | 0.72              |
| 29:CW:44:PHE:HB3   | 29:CW:77:LYS:O    | 1.90                     | 0.72              |
| 33:DA:78:A:H61     | 33:DA:91:U:H3     | 1.37                     | 0.72              |
| 33:DA:342:C:H2'    | 33:DA:343:U:H5'   | 1.72                     | 0.72              |
| 33:DA:684:U:O2'    | 33:DA:685:G:H5'   | 1.90                     | 0.72              |
| 35:DC:63:ILE:HG23  | 35:DC:98:ALA:HA   | 1.70                     | 0.72              |
| 36:DD:164:ARG:O    | 36:DD:166:LYS:N   | 2.23                     | 0.72              |
| 39:DG:73:GLU:HA    | 39:DG:140:VAL:CG1 | 2.19                     | 0.72              |
| 51:DS:68:HIS:HB3   | 51:DS:72:GLU:OE2  | 1.89                     | 0.72              |
| 53:DU:16:ARG:HB3   | 53:DU:20:ARG:NH1  | 2.04                     | 0.72              |
| 8:AB:83:A:N6       | 8:AB:101:A:P      | 2.63                     | 0.72              |
| 8:AB:118:A:H1'     | 8:AB:178:G:O4'    | 1.89                     | 0.72              |
| 8:AB:451:U:C2      | 8:AB:453:A:N7     | 2.58                     | 0.72              |
| 8:AB:574:A:OP2     | 55:AB:4322:HOH:O  | 2.08                     | 0.72              |
| 8:AB:2058:A:H8     | 8:AB:2058:A:C5'   | 2.01                     | 0.72              |
| 8:AB:2233:U:H2'    | 8:AB:2234:G:C8    | 2.24                     | 0.72              |
| 8:AB:2391:G:H1     | 8:AB:2424:C:H3'   | 1.54                     | 0.72              |
| 10:AD:129:THR:HA   | 10:AD:140:HIS:NE2 | 2.04                     | 0.72              |
| 11:AE:197:GLU:O    | 11:AE:199:MET:HG2 | 1.88                     | 0.72              |
| 13:AG:18:ILE:HG22  | 13:AG:23:ILE:CD1  | 2.19                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:AR:75:VAL:H     | 24:AR:90:ARG:NE    | 1.87                     | 0.72              |
| 33:BA:593:U:C4     | 33:BA:594:U:C4     | 2.77                     | 0.72              |
| 33:BA:923:A:H2'    | 33:BA:924:C:C6     | 2.25                     | 0.72              |
| 33:BA:939:G:H4'    | 39:BG:101:ARG:HH12 | 1.55                     | 0.72              |
| 33:BA:1253:G:H8    | 33:BA:1253:G:C5'   | 2.03                     | 0.72              |
| 37:BE:22:LYS:HB3   | 37:BE:29:ILE:CG1   | 2.20                     | 0.72              |
| 1:C0:47:TYR:CD2    | 1:C0:51:ARG:HG2    | 2.25                     | 0.72              |
| 8:CB:376:G:H2'     | 8:CB:377:G:C8      | 2.25                     | 0.72              |
| 8:CB:533:G:H5''    | 8:CB:533:G:H8      | 1.54                     | 0.72              |
| 8:CB:777:G:C2      | 8:CB:778:G:C8      | 2.77                     | 0.72              |
| 8:CB:1307:A:C2     | 8:CB:1622:G:C2     | 2.77                     | 0.72              |
| 8:CB:1663:G:H8     | 8:CB:1663:G:C5'    | 2.02                     | 0.72              |
| 8:CB:2423:U:O4'    | 8:CB:2425:A:N7     | 2.23                     | 0.72              |
| 8:CB:2811:G:H5'    | 10:CD:62:LYS:HE3   | 1.70                     | 0.72              |
| 33:DA:1330:U:H4'   | 45:DM:69:ARG:NH2   | 2.05                     | 0.72              |
| 33:DA:1438:G:C2    | 33:DA:1464:U:O2    | 2.42                     | 0.72              |
| 35:DC:152:VAL:HG22 | 35:DC:197:VAL:HG13 | 1.70                     | 0.72              |
| 35:DC:185:THR:HB   | 35:DC:197:VAL:O    | 1.90                     | 0.72              |
| 38:DF:9:MET:CE     | 50:DR:64:LEU:HD23  | 2.20                     | 0.72              |
| 38:DF:11:HIS:HD2   | 38:DF:14:GLN:H     | 1.38                     | 0.72              |
| 5:A4:22:VAL:CB     | 5:A4:24:ARG:HH21   | 2.01                     | 0.72              |
| 8:AB:220:G:H2'     | 8:AB:427:U:O4      | 1.89                     | 0.72              |
| 8:AB:592:A:C6      | 8:AB:593:U:C4      | 2.77                     | 0.72              |
| 8:AB:762:U:O2      | 8:AB:763:G:C6      | 2.42                     | 0.72              |
| 8:AB:986:C:H2'     | 8:AB:987:C:H5'     | 1.71                     | 0.72              |
| 8:AB:1190:G:H8     | 8:AB:1190:G:O5'    | 1.71                     | 0.72              |
| 8:AB:1190:G:OP1    | 18:AL:41:ARG:NE    | 2.22                     | 0.72              |
| 8:AB:1220:G:H2'    | 8:AB:1221:C:H6     | 1.53                     | 0.72              |
| 8:AB:1353:A:C8     | 8:AB:1378:A:N6     | 2.57                     | 0.72              |
| 8:AB:1819:A:OP2    | 9:AC:153:LEU:HB2   | 1.90                     | 0.72              |
| 8:AB:2358:A:H5'    | 8:AB:2358:A:C8     | 2.25                     | 0.72              |
| 8:AB:2502:G:H5'    | 8:AB:2503:A:H5''   | 1.72                     | 0.72              |
| 8:AB:2751:G:N2     | 13:AG:2:ARG:H      | 1.88                     | 0.72              |
| 10:AD:60:VAL:HA    | 10:AD:62:LYS:HZ1   | 1.55                     | 0.72              |
| 10:AD:208:LYS:HE3  | 10:AD:209:ALA:N    | 2.05                     | 0.72              |
| 11:AE:84:THR:HG23  | 11:AE:85:PHE:H     | 1.54                     | 0.72              |
| 15:AI:7:TYR:HB3    | 15:AI:59:THR:HA    | 1.72                     | 0.72              |
| 20:AN:62:ASN:HB3   | 20:AN:80:PHE:CE2   | 2.25                     | 0.72              |
| 21:AO:48:LEU:O     | 21:AO:49:VAL:HB    | 1.87                     | 0.72              |
| 23:AQ:35:PHE:N     | 23:AQ:35:PHE:CD2   | 2.57                     | 0.72              |
| 33:BA:774:G:C5     | 33:BA:775:G:C5     | 2.78                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1198:G:N2    | 42:BJ:55:PRO:HD2   | 2.04                     | 0.72              |
| 43:BK:23:HIS:HA    | 43:BK:86:LYS:O     | 1.89                     | 0.72              |
| 49:BQ:76:ARG:HH21  | 49:BQ:78:VAL:HG13  | 1.52                     | 0.72              |
| 5:C4:9:LYS:HD3     | 5:C4:9:LYS:N       | 2.05                     | 0.72              |
| 8:CB:51:G:N2       | 8:CB:119:A:C4      | 2.58                     | 0.72              |
| 8:CB:584:C:OP2     | 23:CQ:5:ARG:HD3    | 1.90                     | 0.72              |
| 8:CB:1568:G:H5''   | 9:CC:60:ALA:CB     | 2.20                     | 0.72              |
| 8:CB:1756:G:H3'    | 8:CB:1756:G:H8     | 1.55                     | 0.72              |
| 8:CB:2082:A:C6     | 8:CB:2239:G:N3     | 2.58                     | 0.72              |
| 8:CB:2831:G:H1'    | 8:CB:2883:A:H2'    | 1.71                     | 0.72              |
| 9:CC:75:ALA:HA     | 9:CC:94:LEU:O      | 1.90                     | 0.72              |
| 9:CC:124:LYS:HB2   | 9:CC:125:PRO:HD3   | 1.71                     | 0.72              |
| 11:CE:138:LEU:HD11 | 11:CE:187:VAL:HG13 | 1.72                     | 0.72              |
| 18:CL:18:ARG:NH1   | 18:CL:20:GLY:HA3   | 2.04                     | 0.72              |
| 26:CT:43:ILE:O     | 26:CT:47:VAL:HG12  | 1.90                     | 0.72              |
| 33:DA:448:A:N6     | 33:DA:449:G:C2     | 2.58                     | 0.72              |
| 37:DE:98:ALA:HB1   | 37:DE:102:THR:HG21 | 1.72                     | 0.72              |
| 8:AB:1275:A:N7     | 20:AN:16:HIS:CE1   | 2.57                     | 0.72              |
| 9:AC:51:ARG:NH2    | 9:AC:54:GLY:HA3    | 2.05                     | 0.72              |
| 9:AC:63:ILE:O      | 9:AC:64:VAL:HG13   | 1.90                     | 0.72              |
| 16:AJ:35:ARG:HH11  | 16:AJ:40:HIS:HB2   | 1.52                     | 0.72              |
| 17:AK:11:ALA:HB3   | 17:AK:85:VAL:HG23  | 1.70                     | 0.72              |
| 22:AP:26:GLU:HA    | 22:AP:47:ILE:HB    | 1.71                     | 0.72              |
| 22:AP:105:LYS:HG3  | 22:AP:107:ALA:H    | 1.54                     | 0.72              |
| 30:AX:4:LYS:O      | 30:AX:4:LYS:HG2    | 1.89                     | 0.72              |
| 36:BD:90:LEU:HA    | 36:BD:93:LEU:CD1   | 2.20                     | 0.72              |
| 44:BL:29:LYS:N     | 44:BL:81:ILE:HG22  | 1.98                     | 0.72              |
| 3:C2:18:PHE:HD1    | 8:CB:126:A:O4'     | 1.72                     | 0.72              |
| 8:CB:190:A:C8      | 8:CB:207:A:C6      | 2.78                     | 0.72              |
| 8:CB:572:A:C2      | 8:CB:2033:A:C2     | 2.78                     | 0.72              |
| 8:CB:575:A:C2'     | 8:CB:576:U:H5''    | 2.20                     | 0.72              |
| 8:CB:1360:G:H2'    | 8:CB:1361:G:H5'    | 1.72                     | 0.72              |
| 8:CB:1797:G:N2     | 8:CB:1823:G:C4     | 2.58                     | 0.72              |
| 9:CC:201:LEU:O     | 9:CC:201:LEU:HD23  | 1.90                     | 0.72              |
| 9:CC:208:GLY:CA    | 9:CC:212:TRP:HB2   | 2.20                     | 0.72              |
| 10:CD:129:THR:HA   | 10:CD:140:HIS:CE1  | 2.25                     | 0.72              |
| 10:CD:153:GLY:C    | 10:CD:155:VAL:H    | 1.93                     | 0.72              |
| 12:CF:89:THR:C     | 12:CF:90:LEU:HD12  | 2.11                     | 0.72              |
| 16:CJ:116:ARG:HH11 | 16:CJ:116:ARG:CG   | 2.02                     | 0.72              |
| 21:CO:80:GLU:O     | 21:CO:83:LEU:HD13  | 1.90                     | 0.72              |
| 22:CP:59:THR:O     | 22:CP:60:VAL:HG13  | 1.88                     | 0.72              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:CS:11:ARG:HG3   | 25:CS:11:ARG:NH1   | 2.00                     | 0.72              |
| 26:CT:62:VAL:HG23  | 26:CT:63:VAL:N     | 2.04                     | 0.72              |
| 32:CZ:3:LYS:HE3    | 32:CZ:30:HIS:H     | 1.55                     | 0.72              |
| 33:DA:673:A:O5'    | 33:DA:673:A:H8     | 1.72                     | 0.72              |
| 33:DA:780:A:H3'    | 33:DA:780:A:C8     | 2.25                     | 0.72              |
| 33:DA:907:A:C4     | 33:DA:908:A:C8     | 2.78                     | 0.72              |
| 33:DA:914:A:C2     | 33:DA:915:A:C4     | 2.78                     | 0.72              |
| 33:DA:1053:G:N7    | 33:DA:1199:U:H2'   | 2.04                     | 0.72              |
| 33:DA:1069:C:O2'   | 33:DA:1192:C:H1'   | 1.89                     | 0.72              |
| 33:DA:1296:C:H4'   | 33:DA:1302:C:N4    | 2.05                     | 0.72              |
| 34:DB:89:PHE:O     | 34:DB:90:PHE:HB3   | 1.87                     | 0.72              |
| 37:DE:82:HIS:HB2   | 37:DE:83:PRO:CD    | 2.17                     | 0.72              |
| 40:DH:93:LYS:O     | 40:DH:94:VAL:HB    | 1.90                     | 0.72              |
| 8:AB:210:C:O2'     | 8:AB:211:C:H5'     | 1.90                     | 0.71              |
| 8:AB:464:U:H2'     | 8:AB:465:G:C8      | 2.25                     | 0.71              |
| 8:AB:666:A:C5      | 8:AB:667:U:H5      | 2.07                     | 0.71              |
| 8:AB:782:A:H4'     | 8:AB:783:A:OP1     | 1.90                     | 0.71              |
| 8:AB:877:A:H2'     | 8:AB:899:A:H61     | 1.55                     | 0.71              |
| 8:AB:1771:C:H2'    | 8:AB:1772:A:H8     | 1.55                     | 0.71              |
| 8:AB:2661:G:H2'    | 8:AB:2662:A:C8     | 2.25                     | 0.71              |
| 11:AE:146:VAL:HG23 | 11:AE:148:ILE:HG22 | 1.70                     | 0.71              |
| 11:AE:189:THR:C    | 11:AE:191:ASP:H    | 1.90                     | 0.71              |
| 19:AM:105:MET:CG   | 19:AM:106:ASP:H    | 1.97                     | 0.71              |
| 33:BA:33:A:O5'     | 33:BA:33:A:H8      | 1.73                     | 0.71              |
| 33:BA:408:A:H3'    | 33:BA:409:U:C5     | 2.25                     | 0.71              |
| 33:BA:783:C:O2'    | 33:BA:784:A:H5'    | 1.90                     | 0.71              |
| 33:BA:988:G:H1     | 33:BA:1217:C:H42   | 1.36                     | 0.71              |
| 36:BD:195:ASN:ND2  | 36:BD:195:ASN:H    | 1.85                     | 0.71              |
| 48:BP:68:SER:HB3   | 48:BP:71:VAL:HG12  | 1.71                     | 0.71              |
| 8:CB:65:U:C1'      | 26:CT:74:ILE:HD12  | 2.20                     | 0.71              |
| 8:CB:122:G:H3'     | 8:CB:123:G:C8      | 2.26                     | 0.71              |
| 8:CB:666:A:C5      | 8:CB:667:U:H5      | 2.08                     | 0.71              |
| 8:CB:749:A:H1'     | 8:CB:1618:A:OP1    | 1.90                     | 0.71              |
| 8:CB:811:U:O2      | 8:CB:1251:C:C6     | 2.43                     | 0.71              |
| 8:CB:1675:C:C5     | 8:CB:1676:A:N7     | 2.58                     | 0.71              |
| 8:CB:1975:G:H2'    | 8:CB:1976:U:H6     | 1.54                     | 0.71              |
| 8:CB:2070:A:C2     | 8:CB:2071:A:C4     | 2.77                     | 0.71              |
| 8:CB:2525:G:N2     | 8:CB:2526:G:C6     | 2.58                     | 0.71              |
| 8:CB:2738:A:C2     | 8:CB:2767:C:N3     | 2.57                     | 0.71              |
| 14:CH:99:ILE:HG13  | 14:CH:99:ILE:O     | 1.90                     | 0.71              |
| 19:CM:61:GLY:O     | 19:CM:62:LYS:HG2   | 1.90                     | 0.71              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:DA:376:G:C6   | 33:DA:389:A:N1     | 2.58                     | 0.71              |
| 33:DA:1427:C:C2' | 33:DA:1428:A:H5'   | 2.20                     | 0.71              |
| 33:DA:1466:C:H2' | 33:DA:1467:C:H6    | 1.56                     | 0.71              |
| 8:AB:32:C:N4     | 8:AB:473:G:H1      | 1.87                     | 0.71              |
| 8:AB:91:A:H3'    | 8:AB:91:A:H8       | 1.55                     | 0.71              |
| 8:AB:140:C:H5'   | 8:AB:141:G:H21     | 1.54                     | 0.71              |
| 8:AB:849:A:O2'   | 31:AY:20:LYS:HD2   | 1.90                     | 0.71              |
| 8:AB:1756:G:H3'  | 8:AB:1756:G:H8     | 1.54                     | 0.71              |
| 8:AB:2671:G:C2   | 8:AB:2672:U:O2     | 2.43                     | 0.71              |
| 8:AB:2717:C:H1'  | 22:AP:95:LYS:NZ    | 2.05                     | 0.71              |
| 9:AC:208:GLY:HA2 | 9:AC:212:TRP:HB2   | 1.72                     | 0.71              |
| 10:AD:1:MET:H2   | 10:AD:81:GLU:CG    | 2.03                     | 0.71              |
| 10:AD:149:ASN:C  | 10:AD:151:THR:H    | 1.92                     | 0.71              |
| 16:AJ:100:VAL:C  | 16:AJ:101:ILE:HG12 | 2.09                     | 0.71              |
| 20:AN:29:VAL:CG2 | 20:AN:75:ILE:HD11  | 2.20                     | 0.71              |
| 21:AO:8:ILE:HG22 | 21:AO:9:ARG:H      | 1.54                     | 0.71              |
| 21:AO:77:ALA:HB1 | 21:AO:81:ARG:HD3   | 1.72                     | 0.71              |
| 25:AS:3:THR:HG21 | 25:AS:58:ALA:HB2   | 1.71                     | 0.71              |
| 30:AX:48:ARG:HG2 | 30:AX:49:ASP:N     | 2.03                     | 0.71              |
| 33:BA:291:U:H1'  | 33:BA:310:G:N2     | 2.04                     | 0.71              |
| 33:BA:462:G:H1   | 33:BA:470:C:H42    | 1.36                     | 0.71              |
| 33:BA:651:C:H2'  | 33:BA:652:U:H6     | 1.55                     | 0.71              |
| 33:BA:1137:C:H1' | 33:BA:1138:G:N2    | 2.05                     | 0.71              |
| 43:BK:74:LYS:HE2 | 43:BK:104:PHE:HE1  | 1.54                     | 0.71              |
| 3:C2:10:LEU:HD12 | 8:CB:125:A:N1      | 2.05                     | 0.71              |
| 8:CB:1272:A:OP1  | 55:CB:5233:HOH:O   | 2.08                     | 0.71              |
| 8:CB:1771:C:N4   | 8:CB:1772:A:H62    | 1.87                     | 0.71              |
| 8:CB:2358:A:H61  | 8:CB:2428:G:H22    | 1.38                     | 0.71              |
| 8:CB:2683:C:H2'  | 8:CB:2684:U:H5'    | 1.72                     | 0.71              |
| 19:CM:80:VAL:CG1 | 19:CM:81:ARG:N     | 2.52                     | 0.71              |
| 33:DA:9:G:N2     | 33:DA:26:A:C4      | 2.58                     | 0.71              |
| 33:DA:451:A:H1'  | 33:DA:452:A:C8     | 2.24                     | 0.71              |
| 33:DA:859:G:H2'  | 33:DA:860:A:C8     | 2.25                     | 0.71              |
| 33:DA:952:U:O5'  | 33:DA:952:U:H6     | 1.73                     | 0.71              |
| 2:A1:12:SER:HA   | 2:A1:50:GLU:CB     | 2.19                     | 0.71              |
| 3:A2:19:ARG:N    | 8:AB:126:A:OP2     | 2.23                     | 0.71              |
| 6:A5:158:VAL:C   | 6:A5:160:LYS:H     | 1.90                     | 0.71              |
| 8:AB:1220:G:N2   | 8:AB:1221:C:C2     | 2.58                     | 0.71              |
| 8:AB:1453:A:H8   | 8:AB:1453:A:H5''   | 1.54                     | 0.71              |
| 8:AB:1608:A:C8   | 8:AB:1611:C:N4     | 2.58                     | 0.71              |
| 8:AB:2431:U:H2'  | 8:AB:2432:A:H5''   | 1.70                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2442:C:N4    | 8:AB:2443:C:H41    | 1.87                     | 0.71              |
| 10:AD:1:MET:N     | 10:AD:81:GLU:HB3   | 2.04                     | 0.71              |
| 19:AM:71:LYS:HE2  | 19:AM:93:VAL:CA    | 2.21                     | 0.71              |
| 22:AP:13:LYS:HD3  | 22:AP:78:PRO:HA    | 1.70                     | 0.71              |
| 22:AP:71:ARG:NH2  | 22:AP:102:ARG:HB3  | 2.05                     | 0.71              |
| 33:BA:394:G:H2'   | 33:BA:395:C:C5     | 2.25                     | 0.71              |
| 33:BA:409:U:O5'   | 33:BA:409:U:H6     | 1.74                     | 0.71              |
| 33:BA:586:C:C5    | 33:BA:587:G:N7     | 2.58                     | 0.71              |
| 36:BD:183:ARG:HB2 | 36:BD:183:ARG:HH11 | 1.54                     | 0.71              |
| 39:BG:86:VAL:HG13 | 39:BG:151:ALA:HA   | 1.70                     | 0.71              |
| 44:BL:35:ARG:NH1  | 44:BL:75:GLU:HB3   | 1.99                     | 0.71              |
| 2:C1:50:GLU:HG2   | 2:C1:51:ALA:H      | 1.55                     | 0.71              |
| 8:CB:71:A:H4'     | 8:CB:72:U:H5''     | 1.71                     | 0.71              |
| 8:CB:378:C:C2'    | 8:CB:379:G:H5'     | 2.19                     | 0.71              |
| 8:CB:899:A:H4'    | 8:CB:899:A:OP1     | 1.88                     | 0.71              |
| 8:CB:2074:U:N3    | 8:CB:2436:G:C2     | 2.57                     | 0.71              |
| 8:CB:2478:A:H5''  | 8:CB:2478:A:H8     | 1.55                     | 0.71              |
| 8:CB:2734:A:C8    | 8:CB:2735:G:C8     | 2.78                     | 0.71              |
| 10:CD:68:PHE:O    | 10:CD:90:PHE:HB3   | 1.89                     | 0.71              |
| 11:CE:6:LYS:HG2   | 11:CE:119:ILE:HB   | 1.71                     | 0.71              |
| 11:CE:49:ARG:O    | 11:CE:51:GLU:N     | 2.23                     | 0.71              |
| 11:CE:124:PHE:CZ  | 11:CE:137:LYS:HG3  | 2.25                     | 0.71              |
| 16:CJ:132:HIS:O   | 16:CJ:136:GLN:HB2  | 1.91                     | 0.71              |
| 34:DB:22:TRP:CH2  | 34:DB:24:PRO:HA    | 2.24                     | 0.71              |
| 35:DC:104:GLU:O   | 35:DC:106:ARG:HD2  | 1.90                     | 0.71              |
| 40:DH:78:SER:HB3  | 40:DH:125:ILE:HA   | 1.73                     | 0.71              |
| 43:DK:74:LYS:HE2  | 43:DK:79:LYS:CD    | 2.20                     | 0.71              |
| 2:A1:15:GLY:HA3   | 2:A1:47:ILE:CD1    | 2.21                     | 0.71              |
| 8:AB:1:G:H2'      | 8:AB:2:G:H8        | 1.54                     | 0.71              |
| 8:AB:379:G:N1     | 8:AB:396:G:C6      | 2.58                     | 0.71              |
| 8:AB:604:G:H5''   | 8:AB:604:G:C8      | 2.24                     | 0.71              |
| 8:AB:817:C:H2'    | 8:AB:818:G:O4'     | 1.90                     | 0.71              |
| 8:AB:1228:G:H2'   | 8:AB:1229:C:C6     | 2.24                     | 0.71              |
| 8:AB:1233:C:H2'   | 8:AB:1234:U:C6     | 2.25                     | 0.71              |
| 8:AB:1804:C:OP1   | 9:AC:254:LYS:HG2   | 1.90                     | 0.71              |
| 8:AB:1960:A:C5    | 8:AB:1961:C:C5     | 2.78                     | 0.71              |
| 10:AD:3:GLY:O     | 10:AD:4:LEU:HB3    | 1.90                     | 0.71              |
| 10:AD:174:SER:HB2 | 10:AD:208:LYS:CG   | 2.19                     | 0.71              |
| 11:AE:137:LYS:HD2 | 11:AE:137:LYS:H    | 1.54                     | 0.71              |
| 14:AH:43:ASN:H    | 14:AH:43:ASN:ND2   | 1.84                     | 0.71              |
| 18:AL:57:LEU:HB2  | 18:AL:58:TYR:CD2   | 2.24                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 24:AR:39:LEU:HD11 | 24:AR:59:ILE:H     | 1.55                     | 0.71              |
| 25:AS:5:ALA:HB3   | 25:AS:54:ALA:HB2   | 1.71                     | 0.71              |
| 26:AT:68:LYS:HA   | 26:AT:75:GLY:HA3   | 1.71                     | 0.71              |
| 32:AZ:6:HIS:HB2   | 32:AZ:51:VAL:HG13  | 1.72                     | 0.71              |
| 32:AZ:15:SER:H    | 32:AZ:23:LYS:HG3   | 1.55                     | 0.71              |
| 33:BA:434:U:H5'   | 33:BA:435:A:OP2    | 1.90                     | 0.71              |
| 33:BA:819:A:N7    | 33:BA:1529:G:C2    | 2.59                     | 0.71              |
| 33:BA:1102:A:H5'' | 33:BA:1102:A:C8    | 2.21                     | 0.71              |
| 33:BA:1197:A:O2'  | 33:BA:1198:G:H5'   | 1.90                     | 0.71              |
| 39:BG:115:MET:HA  | 39:BG:118:ARG:HB2  | 1.70                     | 0.71              |
| 46:BN:82:LYS:HA   | 46:BN:82:LYS:NZ    | 2.05                     | 0.71              |
| 5:C4:32:LYS:HE2   | 13:CG:172:GLU:CB   | 2.20                     | 0.71              |
| 8:CB:978:G:N1     | 8:CB:986:C:C4      | 2.58                     | 0.71              |
| 8:CB:2722:G:C4    | 8:CB:2723:C:C5     | 2.78                     | 0.71              |
| 8:CB:2856:A:H8    | 8:CB:2856:A:H5'    | 1.56                     | 0.71              |
| 12:CF:33:ILE:HG22 | 12:CF:155:ILE:HG12 | 1.70                     | 0.71              |
| 33:DA:382:A:C2    | 33:DA:383:A:N7     | 2.58                     | 0.71              |
| 33:DA:410:G:OP1   | 36:DD:25:ARG:HD3   | 1.90                     | 0.71              |
| 33:DA:620:C:O2'   | 33:DA:621:A:H5'    | 1.90                     | 0.71              |
| 33:DA:1075:U:H4'  | 33:DA:1101:A:N6    | 2.05                     | 0.71              |
| 33:DA:1394:A:N7   | 33:DA:1501:C:O4'   | 2.23                     | 0.71              |
| 41:DI:38:PHE:O    | 41:DI:44:ARG:HG3   | 1.90                     | 0.71              |
| 49:DQ:30:HIS:CE1  | 49:DQ:31:PRO:HG2   | 2.26                     | 0.71              |
| 8:AB:173:A:H2'    | 8:AB:174:U:C6      | 2.25                     | 0.71              |
| 8:AB:1046:A:H4'   | 8:AB:1047:G:H5''   | 1.73                     | 0.71              |
| 8:AB:1570:A:H2'   | 8:AB:1571:A:H8     | 1.51                     | 0.71              |
| 8:AB:2331:G:HO2'  | 29:AW:69:GLU:HG3   | 1.53                     | 0.71              |
| 8:AB:2636:C:H4'   | 10:AD:80:TRP:CZ2   | 2.25                     | 0.71              |
| 10:AD:184:ARG:HA  | 10:AD:184:ARG:NE   | 2.05                     | 0.71              |
| 14:AH:89:LYS:NZ   | 14:AH:123:ARG:HD3  | 2.05                     | 0.71              |
| 16:AJ:41:LYS:HZ1  | 16:AJ:46:PRO:HD3   | 1.54                     | 0.71              |
| 17:AK:78:ARG:NH2  | 22:AP:102:ARG:HH12 | 1.89                     | 0.71              |
| 17:AK:84:CYS:O    | 17:AK:85:VAL:HB    | 1.89                     | 0.71              |
| 18:AL:124:GLY:C   | 18:AL:125:LEU:HG   | 2.09                     | 0.71              |
| 21:AO:67:ASN:HB2  | 21:AO:102:ARG:HH22 | 1.56                     | 0.71              |
| 33:BA:973:G:H1'   | 42:BJ:56:HIS:HB2   | 1.72                     | 0.71              |
| 46:BN:1:ALA:HB2   | 46:BN:67:GLY:HA3   | 1.73                     | 0.71              |
| 8:CB:65:U:O4'     | 26:CT:74:ILE:HG23  | 1.91                     | 0.71              |
| 8:CB:615:U:H3'    | 8:CB:616:A:C5'     | 2.18                     | 0.71              |
| 8:CB:2276:G:O2'   | 8:CB:2277:G:H5'    | 1.90                     | 0.71              |
| 8:CB:2456:C:C4    | 8:CB:2457:U:H5     | 2.09                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2769:U:H2'   | 8:CB:2770:G:C8     | 2.26                     | 0.71              |
| 10:CD:4:LEU:O     | 10:CD:4:LEU:HD23   | 1.89                     | 0.71              |
| 24:CR:10:LYS:O    | 24:CR:11:GLN:HB2   | 1.90                     | 0.71              |
| 33:DA:240:G:C8    | 33:DA:240:G:C5'    | 2.73                     | 0.71              |
| 33:DA:318:G:C4    | 33:DA:319:G:C8     | 2.78                     | 0.71              |
| 33:DA:692:U:O2    | 33:DA:694:A:C8     | 2.43                     | 0.71              |
| 33:DA:738:C:H2'   | 33:DA:739:C:C6     | 2.25                     | 0.71              |
| 33:DA:939:G:H2'   | 33:DA:940:C:C6     | 2.26                     | 0.71              |
| 33:DA:977:A:H8    | 33:DA:1223:C:N3    | 1.87                     | 0.71              |
| 34:DB:164:ASP:OD2 | 34:DB:166:ASP:HB3  | 1.89                     | 0.71              |
| 37:DE:108:GLY:O   | 37:DE:111:ARG:HG2  | 1.90                     | 0.71              |
| 38:DF:71:ILE:O    | 38:DF:75:GLU:HB2   | 1.90                     | 0.71              |
| 42:DJ:56:HIS:O    | 42:DJ:57:VAL:HG12  | 1.90                     | 0.71              |
| 44:DL:66:ILE:O    | 44:DL:66:ILE:HG22  | 1.89                     | 0.71              |
| 51:DS:36:ARG:CG   | 51:DS:36:ARG:HH11  | 2.02                     | 0.71              |
| 3:A2:3:ARG:NH1    | 55:A2:4001:HOH:O   | 2.22                     | 0.71              |
| 8:AB:140:C:H5'    | 8:AB:141:G:N2      | 2.04                     | 0.71              |
| 8:AB:2090:A:C6    | 8:AB:2091:C:N4     | 2.58                     | 0.71              |
| 8:AB:2371:G:C2    | 8:AB:2372:U:C5     | 2.78                     | 0.71              |
| 8:AB:2391:G:N2    | 8:AB:2424:C:H2'    | 2.02                     | 0.71              |
| 9:AC:243:PRO:HB3  | 9:AC:248:GLY:HA2   | 1.71                     | 0.71              |
| 11:AE:133:LEU:HB3 | 11:AE:136:GLN:CG   | 2.19                     | 0.71              |
| 12:AF:89:THR:C    | 12:AF:90:LEU:HD12  | 2.11                     | 0.71              |
| 14:AH:8:LYS:HG2   | 14:AH:14:SER:OG    | 1.90                     | 0.71              |
| 17:AK:32:TYR:CD1  | 17:AK:32:TYR:N     | 2.56                     | 0.71              |
| 25:AS:27:LYS:O    | 25:AS:28:LYS:HB2   | 1.89                     | 0.71              |
| 32:AZ:49:ARG:O    | 32:AZ:51:VAL:N     | 2.23                     | 0.71              |
| 33:BA:955:U:H3    | 33:BA:1225:A:H61   | 1.39                     | 0.71              |
| 37:BE:150:GLU:O   | 37:BE:152:VAL:HG23 | 1.90                     | 0.71              |
| 46:BN:12:ARG:HH11 | 46:BN:60:ARG:NH1   | 1.87                     | 0.71              |
| 8:CB:62:U:H2'     | 8:CB:63:A:C8       | 2.25                     | 0.71              |
| 8:CB:572:A:H8     | 8:CB:572:A:O5'     | 1.72                     | 0.71              |
| 8:CB:1541:C:H2'   | 8:CB:1542:U:H6     | 1.55                     | 0.71              |
| 8:CB:2415:G:H4'   | 18:CL:66:PHE:CD2   | 2.26                     | 0.71              |
| 8:CB:2722:G:H4'   | 20:CN:4:ARG:HB3    | 1.72                     | 0.71              |
| 8:CB:2745:C:O2'   | 13:CG:141:GLY:HA3  | 1.90                     | 0.71              |
| 9:CC:89:ASN:OD1   | 9:CC:199:HIS:HE1   | 1.72                     | 0.71              |
| 10:CD:101:PHE:HZ  | 10:CD:180:VAL:HG11 | 1.51                     | 0.71              |
| 11:CE:60:TRP:N    | 11:CE:60:TRP:CD1   | 2.55                     | 0.71              |
| 22:CP:3:ILE:O     | 22:CP:7:LEU:HD13   | 1.90                     | 0.71              |
| 24:CR:21:ARG:O    | 24:CR:96:VAL:HG12  | 1.91                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:811:C:O2'   | 33:DA:901:A:N1     | 2.23                     | 0.71              |
| 33:DA:865:A:H2'   | 33:DA:866:C:O4'    | 1.90                     | 0.71              |
| 33:DA:920:U:H2'   | 33:DA:921:U:C5     | 2.24                     | 0.71              |
| 33:DA:1526:G:N2   | 33:DA:1527:U:C2    | 2.59                     | 0.71              |
| 36:DD:58:GLN:O    | 36:DD:62:ARG:HG2   | 1.90                     | 0.71              |
| 48:DP:68:SER:O    | 48:DP:71:VAL:HG22  | 1.91                     | 0.71              |
| 8:AB:442:G:N3     | 8:AB:444:C:C5      | 2.59                     | 0.71              |
| 8:AB:1566:A:N3    | 9:AC:213:ARG:HG2   | 2.06                     | 0.71              |
| 8:AB:2243:U:H2'   | 8:AB:2244:U:H6     | 1.55                     | 0.71              |
| 8:AB:2455:G:C2    | 8:AB:2456:C:C4     | 2.78                     | 0.71              |
| 8:AB:2572:A:N7    | 10:AD:150:GLN:HB2  | 2.04                     | 0.71              |
| 10:AD:137:SER:OG  | 10:AD:138:LEU:CD2  | 2.39                     | 0.71              |
| 11:AE:3:LEU:HD13  | 11:AE:119:ILE:HD11 | 1.71                     | 0.71              |
| 11:AE:134:LEU:HA  | 11:AE:137:LYS:NZ   | 2.06                     | 0.71              |
| 24:AR:39:LEU:HD21 | 24:AR:60:LYS:H     | 1.54                     | 0.71              |
| 25:AS:29:VAL:CG1  | 25:AS:69:LEU:HB2   | 2.21                     | 0.71              |
| 27:AU:64:ILE:HD13 | 27:AU:65:GLN:N     | 2.05                     | 0.71              |
| 32:AZ:49:ARG:HG2  | 32:AZ:50:ASP:N     | 2.06                     | 0.71              |
| 33:BA:37:U:H1'    | 33:BA:548:G:N2     | 2.05                     | 0.71              |
| 33:BA:390:U:O2'   | 33:BA:391:G:H5'    | 1.91                     | 0.71              |
| 33:BA:541:G:N2    | 33:BA:542:G:C4     | 2.59                     | 0.71              |
| 33:BA:1017:U:H2'  | 33:BA:1018:G:C8    | 2.25                     | 0.71              |
| 36:BD:80:ARG:HB3  | 36:BD:80:ARG:HH11  | 1.55                     | 0.71              |
| 38:BF:11:HIS:HD2  | 38:BF:14:GLN:H     | 1.39                     | 0.71              |
| 45:BM:48:SER:O    | 45:BM:52:ILE:HG22  | 1.91                     | 0.71              |
| 8:CB:319:G:C4     | 8:CB:333:G:N2      | 2.58                     | 0.71              |
| 8:CB:679:C:H2'    | 8:CB:680:C:C6      | 2.26                     | 0.71              |
| 8:CB:1456:G:H2'   | 8:CB:1457:U:H5'    | 1.72                     | 0.71              |
| 10:CD:157:LYS:HE3 | 16:CJ:80:HIS:HA    | 1.72                     | 0.71              |
| 11:CE:114:ARG:HG3 | 11:CE:115:GLN:N    | 2.05                     | 0.71              |
| 14:CH:135:HIS:HB3 | 14:CH:138:VAL:HG23 | 1.73                     | 0.71              |
| 33:DA:674:G:C4    | 33:DA:675:A:N7     | 2.59                     | 0.71              |
| 33:DA:765:G:O6    | 33:DA:811:C:C4     | 2.44                     | 0.71              |
| 33:DA:1226:C:H2'  | 45:DM:102:LYS:CA   | 2.17                     | 0.71              |
| 33:DA:1376:U:C2   | 33:DA:1377:A:C8    | 2.78                     | 0.71              |
| 33:DA:1426:G:C4   | 33:DA:1475:G:C2    | 2.79                     | 0.71              |
| 36:DD:57:LYS:HG2  | 36:DD:57:LYS:O     | 1.89                     | 0.71              |
| 3:A2:39:ARG:O     | 3:A2:40:ALA:O      | 2.09                     | 0.71              |
| 8:AB:311:A:N1     | 8:AB:328:U:C5      | 2.58                     | 0.71              |
| 8:AB:856:G:N2     | 8:AB:922:C:C4      | 2.59                     | 0.71              |
| 8:AB:1022:G:N7    | 16:AJ:68:LYS:HE3   | 2.05                     | 0.71              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2333:A:O3'   | 21:AO:7:ARG:HB3   | 1.91                     | 0.71              |
| 19:AM:71:LYS:HE2  | 19:AM:93:VAL:HG12 | 1.72                     | 0.71              |
| 24:AR:80:ARG:O    | 24:AR:81:LYS:HG2  | 1.90                     | 0.71              |
| 27:AU:39:ASN:HD22 | 27:AU:42:LYS:CD   | 2.03                     | 0.71              |
| 28:AV:70:ILE:HD13 | 28:AV:71:LYS:H    | 1.56                     | 0.71              |
| 33:BA:77:A:H3'    | 33:BA:77:A:C8     | 2.26                     | 0.71              |
| 33:BA:552:U:H2'   | 33:BA:553:A:C8    | 2.24                     | 0.71              |
| 33:BA:734:G:H2'   | 33:BA:735:C:H6    | 1.55                     | 0.71              |
| 33:BA:1278:G:H4'  | 33:BA:1279:G:O5'  | 1.88                     | 0.71              |
| 8:CB:79:C:H2'     | 8:CB:346:A:C8     | 2.26                     | 0.71              |
| 8:CB:487:C:H2'    | 8:CB:488:G:H5'    | 1.72                     | 0.71              |
| 8:CB:538:A:C2     | 8:CB:556:A:N7     | 2.59                     | 0.71              |
| 8:CB:814:C:H1'    | 8:CB:1225:G:N2    | 2.05                     | 0.71              |
| 8:CB:1567:G:H21   | 9:CC:30:ALA:HB2   | 1.56                     | 0.71              |
| 8:CB:2599:G:C8    | 9:CC:234:GLY:HA2  | 2.26                     | 0.71              |
| 8:CB:2695:U:H6    | 8:CB:2695:U:H3'   | 1.55                     | 0.71              |
| 8:CB:2777:G:H3'   | 8:CB:2777:G:H8    | 1.55                     | 0.71              |
| 9:CC:144:GLU:HG2  | 9:CC:150:GLY:CA   | 2.17                     | 0.71              |
| 14:CH:24:GLY:O    | 14:CH:26:ALA:N    | 2.23                     | 0.71              |
| 23:CQ:46:TYR:OH   | 24:CR:89:HIS:CD2  | 2.43                     | 0.71              |
| 27:CU:66:VAL:HG13 | 27:CU:67:SER:N    | 2.03                     | 0.71              |
| 27:CU:98:ASN:O    | 27:CU:99:SER:HB2  | 1.91                     | 0.71              |
| 33:DA:438:U:O4    | 33:DA:494:G:H2'   | 1.90                     | 0.71              |
| 33:DA:693:G:H2'   | 33:DA:694:A:O4'   | 1.91                     | 0.71              |
| 33:DA:1106:G:C8   | 33:DA:1106:G:C5'  | 2.67                     | 0.71              |
| 7:AA:106:G:H3'    | 7:AA:107:G:H8     | 1.54                     | 0.71              |
| 8:AB:465:G:H2'    | 8:AB:466:A:N7     | 2.06                     | 0.71              |
| 8:AB:806:C:C2'    | 8:AB:807:U:H5'    | 2.21                     | 0.71              |
| 8:AB:863:A:O2'    | 8:AB:864:G:H5'    | 1.90                     | 0.71              |
| 8:AB:1271:G:H2'   | 55:AB:4504:HOH:O  | 1.88                     | 0.71              |
| 8:AB:1285:A:H2'   | 8:AB:1286:A:H5''  | 1.72                     | 0.71              |
| 8:AB:1360:G:H2'   | 8:AB:1361:G:H5'   | 1.73                     | 0.71              |
| 8:AB:1366:A:C2'   | 8:AB:1367:A:H5'   | 2.21                     | 0.71              |
| 8:AB:1432:G:H2'   | 8:AB:1433:A:H8    | 1.55                     | 0.71              |
| 8:AB:1528:A:H2'   | 8:AB:1529:G:H5'   | 1.73                     | 0.71              |
| 8:AB:2141:G:H22   | 8:AB:2151:U:H1'   | 1.56                     | 0.71              |
| 8:AB:2765:A:O2'   | 8:AB:2766:A:H5'   | 1.89                     | 0.71              |
| 8:AB:2777:G:H3'   | 8:AB:2777:G:C8    | 2.25                     | 0.71              |
| 28:AV:53:LYS:HD3  | 28:AV:54:ALA:N    | 2.05                     | 0.71              |
| 33:BA:815:A:H62   | 33:BA:1509:C:H1'  | 1.56                     | 0.71              |
| 33:BA:943:U:O2'   | 33:BA:944:G:H5'   | 1.91                     | 0.71              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BG:30:MET:SD    | 39:BG:35:LYS:HG3   | 2.30                     | 0.71              |
| 45:BM:12:LYS:H     | 45:BM:44:ILE:HD11  | 1.54                     | 0.71              |
| 48:BP:57:ILE:O     | 48:BP:61:VAL:HG22  | 1.90                     | 0.71              |
| 51:BS:68:HIS:NE2   | 51:BS:72:GLU:HG3   | 2.06                     | 0.71              |
| 8:CB:523:C:O3'     | 8:CB:539:G:N2      | 2.23                     | 0.71              |
| 8:CB:545:U:C5      | 8:CB:546:U:H4'     | 2.26                     | 0.71              |
| 8:CB:777:G:H5''    | 8:CB:777:G:H8      | 1.54                     | 0.71              |
| 8:CB:1011:G:H5''   | 23:CQ:76:SER:OG    | 1.91                     | 0.71              |
| 8:CB:1060:U:H4'    | 8:CB:1061:U:O5'    | 1.89                     | 0.71              |
| 8:CB:1355:G:C6     | 8:CB:1377:G:N2     | 2.58                     | 0.71              |
| 16:CJ:99:ARG:HG2   | 16:CJ:103:ILE:HD13 | 1.72                     | 0.71              |
| 19:CM:105:MET:HA   | 19:CM:105:MET:CE   | 2.21                     | 0.71              |
| 33:DA:543:U:O2'    | 33:DA:544:G:H5'    | 1.91                     | 0.71              |
| 33:DA:671:G:N2     | 33:DA:672:U:H1'    | 2.05                     | 0.71              |
| 33:DA:719:C:H6     | 33:DA:720:C:C5     | 2.07                     | 0.71              |
| 33:DA:1254:A:OP1   | 42:DJ:47:GLU:HB3   | 1.91                     | 0.71              |
| 36:DD:125:ASN:HA   | 36:DD:141:VAL:HG23 | 1.71                     | 0.71              |
| 41:DI:112:ARG:HH22 | 42:DJ:64:GLN:NE2   | 1.89                     | 0.71              |
| 53:DU:3:ILE:O      | 53:DU:3:ILE:HD12   | 1.90                     | 0.71              |
| 8:AB:27:G:H1'      | 8:AB:513:A:N6      | 2.05                     | 0.71              |
| 8:AB:588:U:H1'     | 11:AE:85:PHE:CD2   | 2.26                     | 0.71              |
| 8:AB:856:G:O4'     | 29:AW:23:LYS:HD2   | 1.91                     | 0.71              |
| 8:AB:864:G:C8      | 8:AB:864:G:H3'     | 2.25                     | 0.71              |
| 8:AB:1327:A:C2     | 8:AB:1328:A:H1'    | 2.26                     | 0.71              |
| 8:AB:1379:U:OP2    | 55:AB:4487:HOH:O   | 2.09                     | 0.71              |
| 8:AB:1838:C:N4     | 8:AB:1899:A:C4     | 2.59                     | 0.71              |
| 8:AB:1930:G:H22    | 8:AB:1969:A:P      | 2.14                     | 0.71              |
| 8:AB:1933:G:O5'    | 8:AB:1933:G:H8     | 1.74                     | 0.71              |
| 8:AB:1965:C:OP1    | 8:AB:1966:A:H2'    | 1.91                     | 0.71              |
| 8:AB:2330:G:H21    | 29:AW:36:ILE:HG12  | 1.56                     | 0.71              |
| 9:AC:208:GLY:CA    | 9:AC:212:TRP:HB2   | 2.21                     | 0.71              |
| 14:AH:5:LEU:HA     | 14:AH:37:VAL:HG11  | 1.71                     | 0.71              |
| 16:AJ:84:ILE:HD12  | 16:AJ:84:ILE:N     | 2.02                     | 0.71              |
| 16:AJ:100:VAL:C    | 16:AJ:102:GLU:H    | 1.94                     | 0.71              |
| 16:AJ:116:ARG:HH11 | 16:AJ:116:ARG:CG   | 2.03                     | 0.71              |
| 18:AL:77:ILE:HB    | 18:AL:109:LYS:O    | 1.90                     | 0.71              |
| 20:AN:70:THR:C     | 20:AN:72:ASP:H     | 1.91                     | 0.71              |
| 28:AV:78:GLN:O     | 28:AV:87:GLN:HB2   | 1.91                     | 0.71              |
| 30:AX:35:GLY:HA3   | 30:AX:40:SER:HA    | 1.73                     | 0.71              |
| 33:BA:605:U:H2'    | 33:BA:606:G:C8     | 2.26                     | 0.71              |
| 33:BA:783:C:H2'    | 33:BA:784:A:H8     | 1.56                     | 0.71              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:895:G:O5'    | 33:BA:895:G:H8     | 1.73                     | 0.71              |
| 53:BU:33:ARG:HD3   | 53:BU:34:ARG:HG3   | 1.72                     | 0.71              |
| 1:C0:40:HIS:CE1    | 1:C0:41:HIS:HB3    | 2.26                     | 0.71              |
| 8:CB:863:A:H8      | 8:CB:863:A:O5'     | 1.74                     | 0.71              |
| 8:CB:1026:G:N3     | 8:CB:1027:A:C8     | 2.58                     | 0.71              |
| 8:CB:2552:U:H5''   | 8:CB:2553:G:OP2    | 1.91                     | 0.71              |
| 14:CH:50:ARG:HB2   | 14:CH:54:LEU:HD12  | 1.71                     | 0.71              |
| 16:CJ:62:VAL:O     | 16:CJ:64:VAL:HG23  | 1.90                     | 0.71              |
| 18:CL:51:GLU:CD    | 18:CL:52:GLY:N     | 2.43                     | 0.71              |
| 21:CO:37:ALA:O     | 21:CO:38:GLN:HB2   | 1.90                     | 0.71              |
| 25:CS:83:LYS:HB2   | 25:CS:83:LYS:NZ    | 2.06                     | 0.71              |
| 33:DA:515:G:N2     | 33:DA:537:G:H1'    | 2.06                     | 0.71              |
| 33:DA:548:G:H2'    | 33:DA:549:C:H6     | 1.56                     | 0.71              |
| 33:DA:642:A:H2'    | 33:DA:643:C:C6     | 2.25                     | 0.71              |
| 33:DA:718:A:H5''   | 33:DA:720:C:H41    | 1.55                     | 0.71              |
| 37:DE:21:SER:HB2   | 37:DE:28:ARG:HE    | 1.56                     | 0.71              |
| 42:DJ:93:ALA:HB1   | 42:DJ:96:VAL:HG22  | 1.72                     | 0.71              |
| 48:DP:10:GLY:HA3   | 48:DP:15:PRO:HA    | 1.73                     | 0.71              |
| 1:A0:9:ARG:HD3     | 8:AB:517:C:OP2     | 1.90                     | 0.70              |
| 4:A3:48:MET:O      | 4:A3:50:SER:N      | 2.21                     | 0.70              |
| 8:AB:82:U:H2'      | 8:AB:83:A:O4'      | 1.90                     | 0.70              |
| 8:AB:532:A:H5''    | 23:AQ:27:ARG:NH2   | 2.06                     | 0.70              |
| 8:AB:587:C:OP2     | 18:AL:29:LYS:HG3   | 1.91                     | 0.70              |
| 8:AB:902:C:H3'     | 8:AB:902:C:O2      | 1.90                     | 0.70              |
| 8:AB:1128:G:H1'    | 8:AB:2516:A:O2'    | 1.90                     | 0.70              |
| 8:AB:1568:G:H5''   | 9:AC:60:ALA:HB3    | 1.71                     | 0.70              |
| 8:AB:1764:C:H3'    | 8:AB:1764:C:C6     | 2.26                     | 0.70              |
| 8:AB:1768:C:C6     | 8:AB:1768:C:H3'    | 2.26                     | 0.70              |
| 8:AB:2498:C:H2'    | 8:AB:2498:C:O2     | 1.90                     | 0.70              |
| 8:AB:2667:C:H1'    | 13:AG:108:PHE:CD1  | 2.26                     | 0.70              |
| 8:AB:2731:G:H5''   | 8:AB:2732:G:OP2    | 1.91                     | 0.70              |
| 8:AB:2769:U:H2'    | 8:AB:2770:G:C8     | 2.25                     | 0.70              |
| 9:AC:174:ARG:HB2   | 9:AC:180:MET:HG3   | 1.71                     | 0.70              |
| 22:AP:47:ILE:HG23  | 22:AP:63:ILE:HG23  | 1.72                     | 0.70              |
| 33:BA:451:A:C4'    | 33:BA:452:A:C8     | 2.74                     | 0.70              |
| 33:BA:875:U:H1'    | 40:BH:15:ASN:HD21  | 1.55                     | 0.70              |
| 33:BA:920:U:C2     | 33:BA:921:U:C5     | 2.79                     | 0.70              |
| 34:BB:107:ARG:HA   | 34:BB:110:ILE:HD12 | 1.73                     | 0.70              |
| 36:BD:183:ARG:NH2  | 36:BD:185:PRO:HA   | 2.06                     | 0.70              |
| 37:BE:82:HIS:CD2   | 40:BH:95:MET:HG2   | 2.26                     | 0.70              |
| 39:BG:132:THR:HG22 | 39:BG:136:LYS:HG3  | 1.71                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:BQ:71:SER:C    | 49:BQ:72:TRP:CD1   | 2.64                     | 0.70              |
| 5:C4:24:ARG:HB2   | 5:C4:36:ARG:CA     | 2.21                     | 0.70              |
| 8:CB:485:C:O2     | 25:CS:60:HIS:CE1   | 2.40                     | 0.70              |
| 8:CB:614:A:H5''   | 8:CB:616:A:N6      | 2.05                     | 0.70              |
| 8:CB:975:A:C2'    | 8:CB:976:G:H5'     | 2.21                     | 0.70              |
| 8:CB:1010:A:C8    | 8:CB:1010:A:H3'    | 2.26                     | 0.70              |
| 9:CC:83:ASP:HB2   | 9:CC:90:ILE:HD12   | 1.71                     | 0.70              |
| 9:CC:124:LYS:HG3  | 9:CC:126:GLY:H     | 1.55                     | 0.70              |
| 11:CE:115:GLN:O   | 11:CE:116:ASP:HB3  | 1.89                     | 0.70              |
| 14:CH:26:ALA:HB2  | 14:CH:30:LEU:HG    | 1.71                     | 0.70              |
| 23:CQ:12:ARG:CG   | 23:CQ:12:ARG:HH11  | 2.03                     | 0.70              |
| 33:DA:219:U:H2'   | 33:DA:220:G:H5'    | 1.72                     | 0.70              |
| 33:DA:377:G:N2    | 33:DA:378:G:C4     | 2.59                     | 0.70              |
| 33:DA:467:U:H3'   | 33:DA:468:A:C5'    | 2.20                     | 0.70              |
| 33:DA:1441:A:C8   | 33:DA:1442:G:C8    | 2.79                     | 0.70              |
| 46:DN:62:ARG:HG2  | 46:DN:69:PRO:HD3   | 1.72                     | 0.70              |
| 8:AB:23:G:H2'     | 8:AB:24:G:H8       | 1.56                     | 0.70              |
| 8:AB:45:G:H5''    | 8:AB:46:G:OP1      | 1.91                     | 0.70              |
| 8:AB:877:A:H2'    | 8:AB:899:A:N6      | 2.05                     | 0.70              |
| 8:AB:1387:A:H2'   | 8:AB:1388:G:H8     | 1.55                     | 0.70              |
| 28:AV:77:VAL:HG12 | 28:AV:89:ILE:HG23  | 1.71                     | 0.70              |
| 30:AX:52:ARG:O    | 30:AX:56:LEU:HD13  | 1.90                     | 0.70              |
| 32:AZ:48:GLN:HE22 | 32:AZ:49:ARG:HD3   | 1.56                     | 0.70              |
| 33:BA:1349:A:H1'  | 33:BA:1374:A:N6    | 2.06                     | 0.70              |
| 34:BB:82:ALA:HA   | 34:BB:221:ARG:HH22 | 1.54                     | 0.70              |
| 1:C0:37:HIS:CE1   | 1:C0:42:ILE:HD12   | 2.26                     | 0.70              |
| 8:CB:27:G:O2'     | 8:CB:28:A:H8       | 1.70                     | 0.70              |
| 8:CB:45:G:H5''    | 8:CB:46:G:OP1      | 1.89                     | 0.70              |
| 8:CB:147:C:O2'    | 8:CB:148:U:H5'     | 1.91                     | 0.70              |
| 8:CB:329:G:H8     | 8:CB:329:G:OP1     | 1.74                     | 0.70              |
| 8:CB:384:A:O5'    | 8:CB:384:A:C8      | 2.44                     | 0.70              |
| 8:CB:592:A:C6     | 8:CB:593:U:C4      | 2.80                     | 0.70              |
| 8:CB:856:G:O4'    | 29:CW:23:LYS:HD2   | 1.91                     | 0.70              |
| 8:CB:870:U:O2'    | 19:CM:8:LYS:HE2    | 1.90                     | 0.70              |
| 8:CB:1224:U:O3'   | 24:CR:90:ARG:HB2   | 1.90                     | 0.70              |
| 8:CB:1415:U:H1'   | 8:CB:1588:G:N2     | 2.06                     | 0.70              |
| 8:CB:1608:A:C8    | 8:CB:1611:C:N4     | 2.58                     | 0.70              |
| 8:CB:1792:G:OP1   | 9:CC:203:VAL:HG23  | 1.90                     | 0.70              |
| 8:CB:2539:C:C2'   | 8:CB:2540:C:H5''   | 2.21                     | 0.70              |
| 8:CB:2584:U:H6    | 8:CB:2584:U:H3'    | 1.56                     | 0.70              |
| 11:CE:189:THR:C   | 11:CE:191:ASP:H    | 1.93                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 21:CO:56:LYS:N    | 21:CO:62:LEU:HD11  | 2.06                     | 0.70              |
| 23:CQ:90:ASP:OD2  | 24:CR:10:LYS:HG2   | 1.90                     | 0.70              |
| 25:CS:84:ARG:HH22 | 25:CS:98:LYS:HE3   | 1.55                     | 0.70              |
| 33:DA:203:G:N2    | 33:DA:215:C:C2     | 2.59                     | 0.70              |
| 33:DA:299:G:C6    | 33:DA:300:A:C6     | 2.79                     | 0.70              |
| 33:DA:600:A:OP1   | 40:DH:88:LYS:HB3   | 1.90                     | 0.70              |
| 33:DA:878:A:H3'   | 33:DA:878:A:H8     | 1.55                     | 0.70              |
| 33:DA:1250:A:H5'' | 41:DI:68:GLY:HA2   | 1.72                     | 0.70              |
| 35:DC:5:HIS:CG    | 46:DN:88:MET:HB3   | 2.26                     | 0.70              |
| 36:DD:29:THR:O    | 36:DD:30:LYS:HB2   | 1.91                     | 0.70              |
| 38:DF:39:LEU:O    | 38:DF:39:LEU:HD22  | 1.90                     | 0.70              |
| 48:DP:41:PRO:O    | 48:DP:42:ILE:HG12  | 1.90                     | 0.70              |
| 48:DP:51:ARG:C    | 48:DP:52:LEU:HD12  | 2.11                     | 0.70              |
| 4:A3:49:VAL:O     | 4:A3:49:VAL:HG12   | 1.90                     | 0.70              |
| 6:A5:151:GLN:HA   | 6:A5:154:ILE:CG2   | 2.20                     | 0.70              |
| 8:AB:379:G:N2     | 8:AB:396:G:C5      | 2.59                     | 0.70              |
| 8:AB:692:C:N4     | 8:AB:770:G:C6      | 2.60                     | 0.70              |
| 8:AB:905:A:C3'    | 8:AB:906:U:H5''    | 2.21                     | 0.70              |
| 8:AB:976:G:H2'    | 8:AB:977:G:H8      | 1.54                     | 0.70              |
| 8:AB:2670:A:C2    | 8:AB:2671:G:C4     | 2.79                     | 0.70              |
| 9:AC:124:LYS:HB2  | 9:AC:125:PRO:CD    | 2.21                     | 0.70              |
| 11:AE:141:MET:HB2 | 11:AE:143:LEU:HB2  | 1.71                     | 0.70              |
| 15:AI:60:VAL:HG12 | 15:AI:61:TYR:H     | 1.56                     | 0.70              |
| 18:AL:39:LYS:HB2  | 18:AL:45:GLY:O     | 1.90                     | 0.70              |
| 21:AO:76:LYS:HB2  | 21:AO:106:LEU:HD22 | 1.71                     | 0.70              |
| 29:AW:80:SER:HB2  | 29:AW:84:GLU:HB2   | 1.74                     | 0.70              |
| 32:AZ:69:SER:O    | 32:AZ:70:LYS:HE2   | 1.92                     | 0.70              |
| 33:BA:1288:A:H2'  | 33:BA:1289:A:O4'   | 1.91                     | 0.70              |
| 33:BA:1305:G:HO2' | 33:BA:1306:A:H8    | 1.36                     | 0.70              |
| 33:BA:1412:C:H2'  | 33:BA:1413:A:H8    | 1.56                     | 0.70              |
| 45:BM:13:HIS:HB2  | 45:BM:16:ILE:CG2   | 2.22                     | 0.70              |
| 8:CB:677:A:O2'    | 8:CB:2071:A:H5'    | 1.91                     | 0.70              |
| 8:CB:2500:U:O2    | 8:CB:2504:U:C5     | 2.45                     | 0.70              |
| 8:CB:2670:A:C2    | 8:CB:2671:G:C4     | 2.79                     | 0.70              |
| 8:CB:2805:C:H6    | 8:CB:2805:C:O5'    | 1.73                     | 0.70              |
| 8:CB:2820:A:H5''  | 8:CB:2820:A:C8     | 2.26                     | 0.70              |
| 13:CG:124:CYS:HB2 | 13:CG:129:GLU:O    | 1.92                     | 0.70              |
| 16:CJ:47:HIS:ND1  | 16:CJ:47:HIS:O     | 2.24                     | 0.70              |
| 18:CL:27:LEU:O    | 18:CL:27:LEU:HD23  | 1.92                     | 0.70              |
| 20:CN:4:ARG:H     | 20:CN:4:ARG:NE     | 1.89                     | 0.70              |
| 21:CO:33:ARG:HG3  | 21:CO:34:HIS:HD2   | 1.56                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:CW:47:GLY:HA2   | 29:CW:72:GLY:CA    | 2.20                     | 0.70              |
| 33:DA:58:C:C2'     | 33:DA:59:A:H5''    | 2.21                     | 0.70              |
| 33:DA:715:A:O2'    | 33:DA:716:A:H5'    | 1.91                     | 0.70              |
| 33:DA:1072:G:H22   | 33:DA:1104:G:H1'   | 1.56                     | 0.70              |
| 33:DA:1388:C:H2'   | 33:DA:1389:C:C6    | 2.26                     | 0.70              |
| 34:DB:167:HIS:CD2  | 34:DB:168:GLU:HG2  | 2.26                     | 0.70              |
| 40:DH:39:LEU:HB2   | 40:DH:45:ILE:CD1   | 2.20                     | 0.70              |
| 52:DT:2:ASN:N      | 52:DT:7:LYS:HD2    | 2.05                     | 0.70              |
| 7:AA:106:G:H2'     | 7:AA:106:G:N3      | 2.05                     | 0.70              |
| 8:AB:100:U:H4'     | 27:AU:90:LYS:CG    | 2.22                     | 0.70              |
| 8:AB:1353:A:N3     | 8:AB:1354:A:N7     | 2.40                     | 0.70              |
| 8:AB:2098:U:H2'    | 8:AB:2099:U:H6     | 1.54                     | 0.70              |
| 8:AB:2307:G:N2     | 8:AB:2308:G:H4'    | 2.03                     | 0.70              |
| 8:AB:2460:U:H3'    | 8:AB:2461:A:H8     | 1.54                     | 0.70              |
| 8:AB:2751:G:H21    | 13:AG:2:ARG:H      | 1.39                     | 0.70              |
| 9:AC:32:LEU:HB3    | 9:AC:61:TYR:CE1    | 2.25                     | 0.70              |
| 9:AC:156:SER:OG    | 9:AC:195:GLY:HA3   | 1.91                     | 0.70              |
| 9:AC:262:THR:O     | 9:AC:262:THR:HG23  | 1.90                     | 0.70              |
| 10:AD:49:GLN:O     | 10:AD:50:VAL:HG13  | 1.91                     | 0.70              |
| 11:AE:151:GLY:HA2  | 11:AE:171:ASP:OD2  | 1.91                     | 0.70              |
| 19:AM:131:VAL:HG23 | 19:AM:133:LYS:HB2  | 1.72                     | 0.70              |
| 23:AQ:31:TYR:O     | 23:AQ:34:ALA:HB2   | 1.91                     | 0.70              |
| 27:AU:40:LEU:H     | 27:AU:42:LYS:NZ    | 1.88                     | 0.70              |
| 33:BA:19:A:N3      | 33:BA:572:A:H2     | 1.90                     | 0.70              |
| 33:BA:344:A:H4'    | 33:BA:345:C:OP2    | 1.91                     | 0.70              |
| 33:BA:489:C:O2'    | 33:BA:490:C:H5'    | 1.91                     | 0.70              |
| 33:BA:608:A:H8     | 33:BA:608:A:O5'    | 1.75                     | 0.70              |
| 33:BA:620:C:N3     | 36:BD:131:ILE:HG12 | 2.05                     | 0.70              |
| 33:BA:662:U:H2'    | 33:BA:663:A:N7     | 2.06                     | 0.70              |
| 33:BA:895:G:N2     | 33:BA:896:C:C2     | 2.59                     | 0.70              |
| 33:BA:935:A:H61    | 39:BG:2:ARG:HD2    | 1.55                     | 0.70              |
| 33:BA:1526:G:H2'   | 33:BA:1527:U:H5'   | 1.73                     | 0.70              |
| 35:BC:115:VAL:HG11 | 35:BC:137:VAL:HG13 | 1.73                     | 0.70              |
| 49:BQ:30:HIS:HE1   | 49:BQ:32:ILE:HG22  | 1.55                     | 0.70              |
| 2:C1:49:LYS:O      | 2:C1:50:GLU:HB3    | 1.91                     | 0.70              |
| 8:CB:201:C:C5      | 8:CB:202:U:C5      | 2.79                     | 0.70              |
| 8:CB:251:A:P       | 18:CL:59:ARG:HH22  | 2.15                     | 0.70              |
| 8:CB:692:C:N4      | 8:CB:770:G:N1      | 2.39                     | 0.70              |
| 8:CB:856:G:N2      | 8:CB:922:C:C4      | 2.59                     | 0.70              |
| 8:CB:1032:A:H2'    | 8:CB:1032:A:N3     | 2.04                     | 0.70              |
| 8:CB:1165:A:H2'    | 8:CB:1166:G:C8     | 2.16                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1255:U:H3     | 11:CE:66:GLY:HA2   | 1.56                     | 0.70              |
| 8:CB:1613:G:H2'    | 8:CB:1617:C:N4     | 2.03                     | 0.70              |
| 8:CB:1760:C:H2'    | 8:CB:1761:C:O4'    | 1.91                     | 0.70              |
| 8:CB:1771:C:C2     | 8:CB:1772:A:C8     | 2.79                     | 0.70              |
| 8:CB:2396:G:H1     | 8:CB:2420:C:N4     | 1.89                     | 0.70              |
| 8:CB:2636:C:C5'    | 10:CD:80:TRP:CZ2   | 2.72                     | 0.70              |
| 8:CB:2811:G:H5'    | 10:CD:62:LYS:CE    | 2.20                     | 0.70              |
| 13:CG:40:VAL:HG22  | 13:CG:51:PHE:HE2   | 1.56                     | 0.70              |
| 30:CX:11:VAL:O     | 30:CX:14:LEU:HG    | 1.90                     | 0.70              |
| 33:DA:905:U:C6     | 33:DA:906:A:N7     | 2.58                     | 0.70              |
| 33:DA:1123:U:O2'   | 42:DJ:39:PRO:HD2   | 1.91                     | 0.70              |
| 33:DA:1278:G:H3'   | 33:DA:1279:G:C5'   | 2.21                     | 0.70              |
| 43:DK:106:ILE:HD11 | 43:DK:109:ILE:HG23 | 1.73                     | 0.70              |
| 3:A2:31:LEU:O      | 3:A2:35:ARG:HB2    | 1.91                     | 0.70              |
| 4:A3:12:ARG:HB2    | 4:A3:24:LYS:HG3    | 1.74                     | 0.70              |
| 5:A4:24:ARG:HH22   | 5:A4:36:ARG:CD     | 2.04                     | 0.70              |
| 7:AA:43:C:H2'      | 7:AA:44:G:H5''     | 1.74                     | 0.70              |
| 7:AA:57:A:C4       | 12:AF:25:MET:HG2   | 2.26                     | 0.70              |
| 8:AB:27:G:O2'      | 8:AB:28:A:H8       | 1.71                     | 0.70              |
| 8:AB:62:U:H2'      | 8:AB:63:A:C8       | 2.26                     | 0.70              |
| 8:AB:418:C:H2'     | 8:AB:419:U:C6      | 2.26                     | 0.70              |
| 8:AB:1021:A:H2'    | 8:AB:1022:G:O5'    | 1.91                     | 0.70              |
| 8:AB:1243:C:O2'    | 18:AL:15:ALA:HB2   | 1.92                     | 0.70              |
| 8:AB:1252:G:H22    | 23:AQ:36:GLN:HE22  | 1.39                     | 0.70              |
| 8:AB:1670:C:C4     | 8:AB:1671:U:N3     | 2.60                     | 0.70              |
| 9:AC:90:ILE:HD13   | 9:AC:102:TYR:CD2   | 2.27                     | 0.70              |
| 10:AD:2:ILE:HG21   | 10:AD:203:VAL:O    | 1.91                     | 0.70              |
| 26:AT:70:HIS:CE1   | 26:AT:74:ILE:HD12  | 2.26                     | 0.70              |
| 31:AY:8:GLN:NE2    | 31:AY:28:LEU:HB3   | 2.06                     | 0.70              |
| 33:BA:428:G:N7     | 33:BA:430:A:C5     | 2.60                     | 0.70              |
| 33:BA:462:G:N3     | 33:BA:462:G:H2'    | 2.06                     | 0.70              |
| 33:BA:836:G:C6     | 33:BA:837:U:C4     | 2.79                     | 0.70              |
| 33:BA:878:A:H3'    | 33:BA:878:A:H8     | 1.56                     | 0.70              |
| 38:BF:86:ARG:NH1   | 50:BR:63:TYR:CB    | 2.55                     | 0.70              |
| 3:C2:16:HIS:ND1    | 3:C2:44:VAL:O      | 2.23                     | 0.70              |
| 8:CB:81:G:H1       | 8:CB:105:C:H42     | 1.36                     | 0.70              |
| 8:CB:381:G:H5'     | 32:CZ:13:THR:HG22  | 1.74                     | 0.70              |
| 8:CB:481:G:OP2     | 27:CU:42:LYS:HB3   | 1.90                     | 0.70              |
| 8:CB:1429:G:H5'    | 8:CB:1429:G:C8     | 2.23                     | 0.70              |
| 8:CB:1815:A:C8     | 8:CB:1815:A:O5'    | 2.45                     | 0.70              |
| 10:CD:81:GLU:O     | 10:CD:82:PHE:HD1   | 1.74                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:CD:122:VAL:HA  | 10:CD:128:ARG:NE   | 2.06                     | 0.70              |
| 10:CD:181:ASP:OD2 | 10:CD:184:ARG:HG3  | 1.91                     | 0.70              |
| 13:CG:34:ARG:CZ   | 13:CG:70:LEU:HD21  | 2.20                     | 0.70              |
| 16:CJ:10:THR:O    | 16:CJ:11:VAL:HB    | 1.90                     | 0.70              |
| 19:CM:16:ARG:HB2  | 19:CM:16:ARG:HH11  | 1.55                     | 0.70              |
| 19:CM:41:LEU:HG   | 19:CM:95:LEU:HD22  | 1.72                     | 0.70              |
| 23:CQ:60:TRP:CZ2  | 23:CQ:93:ILE:HG22  | 2.26                     | 0.70              |
| 25:CS:8:ARG:HA    | 25:CS:102:HIS:CD2  | 2.27                     | 0.70              |
| 26:CT:67:VAL:HG12 | 26:CT:68:LYS:H     | 1.56                     | 0.70              |
| 28:CV:63:ILE:N    | 28:CV:70:ILE:HD11  | 2.06                     | 0.70              |
| 32:CZ:49:ARG:O    | 32:CZ:51:VAL:N     | 2.25                     | 0.70              |
| 33:DA:31:G:N7     | 33:DA:306:A:H1'    | 2.06                     | 0.70              |
| 33:DA:738:C:H2'   | 33:DA:739:C:C5     | 2.25                     | 0.70              |
| 33:DA:749:A:O2'   | 33:DA:750:C:H5'    | 1.91                     | 0.70              |
| 38:DF:39:LEU:HB2  | 38:DF:61:LEU:O     | 1.91                     | 0.70              |
| 39:DG:14:ASP:HB2  | 39:DG:19:SER:N     | 2.05                     | 0.70              |
| 41:DI:56:MET:CG   | 41:DI:57:VAL:N     | 2.54                     | 0.70              |
| 7:AA:27:C:N4      | 7:AA:28:C:N4       | 2.40                     | 0.70              |
| 7:AA:40:U:H1'     | 7:AA:43:C:H5       | 1.56                     | 0.70              |
| 8:AB:465:G:C2     | 8:AB:466:A:C6      | 2.78                     | 0.70              |
| 8:AB:557:C:H2'    | 8:AB:558:U:C6      | 2.26                     | 0.70              |
| 8:AB:682:G:N2     | 8:AB:683:U:C2      | 2.59                     | 0.70              |
| 8:AB:865:C:C5     | 8:AB:908:C:N4      | 2.60                     | 0.70              |
| 8:AB:945:A:OP1    | 55:AB:4413:HOH:O   | 2.10                     | 0.70              |
| 8:AB:1101:U:H2'   | 8:AB:1102:C:C6     | 2.27                     | 0.70              |
| 8:AB:1765:U:O2    | 8:AB:1765:U:H2'    | 1.91                     | 0.70              |
| 8:AB:1809:A:C2'   | 8:AB:1810:A:C8     | 2.75                     | 0.70              |
| 8:AB:2320:U:H3'   | 8:AB:2320:U:C6     | 2.25                     | 0.70              |
| 10:AD:181:ASP:OD2 | 10:AD:184:ARG:HG3  | 1.91                     | 0.70              |
| 12:AF:2:LYS:HA    | 12:AF:2:LYS:HE2    | 1.73                     | 0.70              |
| 15:AI:20:SER:H    | 15:AI:21:PRO:CD    | 2.05                     | 0.70              |
| 15:AI:55:PRO:HG3  | 15:AI:72:THR:O     | 1.90                     | 0.70              |
| 18:AL:78:ARG:CZ   | 18:AL:80:SER:HA    | 2.21                     | 0.70              |
| 33:BA:299:G:C6    | 33:BA:300:A:C6     | 2.80                     | 0.70              |
| 33:BA:369:G:OP2   | 33:BA:388:G:N1     | 2.25                     | 0.70              |
| 33:BA:437:U:C2'   | 33:BA:438:U:H5''   | 2.21                     | 0.70              |
| 33:BA:719:C:N4    | 50:BR:59:LYS:HE2   | 2.06                     | 0.70              |
| 33:BA:981:U:H3'   | 33:BA:982:U:C5'    | 2.21                     | 0.70              |
| 33:BA:1081:A:OP1  | 37:BE:22:LYS:HB2   | 1.91                     | 0.70              |
| 33:BA:1226:C:H5'  | 45:BM:101:THR:HG23 | 1.72                     | 0.70              |
| 36:BD:197:HIS:O   | 36:BD:200:VAL:HG13 | 1.92                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BG:111:GLY:HA2  | 39:BG:118:ARG:NH1  | 2.07                     | 0.70              |
| 40:BH:14:ARG:HG2   | 40:BH:14:ARG:NH1   | 2.04                     | 0.70              |
| 5:C4:2:LYS:HG2     | 5:C4:37:GLN:O      | 1.91                     | 0.70              |
| 8:CB:1:G:H2'       | 8:CB:2:G:H8        | 1.56                     | 0.70              |
| 8:CB:82:U:H2'      | 8:CB:83:A:O4'      | 1.90                     | 0.70              |
| 8:CB:120:U:C5      | 8:CB:149:A:C2      | 2.79                     | 0.70              |
| 8:CB:508:A:H2      | 25:CS:9:HIS:NE2    | 1.90                     | 0.70              |
| 8:CB:772:C:H2'     | 8:CB:773:U:H6      | 1.56                     | 0.70              |
| 8:CB:831:G:N1      | 8:CB:832:U:C2      | 2.59                     | 0.70              |
| 8:CB:907:G:C6      | 8:CB:908:C:C4      | 2.80                     | 0.70              |
| 8:CB:1093:G:H21    | 8:CB:1098:A:N6     | 1.90                     | 0.70              |
| 8:CB:2383:G:C2     | 8:CB:2384:U:H5     | 2.10                     | 0.70              |
| 8:CB:2734:A:N7     | 8:CB:2735:G:C8     | 2.59                     | 0.70              |
| 8:CB:2744:G:N7     | 8:CB:2755:C:C2     | 2.59                     | 0.70              |
| 8:CB:2838:G:N2     | 20:CN:93:GLY:H     | 1.90                     | 0.70              |
| 13:CG:15:ASP:HB2   | 13:CG:26:LYS:HB2   | 1.73                     | 0.70              |
| 16:CJ:78:THR:HG23  | 16:CJ:84:ILE:CG2   | 2.19                     | 0.70              |
| 20:CN:58:ASP:HA    | 20:CN:62:ASN:HB2   | 1.72                     | 0.70              |
| 28:CV:5:ASN:HA     | 28:CV:64:VAL:HB    | 1.71                     | 0.70              |
| 33:DA:678:U:H4'    | 33:DA:778:G:OP1    | 1.91                     | 0.70              |
| 33:DA:905:U:H3'    | 33:DA:906:A:C8     | 2.27                     | 0.70              |
| 33:DA:977:A:C8     | 33:DA:1223:C:C4    | 2.79                     | 0.70              |
| 33:DA:1183:U:H3'   | 33:DA:1184:G:C5'   | 2.21                     | 0.70              |
| 33:DA:1415:G:H2'   | 33:DA:1416:G:C8    | 2.20                     | 0.70              |
| 35:DC:119:ILE:HG21 | 35:DC:197:VAL:HG11 | 1.73                     | 0.70              |
| 36:DD:127:ARG:HD2  | 36:DD:127:ARG:H    | 1.55                     | 0.70              |
| 44:DL:19:ASN:O     | 44:DL:85:ARG:HD2   | 1.92                     | 0.70              |
| 7:AA:17:C:H2'      | 7:AA:18:G:H8       | 1.57                     | 0.70              |
| 8:AB:75:G:O2'      | 30:AX:48:ARG:NH1   | 2.22                     | 0.70              |
| 8:AB:103:A:H2'     | 8:AB:104:A:O4'     | 1.91                     | 0.70              |
| 8:AB:201:C:C5      | 8:AB:202:U:C5      | 2.80                     | 0.70              |
| 8:AB:311:A:N6      | 8:AB:328:U:H2'     | 2.06                     | 0.70              |
| 8:AB:572:A:C2      | 8:AB:2033:A:C2     | 2.79                     | 0.70              |
| 8:AB:1233:C:H2'    | 8:AB:1234:U:H6     | 1.55                     | 0.70              |
| 8:AB:1286:A:C5     | 8:AB:1289:C:N4     | 2.59                     | 0.70              |
| 8:AB:1378:A:C8     | 8:AB:1380:G:C6     | 2.79                     | 0.70              |
| 8:AB:1797:G:N2     | 8:AB:1823:G:C4     | 2.60                     | 0.70              |
| 8:AB:2695:U:H6     | 8:AB:2695:U:H3'    | 1.56                     | 0.70              |
| 9:AC:243:PRO:CA    | 9:AC:249:VAL:HG23  | 2.22                     | 0.70              |
| 10:AD:52:THR:HG22  | 10:AD:53:GLY:H     | 1.55                     | 0.70              |
| 19:AM:124:LEU:N    | 19:AM:124:LEU:HD23 | 2.07                     | 0.70              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:AP:3:ILE:O      | 22:AP:7:LEU:HD13   | 1.91                     | 0.70              |
| 26:AT:66:LYS:HE3   | 26:AT:67:VAL:N     | 2.07                     | 0.70              |
| 28:AV:73:LYS:HB3   | 28:AV:92:VAL:HG13  | 1.73                     | 0.70              |
| 33:BA:676:A:H5'    | 43:BK:115:ILE:HD12 | 1.71                     | 0.70              |
| 33:BA:1467:C:O2'   | 33:BA:1468:A:H5'   | 1.91                     | 0.70              |
| 34:BB:14:HIS:HB2   | 34:BB:202:ASN:HB2  | 1.73                     | 0.70              |
| 44:BL:49:ARG:HH12  | 44:BL:88:ASP:CB    | 2.04                     | 0.70              |
| 45:BM:75:SER:HA    | 45:BM:78:ARG:CB    | 2.22                     | 0.70              |
| 7:CA:28:C:C6       | 7:CA:29:A:N7       | 2.60                     | 0.70              |
| 8:CB:123:G:H2'     | 8:CB:124:G:H8      | 1.56                     | 0.70              |
| 8:CB:193:U:C2      | 8:CB:194:G:C8      | 2.79                     | 0.70              |
| 8:CB:309:A:N1      | 8:CB:330:A:C5      | 2.59                     | 0.70              |
| 8:CB:498:G:C2      | 8:CB:499:U:C6      | 2.80                     | 0.70              |
| 8:CB:563:A:C6      | 8:CB:2018:G:C4     | 2.80                     | 0.70              |
| 8:CB:585:G:H1'     | 8:CB:1256:G:N2     | 2.07                     | 0.70              |
| 8:CB:1090:A:H2'    | 8:CB:1091:G:C8     | 2.27                     | 0.70              |
| 8:CB:1771:C:H2'    | 8:CB:1772:A:H8     | 1.54                     | 0.70              |
| 8:CB:2091:C:H3'    | 8:CB:2092:U:H5''   | 1.73                     | 0.70              |
| 8:CB:2751:G:OP2    | 13:CG:2:ARG:HG3    | 1.91                     | 0.70              |
| 9:CC:179:GLU:HB2   | 9:CC:265:PHE:HB3   | 1.72                     | 0.70              |
| 16:CJ:41:LYS:HD2   | 16:CJ:46:PRO:HD3   | 1.72                     | 0.70              |
| 24:CR:50:GLY:O     | 24:CR:51:VAL:HB    | 1.90                     | 0.70              |
| 25:CS:27:LYS:HB2   | 25:CS:28:LYS:HE3   | 1.73                     | 0.70              |
| 29:CW:81:ILE:HG12  | 29:CW:82:GLU:H     | 1.55                     | 0.70              |
| 33:DA:238:A:N3     | 33:DA:239:U:C6     | 2.60                     | 0.70              |
| 33:DA:349:A:H2'    | 33:DA:350:G:H5''   | 1.72                     | 0.70              |
| 33:DA:668:G:H2'    | 33:DA:669:G:H5'    | 1.73                     | 0.70              |
| 33:DA:718:A:C5'    | 33:DA:720:C:H41    | 2.04                     | 0.70              |
| 33:DA:856:C:C4     | 33:DA:857:C:H5     | 2.09                     | 0.70              |
| 33:DA:865:A:H5'    | 33:DA:1078:U:O4    | 1.91                     | 0.70              |
| 33:DA:886:G:H2'    | 33:DA:887:G:O4'    | 1.91                     | 0.70              |
| 37:DE:76:ASN:HB2   | 37:DE:81:GLN:HG3   | 1.72                     | 0.70              |
| 37:DE:153:ALA:HA   | 37:DE:156:ARG:HB2  | 1.73                     | 0.70              |
| 39:DG:102:TRP:CD1  | 39:DG:136:LYS:HB3  | 2.26                     | 0.70              |
| 43:DK:126:ARG:HH11 | 43:DK:126:ARG:CG   | 1.90                     | 0.70              |
| 51:DS:44:ILE:HG23  | 51:DS:62:THR:O     | 1.92                     | 0.70              |
| 8:AB:100:U:H4'     | 27:AU:90:LYS:HG2   | 1.74                     | 0.70              |
| 8:AB:306:U:H2'     | 8:AB:307:G:O4'     | 1.92                     | 0.70              |
| 8:AB:741:U:C2      | 8:AB:757:G:N2      | 2.60                     | 0.70              |
| 8:AB:828:U:O2      | 8:AB:828:U:H2'     | 1.90                     | 0.70              |
| 8:AB:1108:U:H2'    | 8:AB:1109:C:H6     | 1.57                     | 0.70              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2511:U:H4'   | 10:AD:128:ARG:NE  | 2.06                     | 0.70              |
| 8:AB:2597:G:H2'   | 8:AB:2598:A:C8    | 2.25                     | 0.70              |
| 8:AB:2850:A:O2'   | 8:AB:2851:A:H5'   | 1.92                     | 0.70              |
| 16:AJ:59:ALA:C    | 16:AJ:61:LYS:H    | 1.95                     | 0.70              |
| 18:AL:85:VAL:CG1  | 18:AL:98:ALA:HB3  | 2.21                     | 0.70              |
| 20:AN:38:LEU:HB3  | 20:AN:39:PRO:CD   | 2.21                     | 0.70              |
| 33:BA:100:G:H8    | 55:BA:5031:HOH:O  | 1.74                     | 0.70              |
| 33:BA:342:C:H2'   | 33:BA:343:U:H5'   | 1.73                     | 0.70              |
| 33:BA:541:G:C2    | 33:BA:542:G:C5    | 2.79                     | 0.70              |
| 33:BA:604:G:C6    | 33:BA:635:A:C6    | 2.80                     | 0.70              |
| 33:BA:619:U:O2'   | 36:BD:134:TYR:HE1 | 1.75                     | 0.70              |
| 33:BA:627:G:O2'   | 33:BA:628:G:O4'   | 2.10                     | 0.70              |
| 33:BA:967:C:P     | 33:BA:968:A:H5'   | 2.31                     | 0.70              |
| 33:BA:1078:U:H4'  | 37:BE:137:ARG:NH2 | 2.07                     | 0.70              |
| 33:BA:1478:U:H2'  | 33:BA:1479:C:C6   | 2.26                     | 0.70              |
| 33:BA:1500:A:OP2  | 55:BA:5275:HOH:O  | 2.10                     | 0.70              |
| 43:BK:20:ALA:HB3  | 43:BK:83:VAL:HG12 | 1.72                     | 0.70              |
| 48:BP:20:VAL:HG21 | 48:BP:32:PHE:HB2  | 1.71                     | 0.70              |
| 3:C2:5:PHE:HE1    | 8:CB:464:U:H5'    | 1.56                     | 0.70              |
| 8:CB:862:G:N2     | 8:CB:916:G:H1'    | 2.06                     | 0.70              |
| 8:CB:1516:G:H2'   | 8:CB:1517:G:H8    | 1.55                     | 0.70              |
| 8:CB:2058:A:H8    | 8:CB:2058:A:C5'   | 2.03                     | 0.70              |
| 8:CB:2345:G:C4    | 8:CB:2381:A:C2    | 2.80                     | 0.70              |
| 12:CF:133:GLU:CG  | 12:CF:134:GLN:N   | 2.53                     | 0.70              |
| 16:CJ:127:GLY:O   | 16:CJ:128:ASN:O   | 2.09                     | 0.70              |
| 18:CL:33:ARG:HG2  | 24:CR:85:LYS:CE   | 2.22                     | 0.70              |
| 27:CU:39:ASN:O    | 27:CU:40:LEU:HB3  | 1.92                     | 0.70              |
| 31:CY:7:THR:HA    | 31:CY:34:THR:HB   | 1.74                     | 0.70              |
| 33:DA:50:A:N6     | 33:DA:361:G:O4'   | 2.25                     | 0.70              |
| 33:DA:518:C:C6    | 33:DA:530:G:N7    | 2.60                     | 0.70              |
| 33:DA:731:G:C2'   | 33:DA:732:C:H5'   | 2.21                     | 0.70              |
| 33:DA:975:A:O2'   | 33:DA:1358:U:H1'  | 1.92                     | 0.70              |
| 33:DA:1158:C:H4'  | 34:DB:131:LYS:HG2 | 1.74                     | 0.70              |
| 33:DA:1319:A:N1   | 33:DA:1323:G:H1'  | 2.06                     | 0.70              |
| 33:DA:1507:A:H5'' | 33:DA:1507:A:C8   | 2.24                     | 0.70              |
| 34:DB:33:ALA:HB2  | 34:DB:38:HIS:HA   | 1.72                     | 0.70              |
| 44:DL:19:ASN:HB3  | 44:DL:85:ARG:CD   | 2.21                     | 0.70              |
| 44:DL:64:SER:HA   | 44:DL:94:TYR:O    | 1.91                     | 0.70              |
| 3:A2:28:ARG:HH22  | 3:A2:32:ALA:N     | 1.88                     | 0.70              |
| 5:A4:16:ILE:CD1   | 5:A4:17:VAL:H     | 2.01                     | 0.70              |
| 8:AB:208:C:C2     | 8:AB:209:C:C5     | 2.80                     | 0.70              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:450:G:OP2     | 55:AB:4292:HOH:O  | 2.10                     | 0.70              |
| 8:AB:705:A:O2'     | 8:AB:706:A:H5'    | 1.92                     | 0.70              |
| 8:AB:814:C:H1'     | 8:AB:1225:G:N2    | 2.07                     | 0.70              |
| 8:AB:957:C:N4      | 8:AB:2459:A:C8    | 2.59                     | 0.70              |
| 8:AB:1541:C:H2'    | 8:AB:1542:U:H6    | 1.55                     | 0.70              |
| 8:AB:2031:A:N1     | 8:AB:2498:C:H1'   | 2.07                     | 0.70              |
| 8:AB:2293:G:OP1    | 21:AO:13:ARG:NH2  | 2.25                     | 0.70              |
| 8:AB:2358:A:H2'    | 8:AB:2359:C:H5'   | 1.74                     | 0.70              |
| 8:AB:2575:C:H5'    | 10:AD:150:GLN:NE2 | 2.03                     | 0.70              |
| 8:AB:2762:C:H2'    | 8:AB:2763:G:H5''  | 1.73                     | 0.70              |
| 12:AF:133:GLU:HG2  | 12:AF:147:ARG:O   | 1.91                     | 0.70              |
| 13:AG:60:GLY:O     | 13:AG:63:GLN:N    | 2.23                     | 0.70              |
| 13:AG:120:ILE:HG22 | 13:AG:133:LYS:O   | 1.92                     | 0.70              |
| 23:AQ:23:TYR:O     | 23:AQ:24:TYR:CB   | 2.39                     | 0.70              |
| 27:AU:5:ARG:HG2    | 27:AU:6:ARG:N     | 2.04                     | 0.70              |
| 33:BA:982:U:H5'    | 46:BN:5:MET:HE2   | 1.72                     | 0.70              |
| 33:BA:1472:U:H2'   | 33:BA:1473:G:C8   | 2.27                     | 0.70              |
| 39:BG:94:ARG:NH1   | 39:BG:98:LEU:HD11 | 2.07                     | 0.70              |
| 39:BG:149:ALA:HA   | 43:BK:60:PHE:HB2  | 1.74                     | 0.70              |
| 44:BL:43:LYS:HB2   | 44:BL:44:PRO:CD   | 2.22                     | 0.70              |
| 8:CB:64:A:C8       | 26:CT:69:ARG:HD2  | 2.26                     | 0.70              |
| 8:CB:528:A:H3'     | 8:CB:528:A:C8     | 2.25                     | 0.70              |
| 8:CB:565:C:H2'     | 8:CB:566:U:H5'    | 1.74                     | 0.70              |
| 8:CB:963:U:OP2     | 55:CB:5189:HOH:O  | 2.10                     | 0.70              |
| 8:CB:1652:A:C2     | 8:CB:2006:C:N3    | 2.60                     | 0.70              |
| 8:CB:2671:G:C2     | 8:CB:2672:U:O2    | 2.44                     | 0.70              |
| 11:CE:153:LEU:HG   | 11:CE:172:ALA:C   | 2.12                     | 0.70              |
| 14:CH:114:GLU:HB2  | 14:CH:133:GLN:HG3 | 1.73                     | 0.70              |
| 15:CI:126:ARG:HA   | 15:CI:129:GLU:HB2 | 1.73                     | 0.70              |
| 22:CP:26:GLU:HA    | 22:CP:47:ILE:HB   | 1.73                     | 0.70              |
| 22:CP:93:LYS:HE3   | 22:CP:97:TYR:CE2  | 2.26                     | 0.70              |
| 26:CT:15:HIS:NE2   | 26:CT:80:TRP:HZ2  | 1.87                     | 0.70              |
| 26:CT:30:ILE:HG12  | 26:CT:31:VAL:H    | 1.57                     | 0.70              |
| 29:CW:10:ARG:HH11  | 29:CW:10:ARG:HA   | 1.57                     | 0.70              |
| 33:DA:432:A:N7     | 33:DA:433:G:C8    | 2.59                     | 0.70              |
| 33:DA:514:C:H6     | 33:DA:514:C:H5''  | 1.57                     | 0.70              |
| 33:DA:622:A:C8     | 33:DA:622:A:C3'   | 2.75                     | 0.70              |
| 33:DA:714:G:H5''   | 33:DA:715:A:OP2   | 1.91                     | 0.70              |
| 33:DA:853:C:C2     | 33:DA:854:U:H6    | 2.10                     | 0.70              |
| 33:DA:913:A:H4'    | 33:DA:914:A:O5'   | 1.90                     | 0.70              |
| 33:DA:1135:U:H2'   | 33:DA:1135:U:O2   | 1.91                     | 0.70              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:DH:6:ILE:HG22  | 40:DH:6:ILE:O     | 1.90                     | 0.70              |
| 41:DI:119:LYS:HB2 | 41:DI:122:ARG:HB2 | 1.73                     | 0.70              |
| 47:DO:52:ARG:O    | 47:DO:55:LEU:HB3  | 1.92                     | 0.70              |
| 8:AB:370:G:P      | 8:AB:370:G:H8     | 2.15                     | 0.70              |
| 8:AB:413:C:H4'    | 8:AB:1880:U:O2'   | 1.91                     | 0.70              |
| 8:AB:547:A:H5''   | 8:AB:548:G:N7     | 2.07                     | 0.70              |
| 8:AB:574:A:H4'    | 8:AB:575:A:H5''   | 1.74                     | 0.70              |
| 8:AB:2700:A:C2    | 8:AB:2701:U:N3    | 2.60                     | 0.70              |
| 9:AC:131:MET:HB2  | 9:AC:185:ALA:O    | 1.92                     | 0.70              |
| 13:AG:17:LYS:O    | 13:AG:24:THR:HG22 | 1.92                     | 0.70              |
| 22:AP:86:LYS:O    | 22:AP:88:ARG:N    | 2.25                     | 0.70              |
| 23:AQ:91:ARG:O    | 23:AQ:92:LYS:O    | 2.09                     | 0.70              |
| 27:AU:39:ASN:ND2  | 27:AU:42:LYS:HE2  | 2.06                     | 0.70              |
| 27:AU:84:PHE:HD1  | 27:AU:94:PHE:HE1  | 1.40                     | 0.70              |
| 33:BA:428:G:H5''  | 36:BD:9:LYS:HD2   | 1.74                     | 0.70              |
| 33:BA:644:U:H4'   | 40:BH:83:ARG:NH1  | 2.06                     | 0.70              |
| 39:BG:102:TRP:HA  | 39:BG:105:GLU:HB2 | 1.73                     | 0.70              |
| 42:BJ:33:GLY:H    | 42:BJ:83:THR:HG21 | 1.56                     | 0.70              |
| 44:BL:65:TYR:HB3  | 44:BL:95:HIS:HA   | 1.74                     | 0.70              |
| 7:CA:43:C:H3'     | 7:CA:44:G:H5'     | 1.74                     | 0.70              |
| 7:CA:107:G:C8     | 7:CA:107:G:O5'    | 2.44                     | 0.70              |
| 7:CA:113:C:C4     | 7:CA:114:C:C5     | 2.79                     | 0.70              |
| 8:CB:418:C:H2'    | 8:CB:419:U:C6     | 2.26                     | 0.70              |
| 8:CB:568:U:HO2'   | 8:CB:569:U:H3'    | 1.57                     | 0.70              |
| 8:CB:692:C:N4     | 8:CB:770:G:C6     | 2.59                     | 0.70              |
| 8:CB:872:U:H5'    | 8:CB:873:C:OP2    | 1.92                     | 0.70              |
| 8:CB:991:C:H6     | 8:CB:991:C:H5'    | 1.57                     | 0.70              |
| 8:CB:1672:A:C6    | 8:CB:1673:G:C5    | 2.80                     | 0.70              |
| 8:CB:2471:A:H61   | 8:CB:2479:U:H3    | 1.40                     | 0.70              |
| 8:CB:2733:A:H2'   | 8:CB:2734:A:H5'   | 1.74                     | 0.70              |
| 9:CC:161:VAL:H    | 9:CC:193:GLU:CD   | 1.94                     | 0.70              |
| 10:CD:184:ARG:HA  | 10:CD:184:ARG:NE  | 2.05                     | 0.70              |
| 29:CW:38:ARG:HB3  | 29:CW:68:PHE:CD1  | 2.27                     | 0.70              |
| 33:DA:323:U:H4'   | 52:DT:16:ALA:CB   | 2.22                     | 0.70              |
| 34:DB:169:HIS:O   | 34:DB:171:ALA:N   | 2.25                     | 0.70              |
| 44:DL:107:LYS:O   | 44:DL:108:ASP:HB2 | 1.92                     | 0.70              |
| 45:DM:3:ILE:HD11  | 45:DM:52:ILE:HD11 | 1.72                     | 0.70              |
| 50:DR:50:TYR:O    | 50:DR:54:LEU:N    | 2.25                     | 0.70              |
| 52:DT:3:ILE:O     | 52:DT:4:LYS:CB    | 2.39                     | 0.70              |
| 4:A3:40:LYS:O     | 4:A3:42:HIS:N     | 2.25                     | 0.69              |
| 8:AB:103:A:H2'    | 8:AB:104:A:O5'    | 1.92                     | 0.69              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:106:C:H3'     | 8:AB:106:C:C6     | 2.26                     | 0.69              |
| 8:AB:464:U:H2'     | 8:AB:465:G:H8     | 1.56                     | 0.69              |
| 8:AB:1506:U:H2'    | 8:AB:1507:C:C6    | 2.27                     | 0.69              |
| 8:AB:1645:G:H5''   | 8:AB:1646:C:H5'   | 1.72                     | 0.69              |
| 8:AB:2532:G:H2'    | 8:AB:2533:U:C6    | 2.26                     | 0.69              |
| 8:AB:2842:G:H5''   | 8:AB:2843:G:OP2   | 1.92                     | 0.69              |
| 10:AD:146:ILE:HD12 | 10:AD:146:ILE:N   | 2.06                     | 0.69              |
| 19:AM:16:ARG:HB2   | 19:AM:16:ARG:HH11 | 1.57                     | 0.69              |
| 20:AN:9:GLN:HB2    | 20:AN:17:ARG:NH2  | 2.06                     | 0.69              |
| 20:AN:62:ASN:O     | 20:AN:64:ARG:N    | 2.25                     | 0.69              |
| 21:AO:76:LYS:HG2   | 21:AO:109:ALA:HB3 | 1.74                     | 0.69              |
| 26:AT:27:SER:HB3   | 26:AT:29:THR:HG23 | 1.73                     | 0.69              |
| 29:AW:19:ARG:HA    | 29:AW:33:GLY:HA2  | 1.73                     | 0.69              |
| 33:BA:289:G:OP2    | 55:BA:5064:HOH:O  | 2.09                     | 0.69              |
| 33:BA:1238:A:N6    | 33:BA:1239:A:H62  | 1.90                     | 0.69              |
| 45:BM:44:ILE:HD12  | 45:BM:44:ILE:N    | 2.07                     | 0.69              |
| 46:BN:27:LYS:HD2   | 46:BN:28:ALA:N    | 2.07                     | 0.69              |
| 7:CA:47:C:OP1      | 21:CO:1:MET:SD    | 2.50                     | 0.69              |
| 8:CB:173:A:H2'     | 8:CB:174:U:C6     | 2.26                     | 0.69              |
| 8:CB:482:A:N7      | 8:CB:506:G:C2     | 2.60                     | 0.69              |
| 8:CB:1029:A:H3'    | 8:CB:1030:C:H6    | 1.57                     | 0.69              |
| 8:CB:1162:G:N3     | 24:CR:93:PHE:HZ   | 1.89                     | 0.69              |
| 8:CB:1803:A:H2     | 8:CB:1822:C:O2    | 1.75                     | 0.69              |
| 8:CB:1805:A:C2     | 8:CB:1813:G:C2    | 2.80                     | 0.69              |
| 8:CB:2593:U:H2'    | 8:CB:2594:C:H6    | 1.57                     | 0.69              |
| 33:DA:372:C:H42    | 33:DA:389:A:H62   | 1.40                     | 0.69              |
| 33:DA:540:G:N7     | 33:DA:541:G:N7    | 2.40                     | 0.69              |
| 34:DB:20:ARG:O     | 34:DB:21:TYR:HD1  | 1.73                     | 0.69              |
| 39:DG:8:GLN:HG3    | 39:DG:9:ARG:N     | 2.07                     | 0.69              |
| 52:DT:79:THR:HA    | 52:DT:82:ILE:HG12 | 1.74                     | 0.69              |
| 4:A3:48:MET:SD     | 8:AB:2359:C:O3'   | 2.49                     | 0.69              |
| 4:A3:61:LEU:HB2    | 4:A3:63:TYR:CE2   | 2.28                     | 0.69              |
| 8:AB:1808:A:H3'    | 8:AB:1809:A:H8    | 1.56                     | 0.69              |
| 8:AB:2757:A:H2'    | 8:AB:2757:A:N3    | 2.07                     | 0.69              |
| 8:AB:2765:A:H3'    | 8:AB:2766:A:C8    | 2.27                     | 0.69              |
| 9:AC:230:PRO:HA    | 55:AC:2002:HOH:O  | 1.90                     | 0.69              |
| 23:AQ:40:LYS:O     | 23:AQ:43:GLN:HG2  | 1.93                     | 0.69              |
| 27:AU:38:ILE:O     | 27:AU:62:ALA:HB2  | 1.92                     | 0.69              |
| 28:AV:70:ILE:HD13  | 28:AV:70:ILE:H    | 1.56                     | 0.69              |
| 33:BA:94:G:H5'     | 33:BA:94:G:H8     | 1.55                     | 0.69              |
| 33:BA:775:G:N2     | 33:BA:776:G:C4    | 2.60                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:782:A:H2'   | 33:BA:782:A:N3     | 2.06                     | 0.69              |
| 33:BA:863:U:O2    | 33:BA:863:U:H2'    | 1.92                     | 0.69              |
| 33:BA:1148:U:H2'  | 33:BA:1149:C:O4'   | 1.92                     | 0.69              |
| 36:BD:13:ARG:HA   | 36:BD:37:PRO:HG2   | 1.74                     | 0.69              |
| 8:CB:136:G:N2     | 26:CT:3:ARG:NH2    | 2.38                     | 0.69              |
| 8:CB:137:U:H2'    | 8:CB:138:U:O4'     | 1.92                     | 0.69              |
| 8:CB:599:A:N3     | 8:CB:659:G:C2      | 2.61                     | 0.69              |
| 8:CB:862:G:H2'    | 8:CB:863:A:C8      | 2.26                     | 0.69              |
| 8:CB:985:C:H2'    | 8:CB:986:C:H6      | 1.57                     | 0.69              |
| 8:CB:1362:C:O2'   | 8:CB:1363:C:H5'    | 1.92                     | 0.69              |
| 8:CB:1566:A:N3    | 9:CC:213:ARG:HG2   | 2.06                     | 0.69              |
| 8:CB:2460:U:H3'   | 8:CB:2461:A:H8     | 1.57                     | 0.69              |
| 9:CC:53:ILE:HG12  | 9:CC:218:THR:CA    | 2.22                     | 0.69              |
| 12:CF:33:ILE:HD11 | 12:CF:90:LEU:HD13  | 1.74                     | 0.69              |
| 16:CJ:127:GLY:C   | 16:CJ:128:ASN:HD22 | 1.95                     | 0.69              |
| 23:CQ:38:VAL:O    | 23:CQ:38:VAL:HG23  | 1.91                     | 0.69              |
| 27:CU:48:VAL:HG13 | 27:CU:51:LEU:HA    | 1.74                     | 0.69              |
| 31:CY:8:GLN:NE2   | 31:CY:28:LEU:HB3   | 2.07                     | 0.69              |
| 33:DA:72:A:H2'    | 33:DA:73:C:O4'     | 1.92                     | 0.69              |
| 33:DA:679:C:N4    | 33:DA:711:G:H1     | 1.89                     | 0.69              |
| 33:DA:687:A:H2    | 33:DA:704:A:C4     | 2.10                     | 0.69              |
| 33:DA:750:C:H6    | 33:DA:750:C:H3'    | 1.57                     | 0.69              |
| 33:DA:1261:A:N6   | 33:DA:1274:A:H1'   | 2.07                     | 0.69              |
| 33:DA:1438:G:H2'  | 33:DA:1439:G:C8    | 2.27                     | 0.69              |
| 44:DL:30:ARG:O    | 44:DL:57:THR:HG23  | 1.92                     | 0.69              |
| 45:DM:79:LEU:HD11 | 45:DM:90:HIS:CD2   | 2.27                     | 0.69              |
| 46:DN:30:ILE:HB   | 46:DN:44:VAL:HB    | 1.72                     | 0.69              |
| 8:AB:390:U:H4'    | 8:AB:391:A:C5'     | 2.22                     | 0.69              |
| 8:AB:585:G:O2'    | 11:AE:77:ILE:HD13  | 1.93                     | 0.69              |
| 8:AB:942:G:C5'    | 18:AL:40:SER:HB3   | 2.22                     | 0.69              |
| 8:AB:2040:G:H2'   | 8:AB:2041:U:C6     | 2.27                     | 0.69              |
| 8:AB:2456:C:O5'   | 8:AB:2456:C:H6     | 1.75                     | 0.69              |
| 8:AB:2591:C:C2'   | 8:AB:2592:G:H8     | 2.01                     | 0.69              |
| 8:AB:2764:A:H2'   | 8:AB:2765:A:H5''   | 1.73                     | 0.69              |
| 8:AB:2849:U:H4'   | 8:AB:2850:A:H5'    | 1.73                     | 0.69              |
| 9:AC:124:LYS:HG3  | 9:AC:126:GLY:H     | 1.57                     | 0.69              |
| 11:AE:6:LYS:HE3   | 11:AE:119:ILE:H    | 1.57                     | 0.69              |
| 30:AX:22:LEU:HB3  | 30:AX:26:PHE:CE2   | 2.27                     | 0.69              |
| 30:AX:48:ARG:O    | 30:AX:50:VAL:N     | 2.18                     | 0.69              |
| 33:BA:661:G:H8    | 33:BA:661:G:H5''   | 1.56                     | 0.69              |
| 33:BA:1060:U:C5   | 35:BC:1:GLY:HA3    | 2.28                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1076:U:H2'   | 33:BA:1077:G:H5'   | 1.74                     | 0.69              |
| 34:BB:166:ASP:HA   | 34:BB:169:HIS:HB3  | 1.74                     | 0.69              |
| 7:CA:105:G:C2      | 7:CA:106:G:C8      | 2.81                     | 0.69              |
| 8:CB:2768:U:C4     | 8:CB:2769:U:C5     | 2.80                     | 0.69              |
| 10:CD:31:ALA:HA    | 10:CD:49:GLN:NE2   | 2.07                     | 0.69              |
| 14:CH:8:LYS:O      | 14:CH:9:VAL:HG22   | 1.92                     | 0.69              |
| 17:CK:34:GLY:O     | 17:CK:36:GLY:N     | 2.26                     | 0.69              |
| 20:CN:8:ARG:NH2    | 20:CN:46:ARG:HG3   | 2.07                     | 0.69              |
| 33:DA:709:U:H2'    | 33:DA:710:G:H8     | 1.56                     | 0.69              |
| 33:DA:1266:G:N2    | 33:DA:1269:A:OP2   | 2.25                     | 0.69              |
| 33:DA:1272:G:H2'   | 33:DA:1273:C:O4'   | 1.92                     | 0.69              |
| 39:DG:68:VAL:HG23  | 39:DG:99:ALA:HB1   | 1.74                     | 0.69              |
| 48:DP:8:ARG:NH1    | 48:DP:15:PRO:HB3   | 2.07                     | 0.69              |
| 6:A5:151:GLN:HA    | 6:A5:154:ILE:HG22  | 1.74                     | 0.69              |
| 8:AB:375:G:C8      | 8:AB:375:G:H5''    | 2.28                     | 0.69              |
| 8:AB:944:C:H2'     | 55:AB:4409:HOH:O   | 1.91                     | 0.69              |
| 8:AB:1359:A:H5'    | 8:AB:1359:A:C8     | 2.27                     | 0.69              |
| 8:AB:2086:U:C2     | 8:AB:2234:G:C6     | 2.80                     | 0.69              |
| 8:AB:2500:U:H5'    | 8:AB:2501:C:OP2    | 1.91                     | 0.69              |
| 8:AB:2553:G:N3     | 8:AB:2583:G:HI'    | 2.07                     | 0.69              |
| 8:AB:2820:A:H5''   | 8:AB:2820:A:C8     | 2.27                     | 0.69              |
| 8:AB:2885:G:C6     | 8:AB:2886:A:H8     | 2.10                     | 0.69              |
| 9:AC:181:ARG:CA    | 9:AC:263:ASP:HB2   | 2.17                     | 0.69              |
| 13:AG:162:ARG:HH22 | 13:AG:168:VAL:CG1  | 2.04                     | 0.69              |
| 14:AH:6:LEU:HD22   | 14:AH:15:LEU:O     | 1.92                     | 0.69              |
| 18:AL:29:LYS:HD2   | 18:AL:31:GLY:N     | 2.07                     | 0.69              |
| 18:AL:78:ARG:NH2   | 18:AL:82:LEU:HG    | 2.07                     | 0.69              |
| 26:AT:15:HIS:NE2   | 26:AT:80:TRP:HZ2   | 1.87                     | 0.69              |
| 27:AU:46:LYS:HD2   | 27:AU:55:GLY:HA2   | 1.73                     | 0.69              |
| 29:AW:23:LYS:HB2   | 29:AW:23:LYS:HZ1   | 1.56                     | 0.69              |
| 29:AW:66:VAL:HG22  | 29:AW:67:LYS:N     | 2.07                     | 0.69              |
| 30:AX:18:LEU:HD13  | 30:AX:19:LEU:N     | 2.05                     | 0.69              |
| 33:BA:238:A:C2     | 33:BA:239:U:C6     | 2.80                     | 0.69              |
| 33:BA:452:A:H5''   | 33:BA:452:A:C8     | 2.26                     | 0.69              |
| 33:BA:479:U:H3'    | 33:BA:479:U:C6     | 2.27                     | 0.69              |
| 33:BA:676:A:C2     | 33:BA:677:U:C4     | 2.80                     | 0.69              |
| 33:BA:905:U:C5     | 33:BA:906:A:N7     | 2.60                     | 0.69              |
| 33:BA:1272:G:H2'   | 33:BA:1273:C:O4'   | 1.93                     | 0.69              |
| 34:BB:110:ILE:O    | 34:BB:113:LEU:HB3  | 1.93                     | 0.69              |
| 34:BB:163:ILE:HA   | 34:BB:185:ILE:CD1  | 2.22                     | 0.69              |
| 36:BD:117:VAL:HG22 | 36:BD:122:ILE:HD12 | 1.74                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:BF:74:LEU:HG   | 38:BF:78:PHE:HE1   | 1.57                     | 0.69              |
| 50:BR:27:THR:HG22 | 50:BR:28:LEU:HD12  | 1.73                     | 0.69              |
| 7:CA:51:G:H2'     | 7:CA:51:G:N3       | 2.05                     | 0.69              |
| 8:CB:300:A:N3     | 8:CB:319:G:H1'     | 2.07                     | 0.69              |
| 8:CB:632:A:O3'    | 18:CL:69:ARG:HB3   | 1.92                     | 0.69              |
| 8:CB:749:A:C5     | 8:CB:1618:A:N1     | 2.61                     | 0.69              |
| 8:CB:949:G:H5''   | 8:CB:950:G:OP2     | 1.91                     | 0.69              |
| 8:CB:1323:C:C3'   | 8:CB:1324:G:H5''   | 2.23                     | 0.69              |
| 8:CB:1387:A:H2'   | 8:CB:1388:G:H8     | 1.55                     | 0.69              |
| 8:CB:1451:C:H2'   | 8:CB:1458:U:O2     | 1.93                     | 0.69              |
| 8:CB:1601:G:P     | 26:CT:62:VAL:HG11  | 2.33                     | 0.69              |
| 8:CB:1687:G:C2    | 8:CB:1688:U:C5     | 2.80                     | 0.69              |
| 8:CB:1996:C:H5    | 17:CK:32:TYR:OH    | 1.75                     | 0.69              |
| 8:CB:2377:A:N3    | 21:CO:92:PHE:HZ    | 1.89                     | 0.69              |
| 8:CB:2754:U:H2'   | 8:CB:2755:C:H5''   | 1.73                     | 0.69              |
| 9:CC:52:HIS:O     | 9:CC:53:ILE:HD12   | 1.92                     | 0.69              |
| 10:CD:11:MET:SD   | 22:CP:9:GLN:NE2    | 2.65                     | 0.69              |
| 10:CD:13:ARG:NE   | 10:CD:13:ARG:HA    | 2.07                     | 0.69              |
| 24:CR:20:VAL:HG13 | 24:CR:97:LYS:HD3   | 1.74                     | 0.69              |
| 33:DA:143:A:H8    | 33:DA:143:A:O5'    | 1.75                     | 0.69              |
| 33:DA:538:G:OP1   | 44:DL:111:GLN:HB2  | 1.92                     | 0.69              |
| 33:DA:679:C:H42   | 33:DA:711:G:H1     | 1.40                     | 0.69              |
| 33:DA:740:U:O2'   | 33:DA:741:G:H5'    | 1.93                     | 0.69              |
| 33:DA:797:C:O2'   | 33:DA:798:U:H5'    | 1.91                     | 0.69              |
| 33:DA:906:A:H2'   | 33:DA:907:A:H5''   | 1.74                     | 0.69              |
| 33:DA:1118:U:OP1  | 41:DI:105:ARG:HG3  | 1.92                     | 0.69              |
| 33:DA:1417:G:H2'  | 33:DA:1482:G:N2    | 2.08                     | 0.69              |
| 39:DG:115:MET:CE  | 39:DG:119:LEU:HD13 | 2.22                     | 0.69              |
| 41:DI:94:ARG:HG3  | 41:DI:94:ARG:NH1   | 2.05                     | 0.69              |
| 42:DJ:42:LEU:HG   | 42:DJ:43:PRO:HD2   | 1.74                     | 0.69              |
| 3:A2:40:ALA:HA    | 8:AB:459:U:OP1     | 1.93                     | 0.69              |
| 5:A4:30:GLU:HG3   | 5:A4:32:LYS:H      | 1.55                     | 0.69              |
| 8:AB:71:A:H4'     | 8:AB:72:U:H5''     | 1.75                     | 0.69              |
| 8:AB:204:A:N7     | 8:AB:206:U:N3      | 2.40                     | 0.69              |
| 8:AB:530:G:N2     | 8:AB:2023:C:H5     | 1.89                     | 0.69              |
| 8:AB:827:U:OP2    | 8:AB:828:U:H5      | 1.76                     | 0.69              |
| 8:AB:988:A:H8     | 8:AB:988:A:O5'     | 1.74                     | 0.69              |
| 8:AB:1430:G:H2'   | 8:AB:1431:A:H8     | 1.58                     | 0.69              |
| 8:AB:1814:G:H5'   | 8:AB:1814:G:C8     | 2.27                     | 0.69              |
| 8:AB:2636:C:H4'   | 10:AD:80:TRP:CD2   | 2.26                     | 0.69              |
| 9:AC:53:ILE:CG1   | 9:AC:218:THR:OG1   | 2.40                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AD:77:ARG:O    | 10:AD:79:LEU:HG    | 1.92                     | 0.69              |
| 12:AF:46:LYS:C    | 12:AF:48:LEU:H     | 1.96                     | 0.69              |
| 16:AJ:45:THR:HA   | 23:AQ:63:ARG:HH21  | 1.56                     | 0.69              |
| 24:AR:39:LEU:HD11 | 24:AR:59:ILE:N     | 2.07                     | 0.69              |
| 29:AW:80:SER:CB   | 29:AW:84:GLU:HB2   | 2.23                     | 0.69              |
| 33:BA:81:A:H2     | 33:BA:89:U:N3      | 1.89                     | 0.69              |
| 33:BA:970:C:H5    | 33:BA:1231:G:O2'   | 1.75                     | 0.69              |
| 34:BB:99:MET:HA   | 34:BB:106:VAL:HG21 | 1.74                     | 0.69              |
| 34:BB:133:ALA:O   | 34:BB:137:THR:HG23 | 1.93                     | 0.69              |
| 8:CB:448:U:C5     | 8:CB:583:G:N3      | 2.58                     | 0.69              |
| 8:CB:566:U:H2'    | 8:CB:567:U:H6      | 1.54                     | 0.69              |
| 8:CB:1259:G:H2'   | 8:CB:1260:A:H8     | 1.55                     | 0.69              |
| 8:CB:2071:A:H2'   | 8:CB:2072:C:H6     | 1.56                     | 0.69              |
| 8:CB:2539:C:C3'   | 8:CB:2540:C:H5''   | 2.22                     | 0.69              |
| 8:CB:2853:C:H2'   | 8:CB:2854:G:C8     | 2.27                     | 0.69              |
| 10:CD:128:ARG:HD3 | 10:CD:128:ARG:N    | 2.07                     | 0.69              |
| 10:CD:147:GLY:O   | 10:CD:148:GLN:O    | 2.10                     | 0.69              |
| 17:CK:84:CYS:O    | 17:CK:85:VAL:HB    | 1.90                     | 0.69              |
| 18:CL:18:ARG:HD2  | 18:CL:20:GLY:HA2   | 1.74                     | 0.69              |
| 20:CN:71:ARG:O    | 20:CN:72:ASP:HB3   | 1.92                     | 0.69              |
| 28:CV:41:GLU:O    | 28:CV:42:LEU:HD23  | 1.93                     | 0.69              |
| 33:DA:161:A:H2'   | 33:DA:162:A:C8     | 2.28                     | 0.69              |
| 33:DA:563:A:N1    | 33:DA:567:G:C2     | 2.60                     | 0.69              |
| 33:DA:975:A:N3    | 33:DA:1357:A:H2    | 1.89                     | 0.69              |
| 34:DB:153:MET:SD  | 34:DB:157:PRO:HD3  | 2.31                     | 0.69              |
| 36:DD:81:LEU:O    | 36:DD:83:GLY:N     | 2.25                     | 0.69              |
| 39:DG:25:PHE:HB2  | 39:DG:100:MET:CE   | 2.22                     | 0.69              |
| 41:DI:98:ARG:HG3  | 41:DI:103:VAL:CG2  | 2.21                     | 0.69              |
| 8:AB:323:C:O2     | 8:AB:333:G:H1'     | 1.92                     | 0.69              |
| 8:AB:1127:A:C2    | 8:AB:2518:A:C4     | 2.80                     | 0.69              |
| 17:AK:5:GLN:O     | 17:AK:21:CYS:HB3   | 1.92                     | 0.69              |
| 19:AM:50:ARG:HH22 | 19:AM:53:MET:HE3   | 1.56                     | 0.69              |
| 25:AS:90:LYS:HE3  | 25:AS:90:LYS:HA    | 1.73                     | 0.69              |
| 33:BA:431:A:H8    | 33:BA:431:A:O5'    | 1.75                     | 0.69              |
| 33:BA:581:G:H2'   | 33:BA:758:C:N4     | 2.06                     | 0.69              |
| 33:BA:735:C:O2    | 33:BA:735:C:H2'    | 1.92                     | 0.69              |
| 33:BA:774:G:C6    | 33:BA:775:G:C5     | 2.81                     | 0.69              |
| 33:BA:1087:G:H8   | 33:BA:1087:G:O5'   | 1.76                     | 0.69              |
| 33:BA:1236:A:H2'  | 33:BA:1237:C:C6    | 2.27                     | 0.69              |
| 40:BH:64:TYR:HB3  | 40:BH:69:ALA:HA    | 1.75                     | 0.69              |
| 3:C2:31:LEU:O     | 3:C2:35:ARG:HB2    | 1.91                     | 0.69              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:C3:54:LEU:O      | 4:C3:56:LEU:N     | 2.26                     | 0.69              |
| 8:CB:210:C:O2'     | 8:CB:211:C:H5'    | 1.92                     | 0.69              |
| 8:CB:699:A:O3'     | 8:CB:1554:U:H5    | 1.74                     | 0.69              |
| 8:CB:963:U:C4      | 8:CB:964:C:N4     | 2.61                     | 0.69              |
| 8:CB:1162:G:C8     | 8:CB:1162:G:H3'   | 2.26                     | 0.69              |
| 8:CB:1494:A:H2'    | 8:CB:1495:A:C8    | 2.28                     | 0.69              |
| 8:CB:1838:C:N4     | 8:CB:1899:A:C4    | 2.60                     | 0.69              |
| 8:CB:2637:U:C2     | 8:CB:2782:G:N2    | 2.61                     | 0.69              |
| 8:CB:2764:A:H2'    | 8:CB:2765:A:H5''  | 1.74                     | 0.69              |
| 8:CB:2765:A:H3'    | 8:CB:2766:A:C8    | 2.27                     | 0.69              |
| 8:CB:2769:U:H2'    | 8:CB:2770:G:H8    | 1.57                     | 0.69              |
| 9:CC:32:LEU:HB3    | 9:CC:61:TYR:CE1   | 2.27                     | 0.69              |
| 10:CD:96:ILE:HG22  | 10:CD:98:VAL:H    | 1.56                     | 0.69              |
| 13:CG:101:VAL:HG12 | 13:CG:115:GLN:HG3 | 1.74                     | 0.69              |
| 24:CR:42:ALA:HA    | 24:CR:53:PHE:HA   | 1.73                     | 0.69              |
| 25:CS:35:ILE:O     | 25:CS:35:ILE:HG12 | 1.92                     | 0.69              |
| 32:CZ:24:ILE:O     | 32:CZ:24:ILE:HD13 | 1.93                     | 0.69              |
| 33:DA:77:A:H3'     | 33:DA:77:A:C8     | 2.28                     | 0.69              |
| 33:DA:134:G:O6     | 48:DP:25:ARG:NH1  | 2.25                     | 0.69              |
| 33:DA:238:A:C2     | 33:DA:239:U:C6    | 2.80                     | 0.69              |
| 33:DA:429:U:OP2    | 36:DD:8:LEU:HD12  | 1.93                     | 0.69              |
| 33:DA:845:A:H5'    | 33:DA:846:G:H8    | 1.57                     | 0.69              |
| 33:DA:1040:U:H2'   | 33:DA:1041:G:C8   | 2.26                     | 0.69              |
| 33:DA:1174:G:H2'   | 33:DA:1175:G:H5'  | 1.75                     | 0.69              |
| 33:DA:1443:C:H3'   | 33:DA:1443:C:C6   | 2.28                     | 0.69              |
| 38:DF:49:TYR:HB2   | 38:DF:50:PRO:HD2  | 1.74                     | 0.69              |
| 42:DJ:67:ILE:HA    | 46:DN:94:GLY:O    | 1.92                     | 0.69              |
| 44:DL:98:ARG:O     | 44:DL:105:GLY:HA2 | 1.92                     | 0.69              |
| 45:DM:4:ALA:HB3    | 45:DM:7:ASN:HB2   | 1.74                     | 0.69              |
| 46:DN:12:ARG:HG2   | 46:DN:53:ASP:O    | 1.93                     | 0.69              |
| 4:A3:7:ARG:CZ      | 8:AB:250:G:OP2    | 2.41                     | 0.69              |
| 5:A4:9:LYS:HD3     | 5:A4:9:LYS:H      | 1.57                     | 0.69              |
| 8:AB:117:G:C6      | 8:AB:119:A:N6     | 2.61                     | 0.69              |
| 8:AB:856:G:H1'     | 29:AW:23:LYS:HD2  | 1.75                     | 0.69              |
| 8:AB:1034:G:C6     | 8:AB:1122:G:C6    | 2.80                     | 0.69              |
| 8:AB:1748:C:H5''   | 8:AB:1748:C:H6    | 1.57                     | 0.69              |
| 8:AB:1842:G:N2     | 8:AB:1901:A:C5    | 2.61                     | 0.69              |
| 8:AB:1988:G:H2'    | 8:AB:1989:G:C5'   | 2.23                     | 0.69              |
| 8:AB:2366:A:H5''   | 8:AB:2367:G:OP2   | 1.92                     | 0.69              |
| 8:AB:2525:G:N2     | 8:AB:2526:G:C6    | 2.61                     | 0.69              |
| 9:AC:124:LYS:HB2   | 9:AC:125:PRO:HD3  | 1.74                     | 0.69              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:AG:10:VAL:HG12 | 13:AG:47:ASN:O    | 1.91                     | 0.69              |
| 14:AH:2:GLN:HA    | 14:AH:21:VAL:HB   | 1.74                     | 0.69              |
| 16:AJ:38:GLY:HA3  | 16:AJ:41:LYS:CE   | 2.12                     | 0.69              |
| 17:AK:98:ARG:HG2  | 17:AK:99:ILE:N    | 2.08                     | 0.69              |
| 18:AL:57:LEU:HD22 | 18:AL:58:TYR:CE2  | 2.27                     | 0.69              |
| 27:AU:70:ALA:HB3  | 27:AU:77:GLY:O    | 1.93                     | 0.69              |
| 33:BA:411:A:C6    | 33:BA:429:U:O4    | 2.46                     | 0.69              |
| 33:BA:1329:A:OP1  | 45:BM:28:ARG:HB2  | 1.91                     | 0.69              |
| 33:BA:1347:G:H22  | 33:BA:1373:G:H3'  | 1.58                     | 0.69              |
| 8:CB:141:G:H5''   | 8:CB:141:G:N3     | 2.08                     | 0.69              |
| 8:CB:398:C:C3'    | 32:CZ:49:ARG:HH22 | 1.99                     | 0.69              |
| 8:CB:828:U:O2     | 8:CB:828:U:H2'    | 1.93                     | 0.69              |
| 8:CB:1223:G:C6    | 24:CR:90:ARG:NH2  | 2.61                     | 0.69              |
| 8:CB:1373:A:H5''  | 8:CB:1374:G:OP2   | 1.92                     | 0.69              |
| 8:CB:1432:G:O2'   | 8:CB:1433:A:H5'   | 1.93                     | 0.69              |
| 8:CB:1663:G:HO2'  | 8:CB:1664:A:H8    | 1.40                     | 0.69              |
| 8:CB:2777:G:H3'   | 8:CB:2777:G:C8    | 2.28                     | 0.69              |
| 10:CD:127:PHE:O   | 10:CD:128:ARG:HD3 | 1.93                     | 0.69              |
| 12:CF:52:ALA:HB1  | 12:CF:148:VAL:CG1 | 2.22                     | 0.69              |
| 13:CG:73:SER:CB   | 13:CG:137:LYS:HE2 | 2.22                     | 0.69              |
| 17:CK:78:ARG:HH22 | 22:CP:102:ARG:NH1 | 1.91                     | 0.69              |
| 17:CK:80:ASP:HB2  | 22:CP:70:GLU:CD   | 2.12                     | 0.69              |
| 30:CX:6:LEU:HD12  | 30:CX:56:LEU:HD12 | 1.75                     | 0.69              |
| 33:DA:618:C:H5'   | 33:DA:619:U:H5''  | 1.73                     | 0.69              |
| 33:DA:784:A:O2'   | 33:DA:785:G:H5'   | 1.93                     | 0.69              |
| 33:DA:867:G:H2'   | 33:DA:868:C:H6    | 1.58                     | 0.69              |
| 33:DA:1011:C:H2'  | 33:DA:1012:A:H8   | 1.58                     | 0.69              |
| 33:DA:1278:G:H4'  | 33:DA:1279:G:C5   | 2.27                     | 0.69              |
| 37:DE:154:ALA:HB1 | 40:DH:65:PHE:CZ   | 2.28                     | 0.69              |
| 48:DP:39:PHE:HE2  | 48:DP:41:PRO:CG   | 2.04                     | 0.69              |
| 3:A2:34:ARG:HE    | 3:A2:42:LEU:CD1   | 2.04                     | 0.69              |
| 4:A3:18:LYS:HB2   | 8:AB:651:G:OP1    | 1.93                     | 0.69              |
| 7:AA:6:G:H2'      | 7:AA:7:G:H8       | 1.56                     | 0.69              |
| 7:AA:66:A:H61     | 7:AA:107:G:H2'    | 1.58                     | 0.69              |
| 8:AB:19:A:OP1     | 23:AQ:20:ALA:HB1  | 1.93                     | 0.69              |
| 8:AB:100:U:O3'    | 27:AU:90:LYS:HB3  | 1.93                     | 0.69              |
| 8:AB:282:A:H61    | 8:AB:358:U:H3     | 1.41                     | 0.69              |
| 8:AB:538:A:C4     | 8:AB:539:G:C8     | 2.81                     | 0.69              |
| 8:AB:903:C:H2'    | 8:AB:904:G:C8     | 2.27                     | 0.69              |
| 8:AB:975:A:C2'    | 8:AB:976:G:H5'    | 2.21                     | 0.69              |
| 8:AB:991:C:H6     | 8:AB:991:C:H5'    | 1.56                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:993:G:OP2     | 23:AQ:50:ARG:NH2   | 2.26                     | 0.69              |
| 8:AB:1039:A:H2'    | 8:AB:1040:A:O4'    | 1.93                     | 0.69              |
| 8:AB:1130:U:O5'    | 8:AB:1130:U:H2'    | 1.92                     | 0.69              |
| 8:AB:1815:A:C8     | 8:AB:1815:A:O5'    | 2.46                     | 0.69              |
| 8:AB:1853:A:N1     | 8:AB:2087:G:H1'    | 2.08                     | 0.69              |
| 8:AB:2074:U:N3     | 8:AB:2436:G:C2     | 2.60                     | 0.69              |
| 8:AB:2201:G:C6     | 8:AB:2202:U:O2     | 2.46                     | 0.69              |
| 8:AB:2587:A:H5''   | 8:AB:2587:A:C8     | 2.27                     | 0.69              |
| 8:AB:2669:G:H2'    | 8:AB:2670:A:H8     | 1.57                     | 0.69              |
| 9:AC:134:ILE:HD13  | 9:AC:135:PRO:HD2   | 1.73                     | 0.69              |
| 9:AC:140:VAL:O     | 9:AC:193:GLU:HB2   | 1.92                     | 0.69              |
| 10:AD:61:THR:H     | 10:AD:62:LYS:HZ1   | 1.40                     | 0.69              |
| 11:AE:126:VAL:HG12 | 11:AE:157:LEU:HD11 | 1.74                     | 0.69              |
| 13:AG:100:ASN:HA   | 13:AG:116:LEU:HB2  | 1.75                     | 0.69              |
| 14:AH:5:LEU:HG     | 14:AH:8:LYS:HA     | 1.73                     | 0.69              |
| 14:AH:25:TYR:CE1   | 14:AH:30:LEU:HB2   | 2.28                     | 0.69              |
| 21:AO:8:ILE:HG22   | 21:AO:9:ARG:N      | 2.08                     | 0.69              |
| 22:AP:61:ARG:HB3   | 22:AP:61:ARG:NH1   | 2.07                     | 0.69              |
| 23:AQ:111:LYS:HD3  | 24:AR:52:PRO:CB    | 2.21                     | 0.69              |
| 24:AR:82:HIS:ND1   | 24:AR:82:HIS:O     | 2.26                     | 0.69              |
| 33:BA:59:A:C5      | 33:BA:354:G:C6     | 2.81                     | 0.69              |
| 33:BA:219:U:H2'    | 33:BA:220:G:H5'    | 1.74                     | 0.69              |
| 33:BA:243:A:H5''   | 33:BA:243:A:H8     | 1.58                     | 0.69              |
| 33:BA:318:G:C4     | 33:BA:319:G:C8     | 2.80                     | 0.69              |
| 33:BA:350:G:C2'    | 33:BA:351:G:H5'    | 2.23                     | 0.69              |
| 33:BA:687:A:C2     | 33:BA:704:A:N7     | 2.61                     | 0.69              |
| 33:BA:728:A:C6     | 33:BA:729:A:N6     | 2.61                     | 0.69              |
| 33:BA:980:C:H4'    | 46:BN:12:ARG:NH2   | 2.07                     | 0.69              |
| 33:BA:1182:G:C8    | 33:BA:1182:G:OP2   | 2.46                     | 0.69              |
| 33:BA:1229:A:H62   | 45:BM:103:THR:CG2  | 2.05                     | 0.69              |
| 33:BA:1267:C:O2    | 33:BA:1267:C:H2'   | 1.93                     | 0.69              |
| 33:BA:1415:G:C5    | 33:BA:1486:G:C2    | 2.81                     | 0.69              |
| 36:BD:33:ILE:O     | 36:BD:34:GLU:HB3   | 1.92                     | 0.69              |
| 36:BD:131:ILE:HG22 | 36:BD:134:TYR:HB2  | 1.74                     | 0.69              |
| 38:BF:42:TRP:CE2   | 38:BF:61:LEU:HD23  | 2.28                     | 0.69              |
| 39:BG:67:ASN:O     | 39:BG:137:ARG:HD2  | 1.92                     | 0.69              |
| 43:BK:105:ARG:HG3  | 43:BK:106:ILE:H    | 1.57                     | 0.69              |
| 46:BN:82:LYS:HA    | 46:BN:82:LYS:HZ2   | 1.57                     | 0.69              |
| 51:BS:35:ARG:NH1   | 51:BS:35:ARG:HB2   | 2.08                     | 0.69              |
| 1:C0:5:ASN:ND2     | 8:CB:2019:A:N6     | 2.41                     | 0.69              |
| 5:C4:9:LYS:O       | 5:C4:25:VAL:HB     | 1.92                     | 0.69              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 7:CA:52:A:H2'      | 7:CA:53:A:H5'     | 1.75                     | 0.69              |
| 8:CB:23:G:H2'      | 8:CB:24:G:H8      | 1.57                     | 0.69              |
| 8:CB:268:C:H6      | 8:CB:268:C:H5''   | 1.58                     | 0.69              |
| 8:CB:614:A:H4'     | 8:CB:616:A:N7     | 2.08                     | 0.69              |
| 8:CB:615:U:H3'     | 8:CB:616:A:H5'    | 1.74                     | 0.69              |
| 8:CB:679:C:C2      | 8:CB:680:C:C5     | 2.81                     | 0.69              |
| 8:CB:738:G:C6      | 8:CB:739:A:C6     | 2.80                     | 0.69              |
| 8:CB:852:U:C4      | 8:CB:853:C:C4     | 2.81                     | 0.69              |
| 8:CB:866:A:N1      | 8:CB:913:U:H4'    | 2.08                     | 0.69              |
| 8:CB:1220:G:N2     | 8:CB:1221:C:C2    | 2.61                     | 0.69              |
| 8:CB:1353:A:C8     | 8:CB:1378:A:N6    | 2.61                     | 0.69              |
| 8:CB:1528:A:H2'    | 8:CB:1529:G:H5'   | 1.73                     | 0.69              |
| 8:CB:1613:G:C2'    | 8:CB:1617:C:H42   | 2.02                     | 0.69              |
| 8:CB:2360:G:H5''   | 18:CL:58:TYR:HE1  | 1.57                     | 0.69              |
| 8:CB:2765:A:O2'    | 8:CB:2766:A:H5'   | 1.92                     | 0.69              |
| 9:CC:220:ARG:HA    | 9:CC:220:ARG:CZ   | 2.22                     | 0.69              |
| 10:CD:69:ALA:CB    | 10:CD:91:THR:HB   | 2.19                     | 0.69              |
| 10:CD:121:THR:HG23 | 10:CD:128:ARG:HG3 | 1.74                     | 0.69              |
| 10:CD:121:THR:O    | 10:CD:128:ARG:HD2 | 1.92                     | 0.69              |
| 11:CE:79:ARG:O     | 11:CE:80:SER:HB3  | 1.92                     | 0.69              |
| 11:CE:103:GLY:O    | 11:CE:105:LEU:N   | 2.26                     | 0.69              |
| 13:CG:118:ALA:O    | 13:CG:120:ILE:N   | 2.24                     | 0.69              |
| 19:CM:58:LYS:HD2   | 19:CM:60:GLN:CB   | 2.22                     | 0.69              |
| 22:CP:76:HIS:O     | 22:CP:77:SER:OG   | 2.09                     | 0.69              |
| 23:CQ:85:ALA:HB3   | 23:CQ:88:GLU:HG3  | 1.75                     | 0.69              |
| 24:CR:6:GLN:HA     | 24:CR:10:LYS:HA   | 1.74                     | 0.69              |
| 24:CR:69:GLY:C     | 24:CR:70:GLU:HG3  | 2.13                     | 0.69              |
| 28:CV:70:ILE:HD13  | 28:CV:71:LYS:H    | 1.56                     | 0.69              |
| 31:CY:50:VAL:O     | 31:CY:53:MET:HG2  | 1.92                     | 0.69              |
| 33:DA:59:A:C5      | 33:DA:354:G:C6    | 2.80                     | 0.69              |
| 33:DA:250:A:H2'    | 33:DA:250:A:N3    | 2.06                     | 0.69              |
| 33:DA:350:G:C2'    | 33:DA:351:G:H5'   | 2.23                     | 0.69              |
| 33:DA:415:A:N6     | 33:DA:416:G:C2    | 2.61                     | 0.69              |
| 33:DA:427:U:H5''   | 33:DA:428:G:OP2   | 1.93                     | 0.69              |
| 33:DA:483:C:H5''   | 33:DA:484:G:OP2   | 1.93                     | 0.69              |
| 33:DA:671:G:H21    | 33:DA:672:U:H1'   | 1.58                     | 0.69              |
| 33:DA:687:A:H2     | 33:DA:704:A:C5    | 2.10                     | 0.69              |
| 33:DA:745:G:H2'    | 33:DA:746:A:O4'   | 1.92                     | 0.69              |
| 33:DA:905:U:H5'    | 33:DA:906:A:OP2   | 1.92                     | 0.69              |
| 33:DA:961:U:C4     | 33:DA:983:A:N6    | 2.61                     | 0.69              |
| 33:DA:974:A:H4'    | 33:DA:975:A:O5'   | 1.93                     | 0.69              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:1222:G:H2'  | 33:DA:1223:C:O4'   | 1.92                     | 0.69              |
| 33:DA:1425:U:C3'  | 33:DA:1425:U:H6    | 2.04                     | 0.69              |
| 44:DL:93:ARG:H    | 44:DL:93:ARG:CD    | 2.02                     | 0.69              |
| 4:A3:28:LEU:HB3   | 4:A3:33:THR:HG22   | 1.75                     | 0.69              |
| 5:A4:10:LEU:HD22  | 8:AB:2477:U:O4     | 1.93                     | 0.69              |
| 8:AB:1090:A:HO2'  | 8:AB:1091:G:H8     | 1.40                     | 0.69              |
| 8:AB:1375:U:H3'   | 8:AB:1376:C:H5''   | 1.73                     | 0.69              |
| 8:AB:1710:G:H2'   | 8:AB:1711:A:H8     | 1.58                     | 0.69              |
| 9:AC:63:ILE:C     | 9:AC:64:VAL:HG22   | 2.14                     | 0.69              |
| 9:AC:235:GLU:HG2  | 9:AC:236:GLY:H     | 1.55                     | 0.69              |
| 10:AD:174:SER:HB2 | 10:AD:208:LYS:HG3  | 1.74                     | 0.69              |
| 15:AI:60:VAL:HG22 | 15:AI:66:PHE:HB3   | 1.75                     | 0.69              |
| 16:AJ:45:THR:HG23 | 23:AQ:63:ARG:CD    | 2.23                     | 0.69              |
| 24:AR:65:ALA:HB3  | 24:AR:99:THR:H     | 1.56                     | 0.69              |
| 33:BA:677:U:H3    | 33:BA:714:G:N2     | 1.83                     | 0.69              |
| 33:BA:1060:U:H1'  | 33:BA:1198:G:N2    | 2.08                     | 0.69              |
| 33:BA:1479:C:H2'  | 33:BA:1480:A:H8    | 1.56                     | 0.69              |
| 34:BB:96:LEU:HD23 | 34:BB:99:MET:HE1   | 1.74                     | 0.69              |
| 36:BD:110:ARG:O   | 36:BD:114:ARG:HB2  | 1.92                     | 0.69              |
| 44:BL:64:SER:HA   | 44:BL:94:TYR:O     | 1.93                     | 0.69              |
| 8:CB:2019:A:H2    | 8:CB:2035:G:H22    | 1.41                     | 0.69              |
| 9:CC:143:VAL:HG23 | 9:CC:152:GLN:HG3   | 1.75                     | 0.69              |
| 10:CD:60:VAL:CG2  | 10:CD:63:PRO:HG2   | 2.23                     | 0.69              |
| 12:CF:102:LEU:O   | 12:CF:107:VAL:HG23 | 1.93                     | 0.69              |
| 18:CL:124:GLY:C   | 18:CL:125:LEU:HG   | 2.13                     | 0.69              |
| 25:CS:73:LYS:HB2  | 25:CS:106:VAL:CG2  | 2.23                     | 0.69              |
| 28:CV:70:ILE:HD13 | 28:CV:70:ILE:H     | 1.58                     | 0.69              |
| 30:CX:6:LEU:H     | 30:CX:6:LEU:HD23   | 1.56                     | 0.69              |
| 33:DA:438:U:H5'   | 36:DD:119:HIS:CD2  | 2.28                     | 0.69              |
| 33:DA:1443:C:H3'  | 33:DA:1443:C:H6    | 1.58                     | 0.69              |
| 34:DB:10:LYS:O    | 34:DB:13:VAL:HG23  | 1.93                     | 0.69              |
| 35:DC:17:TRP:HZ3  | 46:DN:94:GLY:H     | 1.38                     | 0.69              |
| 36:DD:13:ARG:HD2  | 36:DD:55:ARG:HH21  | 1.58                     | 0.69              |
| 41:DI:40:ARG:H    | 41:DI:44:ARG:CD    | 2.06                     | 0.69              |
| 8:AB:201:C:C5     | 8:AB:202:U:H5      | 2.10                     | 0.69              |
| 8:AB:615:U:H3'    | 8:AB:616:A:C5'     | 2.23                     | 0.69              |
| 8:AB:852:U:C4     | 8:AB:853:C:C4      | 2.80                     | 0.69              |
| 8:AB:943:A:OP2    | 18:AL:42:SER:HB3   | 1.92                     | 0.69              |
| 8:AB:1165:A:H2'   | 8:AB:1166:G:C8     | 2.22                     | 0.69              |
| 8:AB:1259:G:H2'   | 8:AB:1260:A:H8     | 1.56                     | 0.69              |
| 8:AB:1291:C:H6    | 8:AB:1291:C:C5'    | 2.05                     | 0.69              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1364:G:H1'   | 8:AB:1368:G:H22   | 1.58                     | 0.69              |
| 8:AB:1393:A:O2'   | 8:AB:1394:U:H5'   | 1.93                     | 0.69              |
| 8:AB:1516:G:H2'   | 8:AB:1517:G:H8    | 1.58                     | 0.69              |
| 8:AB:2697:G:N7    | 8:AB:2698:U:C5    | 2.60                     | 0.69              |
| 13:AG:8:VAL:CG1   | 13:AG:49:LEU:HB2  | 2.22                     | 0.69              |
| 13:AG:153:PRO:HA  | 13:AG:160:GLY:HA3 | 1.74                     | 0.69              |
| 14:AH:26:ALA:HB2  | 14:AH:30:LEU:CD1  | 2.22                     | 0.69              |
| 16:AJ:15:TRP:HB2  | 16:AJ:138:GLN:O   | 1.92                     | 0.69              |
| 16:AJ:63:ALA:HA   | 16:AJ:69:ARG:HH12 | 1.58                     | 0.69              |
| 22:AP:17:PRO:HA   | 22:AP:83:ILE:HG21 | 1.73                     | 0.69              |
| 24:AR:5:PHE:HD1   | 24:AR:40:MET:HB2  | 1.57                     | 0.69              |
| 27:AU:38:ILE:HB   | 27:AU:62:ALA:CB   | 2.23                     | 0.69              |
| 27:AU:46:LYS:O    | 27:AU:53:GLN:HB3  | 1.91                     | 0.69              |
| 27:AU:57:ILE:HG13 | 27:AU:58:VAL:N    | 2.07                     | 0.69              |
| 29:AW:40:ARG:HH11 | 29:AW:40:ARG:HG3  | 1.58                     | 0.69              |
| 33:BA:60:A:H4'    | 33:BA:61:G:OP1    | 1.92                     | 0.69              |
| 33:BA:250:A:H2'   | 33:BA:250:A:N3    | 2.06                     | 0.69              |
| 33:BA:1379:G:H5'' | 33:BA:1379:G:H8   | 1.57                     | 0.69              |
| 33:BA:1513:A:O2'  | 33:BA:1514:G:H5'  | 1.92                     | 0.69              |
| 35:BC:70:ALA:HB1  | 35:BC:108:PRO:HG3 | 1.73                     | 0.69              |
| 42:BJ:48:ARG:HA   | 42:BJ:66:GLU:HB2  | 1.75                     | 0.69              |
| 4:C3:12:ARG:CD    | 4:C3:23:HIS:HB2   | 2.23                     | 0.69              |
| 8:CB:56:A:H2'     | 8:CB:57:C:C6      | 2.28                     | 0.69              |
| 8:CB:551:G:C8     | 8:CB:551:G:H3'    | 2.28                     | 0.69              |
| 8:CB:563:A:C6     | 8:CB:2018:G:C5    | 2.80                     | 0.69              |
| 8:CB:988:A:H8     | 8:CB:988:A:O5'    | 1.74                     | 0.69              |
| 8:CB:1443:U:H2'   | 8:CB:1444:G:H8    | 1.58                     | 0.69              |
| 8:CB:1643:G:N2    | 8:CB:1644:C:H1'   | 2.06                     | 0.69              |
| 8:CB:2885:G:C2    | 8:CB:2886:A:H1'   | 2.26                     | 0.69              |
| 16:CJ:113:PRO:HA  | 16:CJ:116:ARG:HB2 | 1.75                     | 0.69              |
| 18:CL:33:ARG:HB3  | 24:CR:85:LYS:HE2  | 1.74                     | 0.69              |
| 19:CM:64:TRP:CD1  | 19:CM:64:TRP:N    | 2.59                     | 0.69              |
| 24:CR:74:ILE:O    | 24:CR:75:VAL:HG13 | 1.92                     | 0.69              |
| 32:CZ:21:VAL:O    | 32:CZ:22:MET:HG3  | 1.93                     | 0.69              |
| 33:DA:357:G:N3    | 33:DA:358:U:H5    | 1.91                     | 0.69              |
| 33:DA:454:G:O2'   | 33:DA:455:G:H5'   | 1.93                     | 0.69              |
| 33:DA:579:A:C5    | 33:DA:580:C:C5    | 2.81                     | 0.69              |
| 33:DA:1317:C:N4   | 46:DN:58:ARG:HH21 | 1.91                     | 0.69              |
| 33:DA:1362:A:N3   | 33:DA:1362:A:H2'  | 2.07                     | 0.69              |
| 33:DA:1381:U:H3'  | 33:DA:1381:U:O2   | 1.93                     | 0.69              |
| 37:DE:87:VAL:HG22 | 37:DE:88:HIS:H    | 1.57                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:A3:7:ARG:HA      | 4:A3:10:ALA:HB3    | 1.75                     | 0.68              |
| 8:AB:904:G:H2'     | 8:AB:905:A:C8      | 2.29                     | 0.68              |
| 8:AB:985:C:H2'     | 8:AB:986:C:H6      | 1.58                     | 0.68              |
| 8:AB:1432:G:H2'    | 8:AB:1433:A:C8     | 2.28                     | 0.68              |
| 8:AB:1764:C:H3'    | 8:AB:1764:C:H6     | 1.58                     | 0.68              |
| 8:AB:1800:C:N3     | 8:AB:1818:U:O2     | 2.27                     | 0.68              |
| 8:AB:1802:A:C5     | 8:AB:1817:G:N2     | 2.60                     | 0.68              |
| 8:AB:2667:C:H1'    | 13:AG:108:PHE:HD1  | 1.57                     | 0.68              |
| 10:AD:138:LEU:H    | 10:AD:138:LEU:CD2  | 2.03                     | 0.68              |
| 11:AE:27:LEU:CD1   | 11:AE:31:VAL:HG21  | 2.24                     | 0.68              |
| 12:AF:157:THR:HG21 | 12:AF:168:LEU:HD13 | 1.74                     | 0.68              |
| 13:AG:162:ARG:HH22 | 13:AG:168:VAL:HG11 | 1.57                     | 0.68              |
| 23:AQ:26:ALA:HA    | 23:AQ:29:ARG:CB    | 2.23                     | 0.68              |
| 31:AY:50:VAL:O     | 31:AY:53:MET:HG2   | 1.93                     | 0.68              |
| 33:BA:350:G:H2'    | 33:BA:351:G:H5'    | 1.75                     | 0.68              |
| 33:BA:626:G:H2'    | 33:BA:627:G:C8     | 2.28                     | 0.68              |
| 33:BA:731:G:H5''   | 33:BA:731:G:H8     | 1.56                     | 0.68              |
| 34:BB:66:ILE:H     | 34:BB:88:GLN:HB3   | 1.57                     | 0.68              |
| 36:BD:143:SER:HB3  | 36:BD:177:MET:O    | 1.93                     | 0.68              |
| 8:CB:103:A:N7      | 8:CB:104:A:C4      | 2.62                     | 0.68              |
| 8:CB:269:C:H2'     | 8:CB:270:A:C8      | 2.28                     | 0.68              |
| 8:CB:402:A:C2'     | 8:CB:403:U:H5'     | 2.24                     | 0.68              |
| 8:CB:483:A:H1'     | 27:CU:43:LYS:HB3   | 1.75                     | 0.68              |
| 8:CB:839:U:H2'     | 8:CB:840:C:C6      | 2.28                     | 0.68              |
| 8:CB:850:U:O3'     | 31:CY:22:THR:HG22  | 1.93                     | 0.68              |
| 8:CB:1024:G:C6     | 8:CB:1025:G:C6     | 2.80                     | 0.68              |
| 8:CB:1216:G:H2'    | 8:CB:1217:U:H5'    | 1.75                     | 0.68              |
| 8:CB:1307:A:O5'    | 8:CB:1307:A:H8     | 1.76                     | 0.68              |
| 8:CB:1309:G:H5''   | 8:CB:1309:G:H8     | 1.56                     | 0.68              |
| 8:CB:1802:A:C5     | 8:CB:1817:G:N2     | 2.61                     | 0.68              |
| 8:CB:2736:A:N1     | 8:CB:2769:U:C2     | 2.59                     | 0.68              |
| 10:CD:130:GLN:CB   | 10:CD:140:HIS:HA   | 2.22                     | 0.68              |
| 10:CD:148:GLN:HB2  | 10:CD:151:THR:OG1  | 1.92                     | 0.68              |
| 14:CH:4:ILE:HG12   | 14:CH:4:ILE:O      | 1.91                     | 0.68              |
| 20:CN:4:ARG:C      | 20:CN:4:ARG:NE     | 2.46                     | 0.68              |
| 36:DD:84:ASN:ND2   | 36:DD:87:GLU:H     | 1.90                     | 0.68              |
| 44:DL:109:ARG:NH2  | 44:DL:112:ALA:H    | 1.91                     | 0.68              |
| 8:AB:402:A:C2'     | 8:AB:403:U:H5'     | 2.23                     | 0.68              |
| 8:AB:654:A:C2'     | 8:AB:655:A:H5''    | 2.20                     | 0.68              |
| 8:AB:748:G:C8      | 8:AB:750:A:N7      | 2.61                     | 0.68              |
| 8:AB:756:A:H8      | 8:AB:756:A:C5'     | 2.04                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1010:A:C8     | 8:AB:1010:A:H3'    | 2.29                     | 0.68              |
| 8:AB:1617:C:O2     | 8:AB:1617:C:C2'    | 2.41                     | 0.68              |
| 8:AB:2095:A:C2     | 8:AB:2096:C:H1'    | 2.29                     | 0.68              |
| 8:AB:2377:A:N3     | 21:AO:92:PHE:HZ    | 1.90                     | 0.68              |
| 8:AB:2547:A:C2     | 8:AB:2548:U:C4     | 2.82                     | 0.68              |
| 8:AB:2821:A:H5''   | 10:AD:167:ASN:ND2  | 2.09                     | 0.68              |
| 9:AC:201:LEU:O     | 9:AC:201:LEU:HD23  | 1.92                     | 0.68              |
| 16:AJ:10:THR:O     | 16:AJ:11:VAL:HB    | 1.92                     | 0.68              |
| 19:AM:49:ALA:CB    | 19:AM:116:ALA:HB1  | 2.19                     | 0.68              |
| 19:AM:103:TYR:HE2  | 19:AM:113:ALA:HB2  | 1.58                     | 0.68              |
| 21:AO:1:MET:HA     | 21:AO:97:PHE:CE1   | 2.27                     | 0.68              |
| 24:AR:41:ILE:O     | 24:AR:54:VAL:HA    | 1.93                     | 0.68              |
| 26:AT:96:VAL:HG22  | 26:AT:97:GLY:H     | 1.58                     | 0.68              |
| 33:BA:1247:U:H3    | 33:BA:1290:G:H1    | 1.40                     | 0.68              |
| 34:BB:22:TRP:CD1   | 34:BB:23:ASN:N     | 2.61                     | 0.68              |
| 44:BL:35:ARG:HH22  | 44:BL:75:GLU:HG2   | 1.59                     | 0.68              |
| 7:CA:51:G:H2'      | 7:CA:52:A:H5''     | 1.75                     | 0.68              |
| 8:CB:96:C:H5'      | 30:CX:41:HIS:HB2   | 1.75                     | 0.68              |
| 8:CB:398:C:O5'     | 32:CZ:49:ARG:CZ    | 2.40                     | 0.68              |
| 8:CB:612:G:C6      | 8:CB:614:A:N7      | 2.61                     | 0.68              |
| 8:CB:1785:A:O2'    | 8:CB:1786:A:H5'    | 1.92                     | 0.68              |
| 8:CB:2006:C:O2'    | 8:CB:2823:A:H1'    | 1.93                     | 0.68              |
| 8:CB:2234:G:H2'    | 8:CB:2235:G:H8     | 1.58                     | 0.68              |
| 8:CB:2359:C:H1'    | 8:CB:2360:G:H5'    | 1.73                     | 0.68              |
| 8:CB:2380:C:H2'    | 8:CB:2381:A:H8     | 1.58                     | 0.68              |
| 8:CB:2478:A:C8     | 8:CB:2478:A:C5'    | 2.76                     | 0.68              |
| 9:CC:114:GLN:C     | 9:CC:115:ILE:HD12  | 2.13                     | 0.68              |
| 9:CC:254:LYS:H     | 9:CC:254:LYS:HZ1   | 1.41                     | 0.68              |
| 11:CE:109:LEU:HD22 | 11:CE:113:VAL:O    | 1.92                     | 0.68              |
| 11:CE:139:LYS:N    | 11:CE:143:LEU:HD11 | 2.08                     | 0.68              |
| 12:CF:18:GLU:O     | 12:CF:19:PHE:HB2   | 1.92                     | 0.68              |
| 12:CF:157:THR:HG22 | 12:CF:158:THR:H    | 1.57                     | 0.68              |
| 15:CI:136:GLY:O    | 15:CI:137:LEU:HD23 | 1.93                     | 0.68              |
| 17:CK:59:LYS:HD2   | 17:CK:89:ASN:O     | 1.93                     | 0.68              |
| 18:CL:14:LYS:HZ3   | 18:CL:15:ALA:N     | 1.90                     | 0.68              |
| 21:CO:48:LEU:H     | 21:CO:48:LEU:CD2   | 2.02                     | 0.68              |
| 23:CQ:64:ILE:HG12  | 23:CQ:95:ALA:HB1   | 1.73                     | 0.68              |
| 24:CR:76:LYS:O     | 24:CR:77:PHE:CD2   | 2.47                     | 0.68              |
| 30:CX:42:LEU:O     | 30:CX:43:LEU:HD23  | 1.94                     | 0.68              |
| 33:DA:720:C:O4'    | 50:DR:38:ILE:HD11  | 1.93                     | 0.68              |
| 44:DL:81:ILE:HG23  | 44:DL:94:TYR:HB3   | 1.75                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:A4:15:LYS:HD3    | 5:A4:26:ILE:HG12   | 1.76                     | 0.68              |
| 8:AB:18:U:O3'      | 23:AQ:22:GLY:HA2   | 1.93                     | 0.68              |
| 8:AB:948:C:O4'     | 8:AB:984:A:H2      | 1.74                     | 0.68              |
| 8:AB:1271:G:OP2    | 55:AB:4460:HOH:O   | 2.11                     | 0.68              |
| 8:AB:1568:G:H5''   | 9:AC:60:ALA:CB     | 2.23                     | 0.68              |
| 8:AB:1975:G:H2'    | 8:AB:1976:U:H6     | 1.58                     | 0.68              |
| 8:AB:2241:A:N1     | 8:AB:2242:G:C5     | 2.61                     | 0.68              |
| 8:AB:2255:G:H2'    | 8:AB:2256:G:C8     | 2.26                     | 0.68              |
| 8:AB:2455:G:H2'    | 8:AB:2456:C:C5     | 2.28                     | 0.68              |
| 8:AB:2752:C:H3'    | 8:AB:2753:A:H8     | 1.59                     | 0.68              |
| 11:AE:148:ILE:HD12 | 11:AE:149:ILE:N    | 2.07                     | 0.68              |
| 11:AE:170:ARG:NH2  | 11:AE:176:ASP:HB2  | 2.08                     | 0.68              |
| 18:AL:79:LEU:C     | 18:AL:113:ALA:HB3  | 2.14                     | 0.68              |
| 24:AR:34:GLU:HA    | 24:AR:64:VAL:CG2   | 2.23                     | 0.68              |
| 33:BA:317:U:H2'    | 33:BA:318:G:H8     | 1.56                     | 0.68              |
| 33:BA:1005:A:C8    | 33:BA:1006:G:C8    | 2.80                     | 0.68              |
| 33:BA:1113:C:H2'   | 33:BA:1114:C:C6    | 2.28                     | 0.68              |
| 37:BE:76:ASN:O     | 37:BE:78:GLY:N     | 2.26                     | 0.68              |
| 8:CB:874:G:N3      | 8:CB:875:G:H1'     | 2.08                     | 0.68              |
| 8:CB:1136:G:H8     | 8:CB:1136:G:H5'    | 1.57                     | 0.68              |
| 8:CB:1984:G:C6     | 8:CB:1985:C:C5     | 2.81                     | 0.68              |
| 8:CB:2032:G:H21    | 10:CD:150:GLN:HB3  | 1.57                     | 0.68              |
| 8:CB:2396:G:H5''   | 8:CB:2396:G:C8     | 2.28                     | 0.68              |
| 9:CC:140:VAL:O     | 9:CC:193:GLU:HB2   | 1.94                     | 0.68              |
| 12:CF:151:LEU:HG   | 12:CF:153:ILE:HG13 | 1.74                     | 0.68              |
| 23:CQ:82:LEU:O     | 23:CQ:88:GLU:HG3   | 1.93                     | 0.68              |
| 27:CU:39:ASN:CB    | 27:CU:59:GLU:HB2   | 2.23                     | 0.68              |
| 29:CW:23:LYS:HB2   | 29:CW:23:LYS:NZ    | 2.06                     | 0.68              |
| 29:CW:66:VAL:HG22  | 29:CW:67:LYS:N     | 2.08                     | 0.68              |
| 30:CX:18:LEU:HA    | 30:CX:22:LEU:HB2   | 1.73                     | 0.68              |
| 33:DA:28:A:H2'     | 33:DA:29:U:O4'     | 1.94                     | 0.68              |
| 33:DA:490:C:H2'    | 33:DA:491:G:C8     | 2.28                     | 0.68              |
| 33:DA:494:G:O2'    | 33:DA:496:A:H8     | 1.72                     | 0.68              |
| 33:DA:1287:A:N3    | 33:DA:1353:G:H1'   | 2.08                     | 0.68              |
| 33:DA:1320:C:OP1   | 51:DS:69:LYS:HG3   | 1.92                     | 0.68              |
| 34:DB:209:VAL:HG23 | 34:DB:210:THR:N    | 2.08                     | 0.68              |
| 39:DG:27:ASN:HA    | 39:DG:30:MET:HB2   | 1.75                     | 0.68              |
| 39:DG:100:MET:O    | 39:DG:104:VAL:HG23 | 1.93                     | 0.68              |
| 43:DK:18:GLY:HA2   | 43:DK:36:ARG:H     | 1.57                     | 0.68              |
| 8:AB:86:G:N2       | 8:AB:97:C:C2       | 2.61                     | 0.68              |
| 8:AB:666:A:O2'     | 8:AB:667:U:H5''    | 1.93                     | 0.68              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:985:C:O2'    | 8:AB:986:C:H5''   | 1.94                     | 0.68              |
| 8:AB:2561:U:O3'   | 17:AK:40:LYS:HE2  | 1.94                     | 0.68              |
| 8:AB:2683:C:H6    | 8:AB:2683:C:H5''  | 1.59                     | 0.68              |
| 8:AB:2768:U:C4    | 8:AB:2769:U:C5    | 2.81                     | 0.68              |
| 8:AB:2850:A:C4    | 8:AB:2851:A:C8    | 2.81                     | 0.68              |
| 9:AC:220:ARG:NE   | 9:AC:220:ARG:CA   | 2.55                     | 0.68              |
| 15:AI:9:LYS:HB3   | 15:AI:57:VAL:HG22 | 1.75                     | 0.68              |
| 19:AM:61:GLY:O    | 19:AM:104:GLU:HB2 | 1.94                     | 0.68              |
| 25:AS:84:ARG:HH22 | 25:AS:98:LYS:HE3  | 1.57                     | 0.68              |
| 26:AT:5:GLU:HG3   | 26:AT:6:ARG:H     | 1.57                     | 0.68              |
| 29:AW:66:VAL:HG22 | 29:AW:67:LYS:H    | 1.57                     | 0.68              |
| 33:BA:100:G:C8    | 55:BA:5031:HOH:O  | 2.45                     | 0.68              |
| 33:BA:143:A:H8    | 33:BA:143:A:O5'   | 1.77                     | 0.68              |
| 33:BA:490:C:H2'   | 33:BA:491:G:O4'   | 1.94                     | 0.68              |
| 33:BA:690:G:H2'   | 33:BA:691:G:O4'   | 1.93                     | 0.68              |
| 33:BA:751:U:H2'   | 33:BA:752:G:O4'   | 1.93                     | 0.68              |
| 33:BA:1055:A:H4'  | 35:BC:160:GLU:HG2 | 1.74                     | 0.68              |
| 33:BA:1451:U:H2'  | 33:BA:1451:U:O2   | 1.94                     | 0.68              |
| 34:BB:45:THR:HG22 | 34:BB:49:PHE:CE1  | 2.29                     | 0.68              |
| 43:BK:51:PHE:CZ   | 43:BK:61:ALA:HB1  | 2.29                     | 0.68              |
| 1:C0:52:LYS:HD3   | 1:C0:52:LYS:O     | 1.93                     | 0.68              |
| 8:CB:104:A:H3'    | 8:CB:104:A:H8     | 1.58                     | 0.68              |
| 8:CB:201:C:C5     | 8:CB:202:U:H5     | 2.09                     | 0.68              |
| 8:CB:298:G:H5''   | 8:CB:299:A:OP1    | 1.93                     | 0.68              |
| 8:CB:653:U:H4'    | 8:CB:653:U:OP1    | 1.92                     | 0.68              |
| 8:CB:682:G:N2     | 8:CB:683:U:C2     | 2.62                     | 0.68              |
| 8:CB:799:G:C6     | 8:CB:800:A:C6     | 2.82                     | 0.68              |
| 8:CB:838:C:C2     | 8:CB:941:A:C6     | 2.82                     | 0.68              |
| 8:CB:1270:C:H4'   | 8:CB:1271:G:O5'   | 1.92                     | 0.68              |
| 8:CB:1361:G:C6    | 8:CB:1362:C:N4    | 2.61                     | 0.68              |
| 8:CB:1413:A:H8    | 8:CB:1413:A:O5'   | 1.77                     | 0.68              |
| 8:CB:1710:G:H2'   | 8:CB:1711:A:H8    | 1.58                     | 0.68              |
| 8:CB:1809:A:C2'   | 8:CB:1810:A:C8    | 2.74                     | 0.68              |
| 8:CB:2333:A:H4'   | 8:CB:2334:U:C5'   | 2.24                     | 0.68              |
| 8:CB:2358:A:H5'   | 8:CB:2358:A:C8    | 2.29                     | 0.68              |
| 8:CB:2544:G:H2'   | 8:CB:2545:G:H8    | 1.58                     | 0.68              |
| 8:CB:2574:G:H2'   | 8:CB:2575:C:H6    | 1.57                     | 0.68              |
| 8:CB:2679:A:C2    | 8:CB:2680:U:C4    | 2.81                     | 0.68              |
| 8:CB:2821:A:H2'   | 8:CB:2822:G:O4'   | 1.93                     | 0.68              |
| 9:CC:58:LYS:HB2   | 9:CC:58:LYS:HZ2   | 1.58                     | 0.68              |
| 9:CC:152:GLN:OE1  | 9:CC:153:LEU:HB3  | 1.93                     | 0.68              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:CD:22:ILE:HG23 | 10:CD:22:ILE:O    | 1.94                     | 0.68              |
| 10:CD:77:ARG:HH22 | 10:CD:79:LEU:HB2  | 1.58                     | 0.68              |
| 11:CE:163:ASN:N   | 11:CE:163:ASN:OD1 | 2.27                     | 0.68              |
| 20:CN:103:ARG:H   | 20:CN:108:ALA:H   | 1.41                     | 0.68              |
| 21:CO:26:LEU:O    | 21:CO:27:VAL:HG13 | 1.93                     | 0.68              |
| 23:CQ:13:HIS:CE1  | 23:CQ:31:TYR:CD1  | 2.81                     | 0.68              |
| 30:CX:18:LEU:HA   | 30:CX:22:LEU:CG   | 2.23                     | 0.68              |
| 33:DA:502:A:H2'   | 33:DA:503:C:H6    | 1.56                     | 0.68              |
| 33:DA:511:C:O2'   | 33:DA:512:U:H5''  | 1.94                     | 0.68              |
| 36:DD:33:ILE:HG12 | 36:DD:34:GLU:H    | 1.57                     | 0.68              |
| 44:DL:100:ALA:O   | 44:DL:102:ASP:N   | 2.27                     | 0.68              |
| 47:DO:10:ILE:HA   | 47:DO:13:GLU:HB2  | 1.75                     | 0.68              |
| 1:A0:30:ASP:OD2   | 1:A0:31:LYS:HG3   | 1.94                     | 0.68              |
| 2:A1:46:VAL:HG22  | 2:A1:47:ILE:HG13  | 1.75                     | 0.68              |
| 8:AB:1307:A:H8    | 8:AB:1307:A:O5'   | 1.76                     | 0.68              |
| 8:AB:1643:G:N2    | 8:AB:1644:C:H1'   | 2.08                     | 0.68              |
| 8:AB:1663:G:HO2'  | 8:AB:1664:A:H8    | 1.41                     | 0.68              |
| 8:AB:1675:C:C5    | 8:AB:1676:A:N7    | 2.61                     | 0.68              |
| 8:AB:1771:C:C2    | 8:AB:1772:A:C8    | 2.82                     | 0.68              |
| 8:AB:2017:U:H5''  | 8:AB:2018:G:P     | 2.34                     | 0.68              |
| 8:AB:2682:A:C2    | 8:AB:2683:C:N3    | 2.61                     | 0.68              |
| 11:AE:3:LEU:HD13  | 11:AE:119:ILE:CD1 | 2.24                     | 0.68              |
| 13:AG:33:THR:HG22 | 13:AG:34:ARG:H    | 1.57                     | 0.68              |
| 29:AW:44:PHE:CE2  | 29:AW:80:SER:HA   | 2.27                     | 0.68              |
| 32:AZ:9:TYR:CB    | 32:AZ:28:VAL:HG22 | 2.24                     | 0.68              |
| 33:BA:677:U:O2'   | 33:BA:678:U:H5'   | 1.93                     | 0.68              |
| 33:BA:779:C:N4    | 33:BA:780:A:C2    | 2.62                     | 0.68              |
| 33:BA:1206:G:H4'  | 35:BC:192:TYR:HA  | 1.75                     | 0.68              |
| 44:BL:33:CYS:HA   | 44:BL:54:VAL:HG12 | 1.74                     | 0.68              |
| 1:C0:39:ARG:HD3   | 8:CB:2816:G:H5'   | 1.74                     | 0.68              |
| 7:CA:7:G:OP1      | 21:CO:3:LYS:NZ    | 2.26                     | 0.68              |
| 7:CA:32:U:H2'     | 7:CA:33:G:C8      | 2.29                     | 0.68              |
| 8:CB:99:U:O2'     | 8:CB:100:U:H5''   | 1.92                     | 0.68              |
| 8:CB:736:C:C2     | 8:CB:737:C:C5     | 2.82                     | 0.68              |
| 8:CB:796:C:H3'    | 8:CB:796:C:C6     | 2.28                     | 0.68              |
| 8:CB:867:C:N3     | 8:CB:868:U:C5     | 2.62                     | 0.68              |
| 8:CB:906:U:H2'    | 8:CB:907:G:O5'    | 1.93                     | 0.68              |
| 8:CB:1190:G:H8    | 8:CB:1190:G:O5'   | 1.77                     | 0.68              |
| 8:CB:1352:U:H1'   | 8:CB:1570:A:H2    | 1.58                     | 0.68              |
| 8:CB:2051:A:C6    | 8:CB:2614:A:C5    | 2.82                     | 0.68              |
| 9:CC:42:ARG:CG    | 9:CC:43:ASN:H     | 1.99                     | 0.68              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:CC:253:GLY:HA2   | 9:CC:254:LYS:HZ1  | 1.57                     | 0.68              |
| 12:CF:46:LYS:C     | 12:CF:48:LEU:H    | 1.97                     | 0.68              |
| 16:CJ:33:ALA:HA    | 16:CJ:36:LEU:HB2  | 1.74                     | 0.68              |
| 16:CJ:116:ARG:HG2  | 16:CJ:116:ARG:NH1 | 2.02                     | 0.68              |
| 20:CN:96:ARG:HG2   | 20:CN:98:LEU:HD21 | 1.76                     | 0.68              |
| 21:CO:38:GLN:CA    | 21:CO:50:ALA:HB3  | 2.23                     | 0.68              |
| 33:DA:254:G:C2     | 33:DA:255:G:C8    | 2.81                     | 0.68              |
| 33:DA:342:C:C2'    | 33:DA:343:U:H5'   | 2.24                     | 0.68              |
| 33:DA:797:C:H2'    | 33:DA:798:U:H6    | 1.59                     | 0.68              |
| 33:DA:1413:A:C2    | 33:DA:1414:U:H1'  | 2.28                     | 0.68              |
| 33:DA:1422:G:O2'   | 33:DA:1423:G:H5'  | 1.94                     | 0.68              |
| 33:DA:1430:A:C2'   | 33:DA:1431:A:H5'  | 2.24                     | 0.68              |
| 33:DA:1501:C:C5    | 33:DA:1504:G:C4   | 2.82                     | 0.68              |
| 39:DG:78:ARG:NH1   | 39:DG:81:GLY:H    | 1.90                     | 0.68              |
| 41:DI:85:ALA:C     | 41:DI:87:MET:H    | 1.95                     | 0.68              |
| 53:DU:39:LYS:C     | 53:DU:41:THR:N    | 2.46                     | 0.68              |
| 7:AA:66:A:N3       | 7:AA:108:A:N1     | 2.41                     | 0.68              |
| 8:AB:275:C:H2'     | 8:AB:276:U:H5'    | 1.75                     | 0.68              |
| 8:AB:381:G:H5'     | 32:AZ:13:THR:OG1  | 1.94                     | 0.68              |
| 8:AB:907:G:H1'     | 19:AM:68:PHE:CE2  | 2.29                     | 0.68              |
| 8:AB:1803:A:H2     | 8:AB:1822:C:O2    | 1.77                     | 0.68              |
| 8:AB:2318:G:O2'    | 8:AB:2319:G:H5'   | 1.93                     | 0.68              |
| 8:AB:2455:G:C2     | 8:AB:2498:C:N4    | 2.62                     | 0.68              |
| 8:AB:2588:G:C5     | 8:AB:2589:A:N7    | 2.61                     | 0.68              |
| 10:AD:52:THR:HB    | 10:AD:76:GLY:N    | 2.08                     | 0.68              |
| 13:AG:156:TYR:N    | 13:AG:170:THR:HB  | 2.08                     | 0.68              |
| 18:AL:94:THR:O     | 18:AL:96:LYS:HD3  | 1.93                     | 0.68              |
| 25:AS:73:LYS:HB2   | 25:AS:106:VAL:CG2 | 2.23                     | 0.68              |
| 25:AS:75:PHE:CE1   | 25:AS:104:THR:OG1 | 2.47                     | 0.68              |
| 33:BA:679:C:C2     | 33:BA:712:A:H2    | 2.12                     | 0.68              |
| 33:BA:878:A:C8     | 33:BA:878:A:C3'   | 2.77                     | 0.68              |
| 34:BB:22:TRP:CG    | 34:BB:23:ASN:N    | 2.61                     | 0.68              |
| 36:BD:2:ARG:HG3    | 36:BD:114:ARG:CZ  | 2.23                     | 0.68              |
| 36:BD:109:THR:HG23 | 36:BD:112:GLU:N   | 2.09                     | 0.68              |
| 5:C4:16:ILE:O      | 5:C4:17:VAL:HB    | 1.93                     | 0.68              |
| 8:CB:256:A:O2'     | 8:CB:257:C:H5'    | 1.94                     | 0.68              |
| 8:CB:534:U:H4'     | 23:CQ:45:ALA:HB2  | 1.75                     | 0.68              |
| 8:CB:1418:G:H8     | 8:CB:1418:G:O5'   | 1.77                     | 0.68              |
| 8:CB:1765:U:O2     | 8:CB:1765:U:H2'   | 1.93                     | 0.68              |
| 8:CB:2511:U:C4     | 8:CB:2512:C:C4    | 2.81                     | 0.68              |
| 8:CB:2617:U:C2'    | 8:CB:2618:G:H5'   | 2.24                     | 0.68              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:2675:A:OP1    | 17:CK:30:ARG:HA   | 1.93                     | 0.68              |
| 13:CG:140:ILE:HG22 | 13:CG:144:ALA:HB2 | 1.76                     | 0.68              |
| 14:CH:127:GLU:CD   | 14:CH:127:GLU:H   | 1.97                     | 0.68              |
| 27:CU:9:GLU:HB2    | 27:CU:71:ILE:CB   | 2.24                     | 0.68              |
| 29:CW:36:ILE:O     | 29:CW:37:VAL:HG22 | 1.93                     | 0.68              |
| 33:DA:57:G:N1      | 33:DA:356:A:C6    | 2.62                     | 0.68              |
| 33:DA:1000:A:H2'   | 33:DA:1001:C:O4'  | 1.93                     | 0.68              |
| 33:DA:1356:G:H2'   | 33:DA:1357:A:C8   | 2.28                     | 0.68              |
| 33:DA:1409:C:H3'   | 33:DA:1409:C:C6   | 2.27                     | 0.68              |
| 33:DA:1479:C:H42   | 33:DA:1480:A:N6   | 1.91                     | 0.68              |
| 35:DC:180:ASP:O    | 35:DC:203:LYS:HB2 | 1.94                     | 0.68              |
| 39:DG:8:GLN:HG3    | 39:DG:9:ARG:H     | 1.59                     | 0.68              |
| 8:AB:85:G:C5       | 8:AB:98:G:N2      | 2.61                     | 0.68              |
| 8:AB:100:U:C5'     | 27:AU:90:LYS:HD3  | 2.24                     | 0.68              |
| 8:AB:575:A:C2'     | 8:AB:576:U:H5''   | 2.24                     | 0.68              |
| 8:AB:978:G:N1      | 8:AB:986:C:C4     | 2.62                     | 0.68              |
| 8:AB:1022:G:N7     | 16:AJ:68:LYS:NZ   | 2.41                     | 0.68              |
| 8:AB:1604:C:O2'    | 8:AB:1610:A:N6    | 2.25                     | 0.68              |
| 8:AB:2511:U:O2'    | 10:AD:144:GLY:HA2 | 1.94                     | 0.68              |
| 8:AB:2597:G:OP1    | 9:AC:239:PHE:CG   | 2.47                     | 0.68              |
| 8:AB:2742:G:H22    | 8:AB:2762:C:N4    | 1.91                     | 0.68              |
| 8:AB:2757:A:C2     | 8:AB:2758:A:N7    | 2.62                     | 0.68              |
| 11:AE:27:LEU:O     | 11:AE:31:VAL:HG23 | 1.94                     | 0.68              |
| 16:AJ:41:LYS:NZ    | 16:AJ:46:PRO:HD3  | 2.09                     | 0.68              |
| 30:AX:16:THR:C     | 30:AX:18:LEU:H    | 1.95                     | 0.68              |
| 30:AX:22:LEU:HD22  | 30:AX:26:PHE:CD1  | 2.28                     | 0.68              |
| 33:BA:36:C:H5''    | 44:BL:119:LYS:HB3 | 1.75                     | 0.68              |
| 33:BA:72:A:H2'     | 33:BA:73:C:O4'    | 1.94                     | 0.68              |
| 33:BA:95:C:O2      | 33:BA:95:C:H2'    | 1.93                     | 0.68              |
| 33:BA:484:G:H5'    | 33:BA:486:U:H5'   | 1.74                     | 0.68              |
| 33:BA:518:C:H5     | 33:BA:530:G:C2    | 2.11                     | 0.68              |
| 33:BA:565:U:C6     | 33:BA:566:G:C8    | 2.81                     | 0.68              |
| 33:BA:1438:G:C4    | 33:BA:1439:G:C8   | 2.82                     | 0.68              |
| 33:BA:1502:A:H8    | 33:BA:1505:G:H22  | 1.42                     | 0.68              |
| 35:BC:173:PRO:HB2  | 35:BC:176:THR:HB  | 1.76                     | 0.68              |
| 43:BK:28:ASN:HD21  | 43:BK:46:ALA:HB3  | 1.59                     | 0.68              |
| 7:CA:17:C:H2'      | 7:CA:18:G:H8      | 1.59                     | 0.68              |
| 8:CB:46:G:C2       | 8:CB:47:C:C5      | 2.82                     | 0.68              |
| 8:CB:85:G:H5''     | 8:CB:85:G:C8      | 2.29                     | 0.68              |
| 8:CB:95:A:O3'      | 30:CX:41:HIS:HA   | 1.93                     | 0.68              |
| 8:CB:440:C:H3'     | 8:CB:440:C:C6     | 2.29                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:901:C:H2'     | 8:CB:902:C:H6      | 1.59                     | 0.68              |
| 8:CB:1430:G:O2'    | 8:CB:1431:A:H5'    | 1.94                     | 0.68              |
| 8:CB:1568:G:OP1    | 9:CC:61:TYR:HB2    | 1.93                     | 0.68              |
| 8:CB:2425:A:O4'    | 8:CB:2427:C:C5     | 2.47                     | 0.68              |
| 8:CB:2539:C:C5     | 8:CB:2540:C:C5     | 2.82                     | 0.68              |
| 9:CC:115:ILE:HG22  | 9:CC:127:ASN:OD1   | 1.94                     | 0.68              |
| 10:CD:138:LEU:HD11 | 10:CD:142:VAL:HG11 | 1.74                     | 0.68              |
| 11:CE:84:THR:HG23  | 11:CE:85:PHE:H     | 1.57                     | 0.68              |
| 24:CR:47:VAL:HG22  | 24:CR:48:LYS:H     | 1.57                     | 0.68              |
| 29:CW:23:LYS:HE3   | 29:CW:24:ARG:N     | 2.05                     | 0.68              |
| 33:DA:189:A:H5''   | 33:DA:189:A:H8     | 1.58                     | 0.68              |
| 33:DA:556:C:H2'    | 33:DA:557:G:C5'    | 2.22                     | 0.68              |
| 33:DA:794:A:C6     | 33:DA:795:C:N4     | 2.61                     | 0.68              |
| 38:DF:60:VAL:HG12  | 38:DF:61:LEU:N     | 2.03                     | 0.68              |
| 8:AB:478:A:C6      | 8:AB:480:A:C6      | 2.82                     | 0.68              |
| 8:AB:528:A:C8      | 8:AB:528:A:C3'     | 2.76                     | 0.68              |
| 8:AB:1204:A:N1     | 8:AB:1241:A:N1     | 2.41                     | 0.68              |
| 8:AB:1494:A:H2'    | 8:AB:1495:A:C8     | 2.28                     | 0.68              |
| 8:AB:2380:C:H2'    | 8:AB:2381:A:H8     | 1.58                     | 0.68              |
| 10:AD:13:ARG:NE    | 10:AD:13:ARG:HA    | 2.09                     | 0.68              |
| 10:AD:31:ALA:HB3   | 10:AD:95:SER:O     | 1.94                     | 0.68              |
| 11:AE:46:GLN:CD    | 11:AE:46:GLN:N     | 2.47                     | 0.68              |
| 12:AF:33:ILE:HG13  | 12:AF:34:THR:H     | 1.59                     | 0.68              |
| 23:AQ:88:GLU:HA    | 24:AR:53:PHE:CE1   | 2.29                     | 0.68              |
| 28:AV:21:ARG:NE    | 28:AV:87:GLN:HG3   | 2.09                     | 0.68              |
| 28:AV:28:ALA:HB3   | 28:AV:40:ILE:HG12  | 1.75                     | 0.68              |
| 33:BA:350:G:H8     | 33:BA:350:G:C5'    | 2.06                     | 0.68              |
| 33:BA:539:A:O5'    | 33:BA:539:A:C8     | 2.45                     | 0.68              |
| 33:BA:1289:A:H2'   | 33:BA:1290:G:H5'   | 1.76                     | 0.68              |
| 4:C3:7:ARG:HA      | 4:C3:10:ALA:HB3    | 1.75                     | 0.68              |
| 8:CB:192:C:H2'     | 8:CB:193:U:H5'     | 1.75                     | 0.68              |
| 8:CB:235:U:H2'     | 8:CB:236:C:H6      | 1.58                     | 0.68              |
| 8:CB:237:C:O2      | 8:CB:261:G:C2      | 2.46                     | 0.68              |
| 8:CB:321:U:OP2     | 11:CE:130:LYS:HG3  | 1.93                     | 0.68              |
| 8:CB:644:A:H2      | 8:CB:646:U:O4      | 1.75                     | 0.68              |
| 8:CB:868:U:H2'     | 8:CB:868:U:O2      | 1.94                     | 0.68              |
| 8:CB:900:A:H2'     | 8:CB:901:C:C6      | 2.29                     | 0.68              |
| 8:CB:1204:A:N1     | 8:CB:1241:A:N1     | 2.41                     | 0.68              |
| 8:CB:1233:C:H2'    | 8:CB:1234:U:C6     | 2.29                     | 0.68              |
| 8:CB:1381:G:O2'    | 8:CB:1382:G:H5'    | 1.94                     | 0.68              |
| 8:CB:2258:C:C5'    | 8:CB:2258:C:H6     | 2.06                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:CD:110:THR:HB   | 10:CD:202:ILE:HB   | 1.75                     | 0.68              |
| 11:CE:181:ILE:O    | 11:CE:181:ILE:HG22 | 1.93                     | 0.68              |
| 14:CH:27:ARG:H     | 14:CH:31:VAL:HG23  | 1.58                     | 0.68              |
| 23:CQ:109:VAL:HG12 | 23:CQ:113:LYS:NZ   | 2.08                     | 0.68              |
| 24:CR:64:VAL:HG23  | 24:CR:100:GLY:CA   | 2.23                     | 0.68              |
| 33:DA:244:U:C5     | 33:DA:894:G:C2     | 2.82                     | 0.68              |
| 33:DA:522:C:N4     | 33:DA:528:C:H42    | 1.92                     | 0.68              |
| 33:DA:599:C:O2'    | 33:DA:600:A:H5'    | 1.94                     | 0.68              |
| 33:DA:718:A:C6     | 33:DA:719:C:O2     | 2.47                     | 0.68              |
| 33:DA:728:A:C6     | 33:DA:729:A:N6     | 2.62                     | 0.68              |
| 33:DA:892:A:O2'    | 33:DA:893:C:H5''   | 1.94                     | 0.68              |
| 33:DA:1032:G:N2    | 33:DA:1033:G:H1'   | 2.08                     | 0.68              |
| 33:DA:1157:A:N6    | 33:DA:1177:G:H22   | 1.92                     | 0.68              |
| 33:DA:1492:A:N3    | 33:DA:1493:A:H4'   | 2.09                     | 0.68              |
| 35:DC:7:ASN:OD1    | 35:DC:15:LYS:HE3   | 1.92                     | 0.68              |
| 35:DC:50:SER:HB3   | 35:DC:114:LEU:CD1  | 2.24                     | 0.68              |
| 40:DH:34:ALA:O     | 40:DH:38:VAL:HG12  | 1.94                     | 0.68              |
| 40:DH:38:VAL:O     | 40:DH:38:VAL:HG22  | 1.94                     | 0.68              |
| 41:DI:56:MET:HG3   | 41:DI:57:VAL:N     | 2.09                     | 0.68              |
| 6:A5:146:ALA:HB1   | 6:A5:151:GLN:HG2   | 1.75                     | 0.68              |
| 7:AA:10:G:O2'      | 7:AA:11:C:H5'      | 1.94                     | 0.68              |
| 7:AA:32:U:H2'      | 7:AA:33:G:C8       | 2.18                     | 0.68              |
| 8:AB:84:A:OP1      | 27:AU:2:ALA:HB2    | 1.94                     | 0.68              |
| 8:AB:445:C:H1'     | 11:AE:47:LYS:NZ    | 2.09                     | 0.68              |
| 8:AB:550:C:O2      | 8:AB:550:C:H2'     | 1.94                     | 0.68              |
| 8:AB:1430:G:O2'    | 8:AB:1431:A:H5'    | 1.93                     | 0.68              |
| 8:AB:1528:A:C4     | 8:AB:1544:A:C6     | 2.82                     | 0.68              |
| 8:AB:2856:A:H8     | 8:AB:2856:A:H5'    | 1.58                     | 0.68              |
| 8:AB:2880:C:C6     | 20:AN:91:ALA:HB3   | 2.29                     | 0.68              |
| 9:AC:87:SER:O      | 9:AC:155:ARG:NH1   | 2.27                     | 0.68              |
| 10:AD:110:THR:HB   | 10:AD:202:ILE:HB   | 1.76                     | 0.68              |
| 22:AP:25:VAL:HG12  | 22:AP:27:VAL:HG12  | 1.75                     | 0.68              |
| 28:AV:36:ALA:CB    | 28:AV:37:PRO:HD2   | 2.21                     | 0.68              |
| 33:BA:28:A:H2'     | 33:BA:29:U:O4'     | 1.94                     | 0.68              |
| 33:BA:50:A:H62     | 33:BA:361:G:C4'    | 2.07                     | 0.68              |
| 33:BA:513:C:N3     | 33:BA:539:A:C2     | 2.61                     | 0.68              |
| 33:BA:587:G:N3     | 33:BA:755:G:C2     | 2.61                     | 0.68              |
| 33:BA:795:C:H4'    | 33:BA:1506:U:N3    | 2.09                     | 0.68              |
| 33:BA:1253:G:H5'   | 33:BA:1253:G:C8    | 2.29                     | 0.68              |
| 33:BA:1472:U:H2'   | 33:BA:1473:G:H8    | 1.57                     | 0.68              |
| 36:BD:56:GLU:HA    | 36:BD:59:LYS:HB2   | 1.76                     | 0.68              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BE:96:GLN:HB3  | 37:BE:123:LEU:HD11 | 1.76                     | 0.68              |
| 40:BH:12:ARG:HB2  | 40:BH:26:MET:HE1   | 1.74                     | 0.68              |
| 4:C3:2:LYS:HE2    | 4:C3:2:LYS:O       | 1.94                     | 0.68              |
| 5:C4:3:VAL:HG12   | 5:C4:5:ALA:N       | 2.09                     | 0.68              |
| 7:CA:10:G:O2'     | 7:CA:11:C:H5'      | 1.93                     | 0.68              |
| 7:CA:14:U:O2'     | 7:CA:107:G:H1'     | 1.94                     | 0.68              |
| 8:CB:993:G:C2     | 8:CB:1162:G:C2     | 2.82                     | 0.68              |
| 8:CB:2056:G:OP2   | 55:CB:5373:HOH:O   | 2.11                     | 0.68              |
| 8:CB:2096:C:H5'   | 8:CB:2097:A:OP2    | 1.93                     | 0.68              |
| 9:CC:82:TYR:HD1   | 9:CC:83:ASP:H      | 1.42                     | 0.68              |
| 14:CH:18:GLN:O    | 14:CH:19:VAL:HB    | 1.93                     | 0.68              |
| 19:CM:31:PHE:HA   | 19:CM:128:THR:O    | 1.93                     | 0.68              |
| 21:CO:30:ARG:HH22 | 21:CO:97:PHE:HB2   | 1.58                     | 0.68              |
| 33:DA:95:C:H2'    | 33:DA:95:C:O2      | 1.93                     | 0.68              |
| 33:DA:451:A:H1'   | 33:DA:452:A:N7     | 2.08                     | 0.68              |
| 33:DA:725:G:C5    | 33:DA:726:C:C5     | 2.81                     | 0.68              |
| 33:DA:878:A:C8    | 33:DA:878:A:C3'    | 2.77                     | 0.68              |
| 33:DA:889:A:C5'   | 33:DA:891:U:H1'    | 2.24                     | 0.68              |
| 34:DB:80:LYS:HA   | 34:DB:90:PHE:CZ    | 2.28                     | 0.68              |
| 34:DB:187:ASP:OD1 | 34:DB:203:ASP:HB3  | 1.94                     | 0.68              |
| 37:DE:81:GLN:O    | 37:DE:82:HIS:HB3   | 1.93                     | 0.68              |
| 40:DH:29:SER:O    | 40:DH:33:VAL:HG23  | 1.94                     | 0.68              |
| 8:AB:79:C:H2'     | 8:AB:346:A:H8      | 1.58                     | 0.68              |
| 8:AB:350:G:C2     | 8:AB:351:C:O2      | 2.48                     | 0.68              |
| 8:AB:445:C:OP1    | 23:AQ:1:ALA:HB1    | 1.94                     | 0.68              |
| 8:AB:547:A:H5''   | 8:AB:548:G:C8      | 2.29                     | 0.68              |
| 8:AB:945:A:H5'    | 8:AB:946:C:OP2     | 1.94                     | 0.68              |
| 8:AB:1053:C:C4    | 8:AB:1107:G:N1     | 2.62                     | 0.68              |
| 8:AB:1257:C:N3    | 8:AB:1258:U:N3     | 2.42                     | 0.68              |
| 8:AB:1995:U:OP1   | 10:AD:129:THR:HG21 | 1.94                     | 0.68              |
| 8:AB:2023:C:O2'   | 8:AB:2618:G:H5''   | 1.94                     | 0.68              |
| 8:AB:2574:G:H2'   | 8:AB:2575:C:H6     | 1.59                     | 0.68              |
| 8:AB:2756:U:C4    | 8:AB:2759:G:O6     | 2.47                     | 0.68              |
| 12:AF:102:LEU:O   | 12:AF:107:VAL:HG23 | 1.94                     | 0.68              |
| 18:AL:40:SER:HA   | 18:AL:41:ARG:NH2   | 2.08                     | 0.68              |
| 19:AM:73:ILE:HG22 | 19:AM:74:THR:H     | 1.59                     | 0.68              |
| 23:AQ:13:HIS:HE1  | 23:AQ:31:TYR:CD2   | 2.12                     | 0.68              |
| 24:AR:20:VAL:O    | 24:AR:21:ARG:HG2   | 1.94                     | 0.68              |
| 26:AT:76:ARG:HH11 | 26:AT:76:ARG:CB    | 2.03                     | 0.68              |
| 28:AV:63:ILE:N    | 28:AV:70:ILE:HD11  | 2.09                     | 0.68              |
| 33:BA:559:A:H4'   | 33:BA:560:A:C5'    | 2.24                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:675:A:C5     | 33:BA:676:A:N7     | 2.62                     | 0.68              |
| 35:BC:15:LYS:HD2   | 35:BC:16:PRO:CD    | 2.23                     | 0.68              |
| 35:BC:149:LYS:HB3  | 35:BC:200:TRP:HB2  | 1.75                     | 0.68              |
| 47:BO:2:LEU:HD23   | 47:BO:3:SER:H      | 1.59                     | 0.68              |
| 8:CB:219:A:C6      | 8:CB:220:G:C6      | 2.82                     | 0.68              |
| 8:CB:390:U:H4'     | 8:CB:391:A:C5'     | 2.23                     | 0.68              |
| 8:CB:687:C:N4      | 8:CB:688:U:H3      | 1.91                     | 0.68              |
| 8:CB:1248:G:P      | 11:CE:44:ARG:HH12  | 2.16                     | 0.68              |
| 8:CB:1771:C:C2     | 8:CB:1772:A:N7     | 2.61                     | 0.68              |
| 8:CB:2358:A:H61    | 8:CB:2428:G:N2     | 1.90                     | 0.68              |
| 8:CB:2505:G:O2'    | 8:CB:2506:U:H5'    | 1.94                     | 0.68              |
| 9:CC:140:VAL:HG23  | 9:CC:161:VAL:HB    | 1.75                     | 0.68              |
| 9:CC:220:ARG:NE    | 9:CC:220:ARG:CA    | 2.50                     | 0.68              |
| 9:CC:220:ARG:HG3   | 9:CC:220:ARG:NH1   | 2.09                     | 0.68              |
| 9:CC:268:ARG:O     | 9:CC:269:ARG:HD2   | 1.94                     | 0.68              |
| 14:CH:3:VAL:HB     | 14:CH:37:VAL:CG1   | 2.18                     | 0.68              |
| 18:CL:92:LEU:HA    | 18:CL:96:LYS:CG    | 2.24                     | 0.68              |
| 19:CM:105:MET:CG   | 19:CM:106:ASP:H    | 1.97                     | 0.68              |
| 19:CM:124:LEU:N    | 19:CM:124:LEU:HD23 | 2.09                     | 0.68              |
| 26:CT:10:VAL:O     | 26:CT:34:VAL:HG13  | 1.94                     | 0.68              |
| 33:DA:50:A:N6      | 33:DA:361:G:C4'    | 2.57                     | 0.68              |
| 33:DA:357:G:C2     | 33:DA:358:U:C5     | 2.82                     | 0.68              |
| 33:DA:475:C:H2'    | 33:DA:476:U:C6     | 2.25                     | 0.68              |
| 33:DA:600:A:H2'    | 33:DA:601:G:O4'    | 1.94                     | 0.68              |
| 1:A0:5:ASN:HD22    | 8:AB:2019:A:H62    | 1.41                     | 0.67              |
| 3:A2:34:ARG:O      | 3:A2:35:ARG:C      | 2.33                     | 0.67              |
| 8:AB:101:A:C8      | 8:AB:101:A:H3'     | 2.29                     | 0.67              |
| 8:AB:663:G:OP1     | 18:AL:25:SER:HB3   | 1.93                     | 0.67              |
| 8:AB:948:C:H1'     | 8:AB:984:A:N3      | 2.09                     | 0.67              |
| 8:AB:1354:A:C2     | 8:AB:1355:G:H1'    | 2.30                     | 0.67              |
| 8:AB:1517:G:O2'    | 8:AB:1518:C:H5'    | 1.94                     | 0.67              |
| 8:AB:1812:U:O2'    | 9:AC:45:ASN:HB2    | 1.92                     | 0.67              |
| 8:AB:1952:A:H5''   | 8:AB:1953:A:OP2    | 1.93                     | 0.67              |
| 8:AB:2053:G:P      | 10:AD:149:ASN:HA   | 2.34                     | 0.67              |
| 8:AB:2748:A:H2     | 13:AG:62:ALA:HB1   | 1.59                     | 0.67              |
| 9:AC:220:ARG:HG3   | 9:AC:220:ARG:NH1   | 2.04                     | 0.67              |
| 9:AC:244:VAL:HG22  | 9:AC:245:THR:N     | 2.07                     | 0.67              |
| 10:AD:96:ILE:HG22  | 10:AD:97:SER:H     | 1.58                     | 0.67              |
| 11:AE:72:SER:HB3   | 11:AE:74:LYS:HD2   | 1.76                     | 0.67              |
| 12:AF:151:LEU:HG   | 12:AF:153:ILE:HG13 | 1.75                     | 0.67              |
| 18:AL:105:ILE:HD13 | 18:AL:105:ILE:H    | 1.58                     | 0.67              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:AM:90:GLU:OE2   | 19:AM:92:TRP:CE2   | 2.46                     | 0.67              |
| 20:AN:83:LEU:HD12  | 20:AN:86:ARG:HD3   | 1.75                     | 0.67              |
| 29:AW:23:LYS:HE3   | 29:AW:24:ARG:N     | 2.05                     | 0.67              |
| 33:BA:9:G:H5'      | 37:BE:107:GLY:HA3  | 1.74                     | 0.67              |
| 33:BA:557:G:H3'    | 33:BA:558:G:C8     | 2.29                     | 0.67              |
| 33:BA:968:A:N3     | 33:BA:1062:U:H4'   | 2.09                     | 0.67              |
| 33:BA:1010:U:H3    | 33:BA:1019:A:H2    | 1.40                     | 0.67              |
| 33:BA:1054:C:O2'   | 33:BA:1055:A:H5''  | 1.94                     | 0.67              |
| 8:CB:61:C:OP2      | 30:CX:44:LYS:HD3   | 1.94                     | 0.67              |
| 8:CB:64:A:N1       | 8:CB:91:A:N6       | 2.41                     | 0.67              |
| 8:CB:264:C:H2'     | 8:CB:265:A:C5'     | 2.23                     | 0.67              |
| 8:CB:705:A:O2'     | 8:CB:706:A:H5'     | 1.92                     | 0.67              |
| 8:CB:810:U:C5      | 18:CL:37:GLY:CA    | 2.77                     | 0.67              |
| 8:CB:1506:U:H2'    | 8:CB:1507:C:C6     | 2.28                     | 0.67              |
| 8:CB:1882:U:O2'    | 8:CB:1883:U:H5'    | 1.94                     | 0.67              |
| 8:CB:2052:A:H1'    | 10:CD:153:GLY:HA3  | 1.75                     | 0.67              |
| 8:CB:2303:G:H2'    | 12:CF:128:SER:HG   | 1.56                     | 0.67              |
| 8:CB:2684:U:H4'    | 17:CK:76:VAL:HG21  | 1.76                     | 0.67              |
| 8:CB:2762:C:H2'    | 8:CB:2763:G:H5''   | 1.74                     | 0.67              |
| 8:CB:2791:G:H5''   | 8:CB:2791:G:H8     | 1.59                     | 0.67              |
| 9:CC:217:PRO:O     | 9:CC:218:THR:C     | 2.32                     | 0.67              |
| 11:CE:175:ILE:CG2  | 11:CE:176:ASP:N    | 2.56                     | 0.67              |
| 13:CG:25:ILE:HG12  | 13:CG:26:LYS:H     | 1.57                     | 0.67              |
| 14:CH:135:HIS:CG   | 14:CH:136:SER:N    | 2.62                     | 0.67              |
| 18:CL:135:ILE:HG22 | 18:CL:138:ALA:HB3  | 1.74                     | 0.67              |
| 20:CN:83:LEU:HD12  | 20:CN:86:ARG:HD3   | 1.76                     | 0.67              |
| 22:CP:100:ARG:HG2  | 22:CP:102:ARG:HH21 | 1.59                     | 0.67              |
| 27:CU:5:ARG:HG2    | 27:CU:6:ARG:N      | 2.07                     | 0.67              |
| 33:DA:202:G:O2'    | 33:DA:468:A:H2'    | 1.94                     | 0.67              |
| 33:DA:718:A:H5''   | 33:DA:720:C:N4     | 2.08                     | 0.67              |
| 33:DA:942:G:N2     | 41:DI:125:GLN:HE22 | 1.89                     | 0.67              |
| 33:DA:998:C:N4     | 33:DA:1043:G:H1    | 1.92                     | 0.67              |
| 35:DC:87:ARG:HD3   | 35:DC:87:ARG:O     | 1.93                     | 0.67              |
| 36:DD:142:VAL:HG23 | 36:DD:180:THR:H    | 1.58                     | 0.67              |
| 41:DI:14:SER:OG    | 41:DI:69:GLY:HA3   | 1.93                     | 0.67              |
| 48:DP:39:PHE:O     | 48:DP:39:PHE:HD2   | 1.76                     | 0.67              |
| 2:A1:29:LYS:HE2    | 2:A1:30:PRO:HD2    | 1.77                     | 0.67              |
| 8:AB:61:C:C1'      | 30:AX:41:HIS:HE2   | 2.06                     | 0.67              |
| 8:AB:398:C:C3'     | 32:AZ:49:ARG:HH22  | 2.06                     | 0.67              |
| 8:AB:966:G:H1'     | 8:AB:2267:A:N6     | 2.09                     | 0.67              |
| 8:AB:1610:A:O2'    | 8:AB:1611:C:H5'    | 1.94                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1707:G:H2'   | 8:AB:1708:C:H5'   | 1.75                     | 0.67              |
| 8:AB:2452:C:H3'   | 8:AB:2452:C:C6    | 2.29                     | 0.67              |
| 8:AB:2523:G:N2    | 8:AB:2541:A:H1'   | 2.09                     | 0.67              |
| 8:AB:2623:G:C2'   | 8:AB:2624:G:H5'   | 2.24                     | 0.67              |
| 10:AD:86:GLU:CG   | 10:AD:87:GLY:H    | 2.06                     | 0.67              |
| 19:AM:105:MET:HA  | 19:AM:105:MET:HE3 | 1.76                     | 0.67              |
| 21:AO:24:THR:CG2  | 21:AO:41:ALA:HA   | 2.25                     | 0.67              |
| 26:AT:3:ARG:HG2   | 26:AT:7:LEU:HB3   | 1.76                     | 0.67              |
| 33:BA:9:G:N2      | 33:BA:26:A:C5     | 2.63                     | 0.67              |
| 33:BA:574:A:H5''  | 33:BA:575:G:OP2   | 1.93                     | 0.67              |
| 33:BA:603:U:C2'   | 33:BA:604:G:H5''  | 2.23                     | 0.67              |
| 33:BA:628:G:H2'   | 33:BA:629:A:C8    | 2.29                     | 0.67              |
| 35:BC:17:TRP:CE2  | 46:BN:94:GLY:HA2  | 2.29                     | 0.67              |
| 35:BC:159:ALA:C   | 35:BC:161:ILE:H   | 1.97                     | 0.67              |
| 36:BD:77:GLU:HG3  | 36:BD:81:LEU:HD21 | 1.76                     | 0.67              |
| 38:BF:38:ARG:HD3  | 38:BF:98:GLU:N    | 2.09                     | 0.67              |
| 46:BN:66:THR:HG23 | 46:BN:67:GLY:N    | 2.09                     | 0.67              |
| 46:BN:78:LEU:HB3  | 46:BN:82:LYS:HB2  | 1.75                     | 0.67              |
| 7:CA:33:G:N2      | 7:CA:34:A:C4      | 2.62                     | 0.67              |
| 8:CB:202:U:H2'    | 8:CB:202:U:O2     | 1.94                     | 0.67              |
| 8:CB:338:G:C2     | 8:CB:339:U:C2     | 2.82                     | 0.67              |
| 8:CB:393:C:C3'    | 8:CB:394:C:H5''   | 2.23                     | 0.67              |
| 8:CB:449:A:H2'    | 8:CB:450:G:H5'    | 1.74                     | 0.67              |
| 8:CB:911:A:C5     | 19:CM:13:HIS:HD2  | 2.11                     | 0.67              |
| 8:CB:1130:U:H2'   | 8:CB:1130:U:O5'   | 1.94                     | 0.67              |
| 8:CB:1162:G:H8    | 8:CB:1162:G:O5'   | 1.77                     | 0.67              |
| 8:CB:1432:G:H2'   | 8:CB:1433:A:H8    | 1.60                     | 0.67              |
| 8:CB:1517:G:O2'   | 8:CB:1518:C:H5'   | 1.94                     | 0.67              |
| 8:CB:2636:C:H2'   | 8:CB:2637:U:C6    | 2.29                     | 0.67              |
| 8:CB:2821:A:C8    | 8:CB:2821:A:H3'   | 2.30                     | 0.67              |
| 8:CB:2849:U:H4'   | 8:CB:2850:A:H5'   | 1.76                     | 0.67              |
| 9:CC:22:GLU:HB2   | 9:CC:202:ARG:CG   | 2.23                     | 0.67              |
| 12:CF:161:SER:O   | 12:CF:164:GLU:HB2 | 1.94                     | 0.67              |
| 15:CI:37:PHE:HB2  | 15:CI:66:PHE:HE2  | 1.59                     | 0.67              |
| 16:CJ:27:ARG:HG3  | 16:CJ:27:ARG:NH1  | 2.08                     | 0.67              |
| 20:CN:100:CYS:HG  | 20:CN:112:TYR:HE2 | 1.41                     | 0.67              |
| 21:CO:51:ALA:HB1  | 21:CO:55:GLU:HG3  | 1.76                     | 0.67              |
| 23:CQ:74:SER:O    | 23:CQ:78:PHE:HB2  | 1.95                     | 0.67              |
| 24:CR:35:PHE:O    | 24:CR:37:GLU:HG2  | 1.95                     | 0.67              |
| 29:CW:46:ALA:O    | 29:CW:47:GLY:C    | 2.32                     | 0.67              |
| 29:CW:66:VAL:HG13 | 29:CW:67:LYS:H    | 1.59                     | 0.67              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:437:U:H1'   | 36:DD:153:ARG:HH22 | 1.58                     | 0.67              |
| 33:DA:550:G:C4    | 33:DA:551:U:C5     | 2.81                     | 0.67              |
| 33:DA:601:G:N2    | 33:DA:638:U:C2     | 2.62                     | 0.67              |
| 33:DA:1081:A:C2'  | 33:DA:1082:A:H5'   | 2.24                     | 0.67              |
| 45:DM:68:LEU:HD22 | 45:DM:69:ARG:NH1   | 2.08                     | 0.67              |
| 3:A2:5:PHE:CE1    | 8:AB:464:U:H5'     | 2.30                     | 0.67              |
| 4:A3:11:LYS:HB2   | 18:AL:63:LYS:HE3   | 1.77                     | 0.67              |
| 5:A4:18:LYS:NZ    | 8:AB:2757:A:H8     | 1.92                     | 0.67              |
| 8:AB:545:U:H6     | 8:AB:545:U:H3'     | 1.59                     | 0.67              |
| 8:AB:989:G:OP2    | 31:AY:12:ALA:HB2   | 1.94                     | 0.67              |
| 8:AB:1193:G:C2    | 8:AB:1194:A:C4     | 2.82                     | 0.67              |
| 8:AB:2494:G:O2'   | 19:AM:78:LEU:HD22  | 1.94                     | 0.67              |
| 8:AB:2617:U:H2'   | 8:AB:2618:G:O4'    | 1.94                     | 0.67              |
| 12:AF:52:ALA:HB1  | 12:AF:148:VAL:CG1  | 2.24                     | 0.67              |
| 20:AN:11:ASN:O    | 20:AN:12:ARG:HB2   | 1.93                     | 0.67              |
| 21:AO:57:ALA:HB2  | 21:AO:62:LEU:HD22  | 1.76                     | 0.67              |
| 22:AP:25:VAL:HG13 | 22:AP:88:ARG:H     | 1.59                     | 0.67              |
| 26:AT:7:LEU:HD13  | 26:AT:46:ALA:CB    | 2.23                     | 0.67              |
| 33:BA:585:G:H2'   | 33:BA:586:C:H5'    | 1.75                     | 0.67              |
| 33:BA:1193:G:O2'  | 33:BA:1194:U:H5'   | 1.94                     | 0.67              |
| 35:BC:165:GLU:HG3 | 35:BC:166:TRP:H    | 1.57                     | 0.67              |
| 37:BE:81:GLN:CG   | 37:BE:149:PRO:HD3  | 2.24                     | 0.67              |
| 38:BF:67:PRO:O    | 38:BF:70:VAL:HG22  | 1.94                     | 0.67              |
| 41:BI:50:PRO:HG2  | 41:BI:51:LEU:HD12  | 1.76                     | 0.67              |
| 8:CB:27:G:H1'     | 8:CB:513:A:N6      | 2.08                     | 0.67              |
| 8:CB:35:G:N2      | 8:CB:36:G:H1'      | 2.09                     | 0.67              |
| 8:CB:107:G:H5'    | 8:CB:294:A:OP1     | 1.94                     | 0.67              |
| 8:CB:371:A:H61    | 8:CB:401:A:H3'     | 1.60                     | 0.67              |
| 8:CB:494:G:H4'    | 25:CS:6:LYS:HG2    | 1.74                     | 0.67              |
| 8:CB:570:G:N7     | 8:CB:2030:A:N6     | 2.41                     | 0.67              |
| 8:CB:814:C:C1'    | 8:CB:1225:G:H21    | 2.07                     | 0.67              |
| 8:CB:985:C:O2'    | 8:CB:986:C:H5''    | 1.94                     | 0.67              |
| 8:CB:1008:A:H61   | 8:CB:1136:G:H1     | 1.42                     | 0.67              |
| 8:CB:1366:A:H2'   | 8:CB:1367:A:H5'    | 1.76                     | 0.67              |
| 8:CB:1842:G:N2    | 8:CB:1901:A:C5     | 2.63                     | 0.67              |
| 8:CB:1861:G:H5''  | 8:CB:1861:G:H8     | 1.57                     | 0.67              |
| 8:CB:2047:C:H2'   | 8:CB:2048:G:C8     | 2.29                     | 0.67              |
| 8:CB:2560:A:C5    | 8:CB:2561:U:C5     | 2.83                     | 0.67              |
| 14:CH:6:LEU:HB2   | 14:CH:35:LYS:HB3   | 1.76                     | 0.67              |
| 16:CJ:36:LEU:O    | 16:CJ:51:GLY:HA2   | 1.94                     | 0.67              |
| 18:CL:35:HIS:CE1  | 24:CR:84:ARG:O     | 2.41                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 23:CQ:94:LEU:HD12 | 23:CQ:95:ALA:N    | 2.08                     | 0.67              |
| 33:DA:36:C:C2'    | 33:DA:37:U:H5'    | 2.24                     | 0.67              |
| 33:DA:407:U:N3    | 33:DA:408:A:N7    | 2.43                     | 0.67              |
| 33:DA:408:A:N1    | 33:DA:434:U:O2    | 2.27                     | 0.67              |
| 33:DA:552:U:C4'   | 44:DL:82:ARG:HD2  | 2.25                     | 0.67              |
| 33:DA:564:C:C5    | 49:DQ:32:ILE:HD11 | 2.29                     | 0.67              |
| 33:DA:678:U:H2'   | 33:DA:679:C:O4'   | 1.95                     | 0.67              |
| 33:DA:929:G:H5''  | 33:DA:930:C:OP2   | 1.93                     | 0.67              |
| 33:DA:991:U:H2'   | 33:DA:1212:U:H1'  | 1.77                     | 0.67              |
| 33:DA:1458:G:C2   | 33:DA:1459:G:C8   | 2.83                     | 0.67              |
| 34:DB:127:LYS:O   | 34:DB:128:LEU:CB  | 2.42                     | 0.67              |
| 8:AB:253:C:H2'    | 8:AB:253:C:O2     | 1.94                     | 0.67              |
| 8:AB:299:A:H1'    | 8:AB:322:A:N6     | 2.09                     | 0.67              |
| 8:AB:396:G:C2     | 8:AB:397:U:C2     | 2.82                     | 0.67              |
| 8:AB:614:A:H4'    | 8:AB:616:A:N7     | 2.09                     | 0.67              |
| 8:AB:819:A:OP2    | 8:AB:1187:G:N2    | 2.26                     | 0.67              |
| 8:AB:1611:C:H2'   | 8:AB:1611:C:O2    | 1.93                     | 0.67              |
| 8:AB:2091:C:H3'   | 8:AB:2092:U:H2'   | 1.77                     | 0.67              |
| 8:AB:2142:A:H61   | 8:AB:2149:U:H3    | 1.42                     | 0.67              |
| 8:AB:2226:C:H2'   | 8:AB:2227:A:O4'   | 1.94                     | 0.67              |
| 8:AB:2335:A:N7    | 8:AB:2337:G:C5    | 2.63                     | 0.67              |
| 10:AD:88:GLU:HB3  | 10:AD:90:PHE:H    | 1.58                     | 0.67              |
| 11:AE:112:LEU:HB3 | 11:AE:115:GLN:HB2 | 1.76                     | 0.67              |
| 23:AQ:49:ARG:HG2  | 24:AR:77:PHE:HZ   | 1.59                     | 0.67              |
| 26:AT:62:VAL:CG2  | 26:AT:63:VAL:H    | 2.05                     | 0.67              |
| 33:BA:108:G:O6    | 52:BT:9:ARG:HG3   | 1.95                     | 0.67              |
| 33:BA:541:G:H2'   | 33:BA:542:G:C8    | 2.29                     | 0.67              |
| 33:BA:755:G:C5    | 33:BA:756:C:H5    | 2.12                     | 0.67              |
| 33:BA:936:C:H1'   | 33:BA:1382:C:N4   | 2.07                     | 0.67              |
| 33:BA:1078:U:C4   | 33:BA:1079:G:C2   | 2.82                     | 0.67              |
| 33:BA:1423:G:O2'  | 33:BA:1424:U:H5'  | 1.95                     | 0.67              |
| 35:BC:63:ILE:HG12 | 35:BC:96:VAL:HG23 | 1.77                     | 0.67              |
| 37:BE:76:ASN:CG   | 37:BE:77:ASN:H    | 1.98                     | 0.67              |
| 38:BF:11:HIS:ND1  | 38:BF:12:PRO:HD2  | 2.10                     | 0.67              |
| 48:BP:2:VAL:O     | 48:BP:2:VAL:HG22  | 1.94                     | 0.67              |
| 53:BU:16:ARG:HD2  | 53:BU:16:ARG:H    | 1.60                     | 0.67              |
| 8:CB:120:U:O4     | 8:CB:177:G:C8     | 2.48                     | 0.67              |
| 8:CB:343:C:N3     | 8:CB:344:A:C8     | 2.62                     | 0.67              |
| 8:CB:539:G:H2'    | 8:CB:540:C:C6     | 2.30                     | 0.67              |
| 8:CB:682:G:C2     | 8:CB:683:U:C4     | 2.83                     | 0.67              |
| 8:CB:1238:G:C2    | 8:CB:1239:G:C8    | 2.81                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1453:A:H8     | 8:CB:1453:A:H5''  | 1.58                     | 0.67              |
| 8:CB:1567:G:O4'    | 8:CB:1568:G:C2    | 2.48                     | 0.67              |
| 8:CB:2189:U:H3'    | 8:CB:2189:U:C6    | 2.30                     | 0.67              |
| 8:CB:2320:U:C6     | 8:CB:2320:U:C3'   | 2.78                     | 0.67              |
| 8:CB:2623:G:C2'    | 8:CB:2624:G:H5'   | 2.25                     | 0.67              |
| 12:CF:33:ILE:HG13  | 12:CF:34:THR:H    | 1.59                     | 0.67              |
| 13:CG:104:LEU:HD12 | 13:CG:106:LEU:HG  | 1.77                     | 0.67              |
| 21:CO:2:ASP:HB2    | 21:CO:4:LYS:NZ    | 2.10                     | 0.67              |
| 23:CQ:68:ALA:HB1   | 23:CQ:73:ILE:CG2  | 2.24                     | 0.67              |
| 27:CU:48:VAL:HG13  | 27:CU:51:LEU:H    | 1.59                     | 0.67              |
| 32:CZ:49:ARG:HA    | 32:CZ:52:ALA:CB   | 2.22                     | 0.67              |
| 33:DA:261:U:H5     | 52:DT:73:ARG:CZ   | 2.08                     | 0.67              |
| 33:DA:401:C:C6     | 33:DA:401:C:C3'   | 2.78                     | 0.67              |
| 33:DA:579:A:H2'    | 33:DA:580:C:O4'   | 1.94                     | 0.67              |
| 33:DA:727:G:H2'    | 33:DA:728:A:H5''  | 1.77                     | 0.67              |
| 33:DA:767:A:H61    | 33:DA:813:U:H3    | 1.41                     | 0.67              |
| 33:DA:1105:A:C3'   | 33:DA:1106:G:H5'' | 2.24                     | 0.67              |
| 33:DA:1138:G:C5    | 33:DA:1140:C:H1'  | 2.29                     | 0.67              |
| 35:DC:150:VAL:O    | 35:DC:166:TRP:HB2 | 1.95                     | 0.67              |
| 37:DE:52:ALA:HB2   | 37:DE:61:LYS:HE2  | 1.76                     | 0.67              |
| 51:DS:18:VAL:HG21  | 51:DS:43:MET:HG2  | 1.76                     | 0.67              |
| 1:A0:47:TYR:CA     | 1:A0:52:LYS:HB2   | 2.23                     | 0.67              |
| 4:A3:11:LYS:HD2    | 18:AL:62:PRO:O    | 1.94                     | 0.67              |
| 8:AB:28:A:H1'      | 8:AB:513:A:C2     | 2.30                     | 0.67              |
| 8:AB:583:G:N2      | 8:AB:584:C:C2     | 2.63                     | 0.67              |
| 8:AB:599:A:N3      | 8:AB:659:G:C2     | 2.63                     | 0.67              |
| 8:AB:780:G:H2'     | 8:AB:782:A:N7     | 2.10                     | 0.67              |
| 8:AB:800:A:OP1     | 55:AB:4379:HOH:O  | 2.12                     | 0.67              |
| 8:AB:800:A:C4'     | 8:AB:801:G:H5'    | 2.25                     | 0.67              |
| 8:AB:1631:G:C8     | 8:AB:1631:G:C3'   | 2.77                     | 0.67              |
| 8:AB:1652:A:N6     | 8:AB:1653:G:N2    | 2.43                     | 0.67              |
| 8:AB:1877:A:H8     | 8:AB:1877:A:O5'   | 1.77                     | 0.67              |
| 9:AC:27:LYS:N      | 9:AC:28:PRO:HD3   | 2.10                     | 0.67              |
| 9:AC:131:MET:O     | 9:AC:134:ILE:HG22 | 1.94                     | 0.67              |
| 10:AD:7:LYS:HB3    | 10:AD:201:LEU:CD2 | 2.23                     | 0.67              |
| 14:AH:83:LYS:HD3   | 14:AH:149:GLU:O   | 1.93                     | 0.67              |
| 18:AL:25:SER:O     | 18:AL:27:LEU:N    | 2.27                     | 0.67              |
| 23:AQ:12:ARG:HH11  | 23:AQ:12:ARG:HG2  | 1.58                     | 0.67              |
| 31:AY:57:GLU:O     | 31:AY:58:GLU:HB2  | 1.93                     | 0.67              |
| 33:BA:254:G:C2     | 33:BA:255:G:C8    | 2.83                     | 0.67              |
| 33:BA:390:U:H5''   | 48:BP:28:ARG:NH1  | 2.09                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:401:C:H6     | 33:BA:401:C:H3'   | 1.59                     | 0.67              |
| 33:BA:680:C:H5'    | 33:BA:680:C:C6    | 2.29                     | 0.67              |
| 33:BA:840:C:H42    | 33:BA:846:G:H1    | 1.41                     | 0.67              |
| 33:BA:1122:U:H2'   | 33:BA:1123:U:H6   | 1.60                     | 0.67              |
| 37:BE:104:ILE:HD12 | 37:BE:114:LEU:HB2 | 1.74                     | 0.67              |
| 41:BI:48:ARG:HA    | 41:BI:51:LEU:HD13 | 1.75                     | 0.67              |
| 46:BN:51:PRO:HB3   | 46:BN:54:SER:HB3  | 1.74                     | 0.67              |
| 3:C2:39:ARG:O      | 3:C2:40:ALA:O     | 2.13                     | 0.67              |
| 7:CA:23:G:O2'      | 7:CA:24:G:H5'     | 1.93                     | 0.67              |
| 8:CB:28:A:H1'      | 8:CB:513:A:C2     | 2.29                     | 0.67              |
| 8:CB:1092:C:H2'    | 8:CB:1093:G:O4'   | 1.95                     | 0.67              |
| 8:CB:1719:G:C5     | 8:CB:1720:U:C5    | 2.83                     | 0.67              |
| 8:CB:2452:C:C5     | 8:CB:2453:A:C6    | 2.82                     | 0.67              |
| 10:CD:156:PHE:CD1  | 16:CJ:81:ILE:HG12 | 2.22                     | 0.67              |
| 11:CE:199:MET:HG3  | 11:CE:200:LEU:H   | 1.60                     | 0.67              |
| 12:CF:2:LYS:HA     | 12:CF:2:LYS:HE2   | 1.75                     | 0.67              |
| 16:CJ:3:THR:OG1    | 16:CJ:4:PHE:N     | 2.27                     | 0.67              |
| 17:CK:2:ILE:HG21   | 17:CK:67:LYS:CE   | 2.25                     | 0.67              |
| 25:CS:72:THR:O     | 25:CS:73:LYS:HG2  | 1.95                     | 0.67              |
| 32:CZ:56:ARG:CG    | 32:CZ:56:ARG:HH11 | 2.07                     | 0.67              |
| 33:DA:661:G:H8     | 33:DA:661:G:OP2   | 1.76                     | 0.67              |
| 33:DA:704:A:C2'    | 33:DA:705:G:H5''  | 2.24                     | 0.67              |
| 33:DA:709:U:H2'    | 33:DA:710:G:C8    | 2.29                     | 0.67              |
| 33:DA:886:G:C4     | 33:DA:887:G:C8    | 2.83                     | 0.67              |
| 33:DA:1098:C:H1'   | 33:DA:1167:A:H61  | 1.59                     | 0.67              |
| 33:DA:1418:A:C8    | 33:DA:1419:G:O4'  | 2.48                     | 0.67              |
| 44:DL:54:VAL:HG22  | 44:DL:62:VAL:O    | 1.94                     | 0.67              |
| 48:DP:50:THR:HG22  | 48:DP:52:LEU:CD1  | 2.24                     | 0.67              |
| 48:DP:78:VAL:HG12  | 48:DP:80:LYS:HG2  | 1.76                     | 0.67              |
| 3:A2:9:VAL:HG22    | 8:AB:1309:G:OP1   | 1.95                     | 0.67              |
| 7:AA:95:U:H2'      | 7:AA:96:G:H8      | 1.55                     | 0.67              |
| 8:AB:456:C:C2      | 26:AT:70:HIS:NE2  | 2.62                     | 0.67              |
| 8:AB:657:U:C2'     | 8:AB:658:U:H6     | 2.06                     | 0.67              |
| 8:AB:1196:C:H2'    | 8:AB:1197:G:C8    | 2.30                     | 0.67              |
| 8:AB:2784:U:H2'    | 8:AB:2785:C:C6    | 2.29                     | 0.67              |
| 9:AC:244:VAL:O     | 9:AC:245:THR:C    | 2.32                     | 0.67              |
| 10:AD:33:ARG:HH21  | 10:AD:87:GLY:HA3  | 1.59                     | 0.67              |
| 19:AM:71:LYS:HE2   | 19:AM:93:VAL:HA   | 1.77                     | 0.67              |
| 23:AQ:94:LEU:HD22  | 23:AQ:95:ALA:H    | 1.60                     | 0.67              |
| 29:AW:40:ARG:HH11  | 29:AW:40:ARG:HG2  | 1.60                     | 0.67              |
| 29:AW:44:PHE:CB    | 29:AW:76:ARG:HG3  | 2.24                     | 0.67              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:AZ:24:ILE:HG12  | 32:AZ:25:ARG:O     | 1.94                     | 0.67              |
| 33:BA:238:A:N3     | 33:BA:239:U:C6     | 2.62                     | 0.67              |
| 33:BA:394:G:C2     | 33:BA:395:C:C4     | 2.82                     | 0.67              |
| 33:BA:655:A:H61    | 33:BA:752:G:H21    | 1.40                     | 0.67              |
| 33:BA:803:G:N7     | 33:BA:804:U:H5     | 1.93                     | 0.67              |
| 33:BA:908:A:H8     | 33:BA:908:A:O5'    | 1.77                     | 0.67              |
| 33:BA:982:U:H5'    | 46:BN:5:MET:CE     | 2.23                     | 0.67              |
| 33:BA:1033:G:H2'   | 33:BA:1034:G:O4'   | 1.94                     | 0.67              |
| 33:BA:1163:A:H2'   | 33:BA:1164:G:H8    | 1.58                     | 0.67              |
| 33:BA:1345:U:C4    | 33:BA:1377:A:C2    | 2.81                     | 0.67              |
| 33:BA:1438:G:C2'   | 33:BA:1439:G:H8    | 2.06                     | 0.67              |
| 44:BL:35:ARG:O     | 44:BL:52:CYS:HB2   | 1.94                     | 0.67              |
| 45:BM:64:VAL:HA    | 45:BM:68:LEU:HG    | 1.77                     | 0.67              |
| 46:BN:78:LEU:HB2   | 46:BN:83:VAL:HG22  | 1.76                     | 0.67              |
| 1:C0:24:VAL:HB     | 1:C0:26:SER:OG     | 1.94                     | 0.67              |
| 8:CB:485:C:HO2'    | 25:CS:60:HIS:CD2   | 2.13                     | 0.67              |
| 8:CB:856:G:C1'     | 29:CW:23:LYS:HD2   | 2.24                     | 0.67              |
| 8:CB:2243:U:H2'    | 8:CB:2244:U:H6     | 1.59                     | 0.67              |
| 8:CB:2329:U:H2'    | 8:CB:2330:G:O4'    | 1.95                     | 0.67              |
| 8:CB:2377:A:N3     | 21:CO:92:PHE:CZ    | 2.63                     | 0.67              |
| 8:CB:2489:U:O2     | 8:CB:2491:U:C5     | 2.48                     | 0.67              |
| 8:CB:2547:A:C2     | 8:CB:2548:U:C4     | 2.83                     | 0.67              |
| 9:CC:82:TYR:CD1    | 9:CC:83:ASP:N      | 2.63                     | 0.67              |
| 9:CC:244:VAL:O     | 9:CC:245:THR:C     | 2.33                     | 0.67              |
| 10:CD:178:VAL:HG23 | 10:CD:179:ARG:N    | 2.09                     | 0.67              |
| 14:CH:135:HIS:HB3  | 14:CH:138:VAL:CG2  | 2.25                     | 0.67              |
| 17:CK:80:ASP:HB2   | 22:CP:70:GLU:OE2   | 1.95                     | 0.67              |
| 19:CM:77:PRO:CD    | 19:CM:86:LYS:HZ3   | 2.07                     | 0.67              |
| 22:CP:25:VAL:HG13  | 22:CP:88:ARG:H     | 1.59                     | 0.67              |
| 27:CU:92:VAL:HG22  | 27:CU:93:ARG:N     | 2.08                     | 0.67              |
| 33:DA:344:A:H4'    | 33:DA:345:C:OP2    | 1.95                     | 0.67              |
| 33:DA:656:G:N2     | 33:DA:751:U:C2     | 2.63                     | 0.67              |
| 33:DA:781:A:C8     | 33:DA:781:A:C3'    | 2.77                     | 0.67              |
| 33:DA:880:C:C4     | 33:DA:881:G:N7     | 2.62                     | 0.67              |
| 33:DA:1345:U:C6    | 33:DA:1377:A:C6    | 2.82                     | 0.67              |
| 34:DB:143:LEU:HD23 | 34:DB:147:LEU:HD12 | 1.77                     | 0.67              |
| 38:DF:9:MET:HE3    | 50:DR:64:LEU:HD23  | 1.76                     | 0.67              |
| 42:DJ:9:ARG:HB2    | 42:DJ:99:GLN:HB2   | 1.75                     | 0.67              |
| 44:DL:33:CYS:HA    | 44:DL:54:VAL:HG12  | 1.77                     | 0.67              |
| 4:A3:34:LYS:HZ2    | 4:A3:34:LYS:CB     | 2.08                     | 0.67              |
| 8:AB:35:G:N2       | 8:AB:36:G:HI'      | 2.09                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:202:U:H2'    | 8:AB:202:U:O2     | 1.93                     | 0.67              |
| 8:AB:328:U:H4'    | 27:AU:65:GLN:HG3  | 1.77                     | 0.67              |
| 8:AB:788:A:H5''   | 8:AB:790:U:C4     | 2.29                     | 0.67              |
| 8:AB:865:C:N4     | 8:AB:908:C:N4     | 2.43                     | 0.67              |
| 8:AB:1341:G:C5    | 26:AT:84:TYR:CE2  | 2.83                     | 0.67              |
| 8:AB:1797:G:N3    | 8:AB:1823:G:C2    | 2.63                     | 0.67              |
| 8:AB:2019:A:H2    | 8:AB:2035:G:H22   | 1.42                     | 0.67              |
| 8:AB:2544:G:H2'   | 8:AB:2545:G:H8    | 1.60                     | 0.67              |
| 9:AC:15:VAL:HG12  | 9:AC:16:VAL:HG22  | 1.75                     | 0.67              |
| 9:AC:16:VAL:O     | 9:AC:17:LYS:HB2   | 1.94                     | 0.67              |
| 9:AC:257:ARG:O    | 9:AC:258:SER:HB2  | 1.93                     | 0.67              |
| 12:AF:18:GLU:O    | 12:AF:19:PHE:HB2  | 1.94                     | 0.67              |
| 29:AW:42:THR:HG22 | 29:AW:43:LYS:O    | 1.95                     | 0.67              |
| 33:BA:690:G:H8    | 33:BA:690:G:O5'   | 1.78                     | 0.67              |
| 33:BA:697:U:O2    | 33:BA:798:U:H1'   | 1.95                     | 0.67              |
| 33:BA:862:C:N3    | 33:BA:863:U:H6    | 1.92                     | 0.67              |
| 33:BA:1155:A:N6   | 33:BA:1156:G:C2   | 2.63                     | 0.67              |
| 34:BB:89:PHE:HE2  | 34:BB:153:MET:H   | 1.42                     | 0.67              |
| 36:BD:159:GLU:O   | 36:BD:162:GLU:HB3 | 1.95                     | 0.67              |
| 38:BF:60:VAL:HG12 | 38:BF:61:LEU:N    | 2.04                     | 0.67              |
| 44:BL:73:LEU:HD23 | 44:BL:103:CYS:HB3 | 1.75                     | 0.67              |
| 51:BS:48:ILE:HG22 | 51:BS:49:ALA:N    | 2.09                     | 0.67              |
| 51:BS:52:ASN:HB2  | 51:BS:76:THR:HA   | 1.76                     | 0.67              |
| 53:BU:13:VAL:HG13 | 53:BU:14:ALA:N    | 2.08                     | 0.67              |
| 7:CA:73:A:H2'     | 7:CA:74:U:H5'     | 1.74                     | 0.67              |
| 8:CB:301:G:C2     | 8:CB:302:C:C4     | 2.82                     | 0.67              |
| 8:CB:794:A:C2'    | 8:CB:795:C:H5'    | 2.24                     | 0.67              |
| 8:CB:1861:G:C2    | 8:CB:1882:U:O2    | 2.47                     | 0.67              |
| 8:CB:2138:G:H2'   | 8:CB:2139:U:O4'   | 1.95                     | 0.67              |
| 8:CB:2713:U:H3'   | 8:CB:2714:G:H5''  | 1.76                     | 0.67              |
| 9:CC:155:ARG:HD3  | 9:CC:155:ARG:C    | 2.15                     | 0.67              |
| 11:CE:136:GLN:HA  | 11:CE:139:LYS:CB  | 2.16                     | 0.67              |
| 14:CH:2:GLN:HA    | 14:CH:21:VAL:CG1  | 2.25                     | 0.67              |
| 14:CH:60:GLU:O    | 14:CH:64:ALA:HB3  | 1.95                     | 0.67              |
| 18:CL:35:HIS:CE1  | 24:CR:84:ARG:HB3  | 2.30                     | 0.67              |
| 20:CN:8:ARG:HH21  | 20:CN:46:ARG:CG   | 2.04                     | 0.67              |
| 26:CT:27:SER:HB3  | 26:CT:29:THR:HG23 | 1.76                     | 0.67              |
| 33:DA:115:G:N1    | 33:DA:313:A:C2    | 2.63                     | 0.67              |
| 33:DA:201:G:H2'   | 33:DA:202:G:O4'   | 1.95                     | 0.67              |
| 33:DA:354:G:H2'   | 33:DA:355:C:H5'   | 1.76                     | 0.67              |
| 33:DA:382:A:C2'   | 33:DA:383:A:H8    | 2.05                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:586:C:OP1   | 49:DQ:35:LYS:NZ   | 2.28                     | 0.67              |
| 33:DA:728:A:C2    | 33:DA:729:A:C6    | 2.83                     | 0.67              |
| 33:DA:1084:G:C5   | 33:DA:1085:U:C4   | 2.83                     | 0.67              |
| 33:DA:1398:A:H5'' | 33:DA:1398:A:C8   | 2.28                     | 0.67              |
| 33:DA:1424:U:O2'  | 33:DA:1425:U:H5'  | 1.94                     | 0.67              |
| 34:DB:81:ASP:O    | 34:DB:85:SER:OG   | 2.12                     | 0.67              |
| 37:DE:12:GLU:HG2  | 37:DE:38:VAL:HG13 | 1.76                     | 0.67              |
| 40:DH:54:THR:O    | 40:DH:56:PRO:HD3  | 1.94                     | 0.67              |
| 49:DQ:30:HIS:HE1  | 49:DQ:32:ILE:CG2  | 2.06                     | 0.67              |
| 49:DQ:61:ARG:HG2  | 49:DQ:62:GLU:N    | 2.10                     | 0.67              |
| 8:AB:487:C:H2'    | 8:AB:488:G:H5'    | 1.77                     | 0.67              |
| 8:AB:739:A:H5'    | 55:AB:4353:HOH:O  | 1.93                     | 0.67              |
| 8:AB:796:C:H3'    | 8:AB:796:C:C6     | 2.30                     | 0.67              |
| 8:AB:802:A:H2'    | 8:AB:803:U:C6     | 2.29                     | 0.67              |
| 8:AB:802:A:C5     | 8:AB:803:U:C4     | 2.82                     | 0.67              |
| 8:AB:852:U:C4     | 8:AB:853:C:N4     | 2.63                     | 0.67              |
| 8:AB:1323:C:C3'   | 8:AB:1324:G:H5''  | 2.25                     | 0.67              |
| 8:AB:1661:G:N2    | 8:AB:2000:C:H1'   | 2.08                     | 0.67              |
| 8:AB:2058:A:H5''  | 8:AB:2058:A:C8    | 2.22                     | 0.67              |
| 8:AB:2617:U:C2'   | 8:AB:2618:G:H5'   | 2.24                     | 0.67              |
| 9:AC:52:HIS:O     | 9:AC:53:ILE:HD12  | 1.95                     | 0.67              |
| 9:AC:114:GLN:C    | 9:AC:115:ILE:HD12 | 2.15                     | 0.67              |
| 11:AE:158:PHE:HD1 | 11:AE:158:PHE:O   | 1.76                     | 0.67              |
| 13:AG:121:THR:O   | 13:AG:133:LYS:HB2 | 1.95                     | 0.67              |
| 22:AP:45:VAL:HG13 | 22:AP:65:ASN:ND2  | 2.09                     | 0.67              |
| 30:AX:38:GLN:HG3  | 30:AX:39:GLN:H    | 1.60                     | 0.67              |
| 33:BA:58:C:C2'    | 33:BA:59:A:H5''   | 2.24                     | 0.67              |
| 33:BA:298:A:N1    | 33:BA:299:G:C2    | 2.63                     | 0.67              |
| 33:BA:975:A:N7    | 33:BA:1357:A:H2   | 1.92                     | 0.67              |
| 38:BF:48:ALA:HB2  | 50:BR:66:LEU:O    | 1.95                     | 0.67              |
| 44:BL:79:ILE:HG13 | 44:BL:80:LEU:N    | 2.09                     | 0.67              |
| 2:C1:37:LYS:HE3   | 8:CB:2344:U:OP1   | 1.95                     | 0.67              |
| 5:C4:9:LYS:HD3    | 5:C4:9:LYS:H      | 1.60                     | 0.67              |
| 5:C4:26:ILE:HD12  | 5:C4:35:GLN:HG2   | 1.76                     | 0.67              |
| 8:CB:65:U:H1'     | 26:CT:74:ILE:HD12 | 1.76                     | 0.67              |
| 8:CB:277:G:H1'    | 8:CB:361:G:O6     | 1.95                     | 0.67              |
| 8:CB:332:A:O2'    | 8:CB:333:G:H5'    | 1.95                     | 0.67              |
| 8:CB:1668:A:N7    | 8:CB:1674:G:C6    | 2.62                     | 0.67              |
| 8:CB:2031:A:N1    | 8:CB:2498:C:H1'   | 2.10                     | 0.67              |
| 8:CB:2221:G:O2'   | 8:CB:2222:C:H5'   | 1.94                     | 0.67              |
| 8:CB:2532:G:H2'   | 8:CB:2533:U:C6    | 2.30                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2589:A:C2    | 8:CB:2590:A:C5    | 2.83                     | 0.67              |
| 9:CC:10:PRO:O     | 9:CC:202:ARG:NH1  | 2.28                     | 0.67              |
| 9:CC:197:ALA:C    | 9:CC:199:HIS:H    | 1.98                     | 0.67              |
| 9:CC:209:ALA:O    | 9:CC:213:ARG:CZ   | 2.43                     | 0.67              |
| 10:CD:60:VAL:O    | 10:CD:63:PRO:HD2  | 1.94                     | 0.67              |
| 11:CE:3:LEU:CD1   | 11:CE:194:LYS:HB3 | 2.25                     | 0.67              |
| 17:CK:110:GLU:O   | 17:CK:111:LYS:HG2 | 1.95                     | 0.67              |
| 19:CM:103:TYR:HE2 | 19:CM:113:ALA:HB2 | 1.58                     | 0.67              |
| 32:CZ:3:LYS:NZ    | 32:CZ:28:VAL:O    | 2.27                     | 0.67              |
| 32:CZ:39:LYS:HD2  | 32:CZ:61:ASN:OD1  | 1.95                     | 0.67              |
| 33:DA:298:A:N1    | 33:DA:299:G:C2    | 2.63                     | 0.67              |
| 33:DA:423:G:H2'   | 33:DA:424:G:O4'   | 1.95                     | 0.67              |
| 33:DA:484:G:H4'   | 33:DA:485:U:O5'   | 1.95                     | 0.67              |
| 38:DF:3:HIS:N     | 38:DF:92:THR:OG1  | 2.28                     | 0.67              |
| 40:DH:30:LYS:O    | 40:DH:33:VAL:HB   | 1.95                     | 0.67              |
| 48:DP:32:PHE:CD1  | 48:DP:32:PHE:O    | 2.48                     | 0.67              |
| 2:A1:42:VAL:H     | 2:A1:43:ARG:NH2   | 1.93                     | 0.67              |
| 8:AB:65:U:OP1     | 26:AT:76:ARG:HB3  | 1.95                     | 0.67              |
| 8:AB:814:C:C1'    | 8:AB:1225:G:H21   | 2.08                     | 0.67              |
| 8:AB:1450:G:H5''  | 8:AB:1450:G:C8    | 2.30                     | 0.67              |
| 8:AB:1451:C:H6    | 8:AB:1451:C:H5''  | 1.60                     | 0.67              |
| 8:AB:1663:G:H8    | 8:AB:1663:G:C5'   | 2.07                     | 0.67              |
| 8:AB:2179:C:H2'   | 8:AB:2180:U:H6    | 1.60                     | 0.67              |
| 8:AB:2487:G:H2'   | 8:AB:2488:G:H5'   | 1.77                     | 0.67              |
| 9:AC:10:PRO:O     | 9:AC:202:ARG:NH1  | 2.26                     | 0.67              |
| 13:AG:18:ILE:HD13 | 13:AG:18:ILE:H    | 1.60                     | 0.67              |
| 19:AM:58:LYS:O    | 19:AM:60:GLN:N    | 2.28                     | 0.67              |
| 22:AP:7:LEU:C     | 22:AP:9:GLN:H     | 1.98                     | 0.67              |
| 22:AP:8:GLU:HA    | 22:AP:11:GLN:CG   | 2.25                     | 0.67              |
| 22:AP:61:ARG:HH12 | 22:AP:63:ILE:HD11 | 1.57                     | 0.67              |
| 23:AQ:51:GLN:O    | 23:AQ:54:ARG:HG2  | 1.95                     | 0.67              |
| 33:BA:36:C:C2'    | 33:BA:37:U:H5'    | 2.25                     | 0.67              |
| 33:BA:1253:G:H2'  | 33:BA:1254:A:C8   | 2.30                     | 0.67              |
| 33:BA:1268:G:O5'  | 33:BA:1268:G:H8   | 1.76                     | 0.67              |
| 38:BF:49:TYR:HB2  | 38:BF:50:PRO:HD2  | 1.76                     | 0.67              |
| 39:BG:59:GLU:C    | 39:BG:61:PHE:H    | 1.99                     | 0.67              |
| 43:BK:22:ILE:HG21 | 43:BK:95:THR:HG21 | 1.76                     | 0.67              |
| 8:CB:135:U:H3     | 8:CB:144:A:N6     | 1.88                     | 0.67              |
| 8:CB:372:G:C2     | 8:CB:400:G:N7     | 2.63                     | 0.67              |
| 8:CB:604:G:H5''   | 8:CB:604:G:C8     | 2.28                     | 0.67              |
| 8:CB:906:U:H5'    | 8:CB:906:U:H6     | 1.59                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1232:G:H2'   | 8:CB:1233:C:H6    | 1.60                     | 0.67              |
| 8:CB:1831:G:C2    | 8:CB:1975:G:C2    | 2.83                     | 0.67              |
| 8:CB:2088:A:N7    | 8:CB:2089:C:C5    | 2.63                     | 0.67              |
| 8:CB:2575:C:H2'   | 8:CB:2578:G:O6    | 1.95                     | 0.67              |
| 8:CB:2700:A:C2    | 8:CB:2701:U:N3    | 2.63                     | 0.67              |
| 8:CB:2727:A:C5    | 8:CB:2728:U:C5    | 2.83                     | 0.67              |
| 8:CB:2803:G:H2'   | 8:CB:2804:U:H6    | 1.59                     | 0.67              |
| 8:CB:2861:U:H2'   | 8:CB:2862:G:H8    | 1.60                     | 0.67              |
| 9:CC:241:LYS:O    | 9:CC:243:PRO:HD3  | 1.95                     | 0.67              |
| 10:CD:49:GLN:O    | 10:CD:50:VAL:HG13 | 1.94                     | 0.67              |
| 16:CJ:7:LYS:HD3   | 16:CJ:7:LYS:H     | 1.58                     | 0.67              |
| 17:CK:98:ARG:HH22 | 33:DA:339:C:P     | 2.18                     | 0.67              |
| 19:CM:86:LYS:HG2  | 19:CM:87:GLY:N    | 2.05                     | 0.67              |
| 20:CN:52:ILE:HG21 | 20:CN:94:TYR:HD2  | 1.60                     | 0.67              |
| 22:CP:7:LEU:C     | 22:CP:9:GLN:H     | 1.97                     | 0.67              |
| 33:DA:413:G:H1'   | 33:DA:428:G:N2    | 2.10                     | 0.67              |
| 33:DA:519:C:N4    | 33:DA:520:A:C6    | 2.63                     | 0.67              |
| 33:DA:658:C:O2'   | 33:DA:659:U:H5'   | 1.93                     | 0.67              |
| 33:DA:668:G:H2'   | 33:DA:669:G:C5'   | 2.24                     | 0.67              |
| 33:DA:799:G:O6    | 33:DA:800:G:C2    | 2.48                     | 0.67              |
| 33:DA:803:G:H2'   | 33:DA:804:U:C6    | 2.30                     | 0.67              |
| 33:DA:974:A:H4'   | 33:DA:975:A:C5'   | 2.24                     | 0.67              |
| 33:DA:1494:G:C5   | 33:DA:1495:U:H5   | 2.13                     | 0.67              |
| 36:DD:146:GLU:HA  | 36:DD:149:LYS:HD2 | 1.77                     | 0.67              |
| 2:A1:12:SER:HB3   | 2:A1:50:GLU:CD    | 2.15                     | 0.67              |
| 7:AA:114:C:C2'    | 7:AA:115:A:H8     | 2.01                     | 0.67              |
| 8:AB:91:A:H3'     | 8:AB:91:A:C8      | 2.30                     | 0.67              |
| 8:AB:617:G:N7     | 55:AB:4335:HOH:O  | 2.27                     | 0.67              |
| 8:AB:814:C:OP1    | 24:AR:87:GLN:O    | 2.12                     | 0.67              |
| 8:AB:1030:C:H6    | 8:AB:1030:C:O5'   | 1.78                     | 0.67              |
| 8:AB:1162:G:O5'   | 8:AB:1162:G:H8    | 1.77                     | 0.67              |
| 8:AB:1866:A:C8    | 8:AB:1876:A:N6    | 2.63                     | 0.67              |
| 8:AB:1869:G:H2'   | 8:AB:1871:A:N7    | 2.10                     | 0.67              |
| 8:AB:2692:G:H1'   | 8:AB:2847:U:O2'   | 1.94                     | 0.67              |
| 8:AB:2731:G:C2    | 8:AB:2732:G:C6    | 2.82                     | 0.67              |
| 9:AC:51:ARG:NH1   | 9:AC:53:ILE:O     | 2.28                     | 0.67              |
| 9:AC:179:GLU:OE1  | 9:AC:267:VAL:HG22 | 1.95                     | 0.67              |
| 10:AD:50:VAL:O    | 10:AD:75:ALA:HB3  | 1.94                     | 0.67              |
| 16:AJ:78:THR:HG23 | 16:AJ:84:ILE:CG2  | 2.25                     | 0.67              |
| 19:AM:88:ASN:N    | 19:AM:88:ASN:ND2  | 2.43                     | 0.67              |
| 29:AW:22:VAL:HG12 | 29:AW:23:LYS:HG2  | 1.76                     | 0.67              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 32:AZ:37:CYS:H     | 32:AZ:42:PRO:HA   | 1.59                     | 0.67              |
| 33:BA:185:U:H6     | 33:BA:185:U:H3'   | 1.60                     | 0.67              |
| 33:BA:186:C:H5'    | 52:BT:72:ALA:HB1  | 1.77                     | 0.67              |
| 33:BA:201:G:H2'    | 33:BA:202:G:O4'   | 1.93                     | 0.67              |
| 33:BA:775:G:H22    | 33:BA:805:C:H42   | 1.41                     | 0.67              |
| 33:BA:781:A:H2     | 33:BA:1514:G:C4'  | 2.07                     | 0.67              |
| 33:BA:818:G:N2     | 33:BA:820:U:O2    | 2.27                     | 0.67              |
| 33:BA:927:G:OP2    | 33:BA:1503:A:C8   | 2.48                     | 0.67              |
| 36:BD:75:TYR:OH    | 36:BD:203:TYR:HB2 | 1.95                     | 0.67              |
| 1:C0:9:ARG:HH22    | 23:CQ:26:ALA:HB2  | 1.60                     | 0.67              |
| 5:C4:32:LYS:HE2    | 13:CG:172:GLU:HB3 | 1.77                     | 0.67              |
| 7:CA:70:C:O2'      | 7:CA:71:C:H5'     | 1.95                     | 0.67              |
| 7:CA:87:U:O2'      | 7:CA:88:C:H2'     | 1.95                     | 0.67              |
| 8:CB:197:A:N1      | 8:CB:198:C:C2     | 2.62                     | 0.67              |
| 8:CB:764:A:H5''    | 8:CB:764:A:C8     | 2.30                     | 0.67              |
| 8:CB:852:U:C4      | 8:CB:853:C:N4     | 2.63                     | 0.67              |
| 8:CB:1025:G:C8     | 8:CB:1135:C:C1'   | 2.78                     | 0.67              |
| 8:CB:1422:G:N2     | 8:CB:1423:G:C4    | 2.63                     | 0.67              |
| 8:CB:2456:C:O5'    | 8:CB:2456:C:H6    | 1.77                     | 0.67              |
| 11:CE:105:LEU:HD21 | 11:CE:177:PRO:HG3 | 1.77                     | 0.67              |
| 11:CE:142:ALA:CB   | 11:CE:145:ASP:HB2 | 2.25                     | 0.67              |
| 14:CH:9:VAL:O      | 14:CH:11:ASN:N    | 2.27                     | 0.67              |
| 16:CJ:44:TYR:CE1   | 16:CJ:48:VAL:O    | 2.48                     | 0.67              |
| 18:CL:109:LYS:HA   | 18:CL:126:ARG:HB3 | 1.76                     | 0.67              |
| 21:CO:25:ARG:CB    | 21:CO:94:ARG:HH12 | 2.06                     | 0.67              |
| 24:CR:64:VAL:CG2   | 24:CR:100:GLY:HA2 | 2.23                     | 0.67              |
| 33:DA:66:A:C2      | 33:DA:104:G:H1'   | 2.30                     | 0.67              |
| 33:DA:317:U:H2'    | 33:DA:318:G:H8    | 1.59                     | 0.67              |
| 33:DA:488:C:H2'    | 33:DA:489:C:H5'   | 1.75                     | 0.67              |
| 33:DA:540:G:H2'    | 33:DA:541:G:C8    | 2.30                     | 0.67              |
| 33:DA:577:G:H22    | 33:DA:763:G:N2    | 1.90                     | 0.67              |
| 33:DA:628:G:H2'    | 33:DA:629:A:O4'   | 1.95                     | 0.67              |
| 33:DA:793:U:H3'    | 33:DA:794:A:H5''  | 1.77                     | 0.67              |
| 33:DA:1231:G:N1    | 33:DA:1232:U:C2   | 2.63                     | 0.67              |
| 34:DB:130:LYS:HA   | 34:DB:133:ALA:CB  | 2.19                     | 0.67              |
| 35:DC:53:ARG:O     | 35:DC:54:ILE:HB   | 1.95                     | 0.67              |
| 35:DC:105:VAL:CG1  | 35:DC:108:PRO:HD3 | 2.19                     | 0.67              |
| 49:DQ:46:HIS:HE1   | 49:DQ:48:GLU:HB2  | 1.59                     | 0.67              |
| 51:DS:36:ARG:O     | 51:DS:69:LYS:HD2  | 1.95                     | 0.67              |
| 53:DU:34:ARG:NH2   | 53:DU:36:PHE:HA   | 2.10                     | 0.67              |
| 8:AB:792:A:N7      | 8:AB:2440:C:N1    | 2.43                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:855:G:H21    | 29:AW:23:LYS:CD    | 2.08                     | 0.66              |
| 8:AB:1232:G:H2'   | 8:AB:1233:C:H6     | 1.59                     | 0.66              |
| 8:AB:1575:C:H2'   | 8:AB:1576:U:C6     | 2.29                     | 0.66              |
| 8:AB:1673:G:N2    | 8:AB:1675:C:H5'    | 2.10                     | 0.66              |
| 8:AB:1796:U:H4'   | 9:AC:251:THR:H     | 1.59                     | 0.66              |
| 8:AB:2051:A:C6    | 8:AB:2614:A:N7     | 2.63                     | 0.66              |
| 8:AB:2677:G:C6    | 8:AB:2731:G:C2     | 2.83                     | 0.66              |
| 10:AD:64:GLU:O    | 10:AD:67:HIS:HB3   | 1.95                     | 0.66              |
| 10:AD:111:GLY:HA3 | 10:AD:194:PRO:HB2  | 1.76                     | 0.66              |
| 11:AE:190:ALA:HB3 | 11:AE:194:LYS:HE2  | 1.76                     | 0.66              |
| 13:AG:136:ASP:HB3 | 13:AG:139:VAL:CG2  | 2.23                     | 0.66              |
| 16:AJ:95:ARG:O    | 16:AJ:96:ARG:HB2   | 1.94                     | 0.66              |
| 16:AJ:99:ARG:HA   | 16:AJ:103:ILE:HG13 | 1.74                     | 0.66              |
| 17:AK:59:LYS:HD2  | 17:AK:89:ASN:O     | 1.95                     | 0.66              |
| 18:AL:75:ALA:HB3  | 18:AL:101:ILE:CD1  | 2.24                     | 0.66              |
| 22:AP:73:PHE:CD2  | 22:AP:75:THR:HG23  | 2.30                     | 0.66              |
| 30:AX:22:LEU:HD13 | 30:AX:26:PHE:CE1   | 2.29                     | 0.66              |
| 33:BA:238:A:C2'   | 33:BA:239:U:H5''   | 2.25                     | 0.66              |
| 33:BA:1227:A:H4'  | 33:BA:1228:C:OP1   | 1.95                     | 0.66              |
| 33:BA:1313:U:OP2  | 51:BS:5:LYS:HG2    | 1.95                     | 0.66              |
| 33:BA:1392:G:H2'  | 33:BA:1393:U:C6    | 2.30                     | 0.66              |
| 34:BB:79:VAL:HG23 | 34:BB:213:LEU:HD11 | 1.77                     | 0.66              |
| 36:BD:202:LEU:HG  | 36:BD:202:LEU:O    | 1.94                     | 0.66              |
| 45:BM:77:LYS:HA   | 45:BM:80:MET:HB3   | 1.77                     | 0.66              |
| 49:BQ:30:HIS:HE1  | 49:BQ:32:ILE:CG2   | 2.08                     | 0.66              |
| 8:CB:666:A:H2'    | 8:CB:667:U:H5''    | 1.75                     | 0.66              |
| 8:CB:810:U:C5     | 18:CL:37:GLY:HA3   | 2.30                     | 0.66              |
| 8:CB:945:A:H5'    | 8:CB:946:C:OP2     | 1.94                     | 0.66              |
| 8:CB:1233:C:H2'   | 8:CB:1234:U:H6     | 1.59                     | 0.66              |
| 8:CB:1771:C:N3    | 8:CB:1772:A:N7     | 2.44                     | 0.66              |
| 8:CB:2051:A:C6    | 8:CB:2614:A:N7     | 2.63                     | 0.66              |
| 8:CB:2276:G:C2'   | 8:CB:2277:G:H5'    | 2.25                     | 0.66              |
| 8:CB:2371:G:C2    | 8:CB:2372:U:C5     | 2.83                     | 0.66              |
| 13:CG:82:PHE:O    | 13:CG:133:LYS:HA   | 1.95                     | 0.66              |
| 20:CN:38:LEU:HB3  | 20:CN:39:PRO:CD    | 2.23                     | 0.66              |
| 20:CN:100:CYS:SG  | 20:CN:112:TYR:HE2  | 2.18                     | 0.66              |
| 23:CQ:46:TYR:CE1  | 24:CR:89:HIS:CE1   | 2.83                     | 0.66              |
| 29:CW:13:ARG:HD2  | 29:CW:14:ASP:N     | 2.10                     | 0.66              |
| 29:CW:20:LEU:O    | 29:CW:32:ALA:HA    | 1.95                     | 0.66              |
| 33:DA:493:A:H3'   | 33:DA:494:G:C8     | 2.30                     | 0.66              |
| 33:DA:894:G:H2'   | 33:DA:895:G:H8     | 1.58                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:DB:128:LEU:HD11 | 34:DB:132:GLU:CD   | 2.14                     | 0.66              |
| 52:DT:65:LEU:CD1   | 52:DT:66:ILE:HD13  | 2.23                     | 0.66              |
| 1:A0:6:LYS:HD3     | 1:A0:7:PRO:HD2     | 1.77                     | 0.66              |
| 4:A3:54:LEU:O      | 4:A3:56:LEU:N      | 2.28                     | 0.66              |
| 8:AB:839:U:H2'     | 8:AB:840:C:C6      | 2.31                     | 0.66              |
| 8:AB:1720:U:H2'    | 8:AB:1721:G:H5'    | 1.77                     | 0.66              |
| 8:AB:2445:G:N7     | 55:AB:4637:HOH:O   | 2.29                     | 0.66              |
| 8:AB:2575:C:H2'    | 8:AB:2578:G:O6     | 1.95                     | 0.66              |
| 8:AB:2791:G:H5''   | 8:AB:2791:G:H8     | 1.60                     | 0.66              |
| 9:AC:90:ILE:HD13   | 9:AC:102:TYR:HD2   | 1.61                     | 0.66              |
| 11:AE:52:VAL:HG11  | 55:AE:403:HOH:O    | 1.95                     | 0.66              |
| 18:AL:40:SER:CA    | 18:AL:41:ARG:HH21  | 2.07                     | 0.66              |
| 23:AQ:35:PHE:CB    | 23:AQ:39:ILE:HB    | 2.26                     | 0.66              |
| 25:AS:11:ARG:HH11  | 25:AS:11:ARG:CG    | 2.03                     | 0.66              |
| 25:AS:29:VAL:HG11  | 25:AS:69:LEU:HD23  | 1.77                     | 0.66              |
| 26:AT:30:ILE:HG22  | 26:AT:85:VAL:CG2   | 2.25                     | 0.66              |
| 33:BA:155:A:H5'    | 33:BA:155:A:C8     | 2.29                     | 0.66              |
| 33:BA:409:U:O5'    | 33:BA:409:U:C6     | 2.48                     | 0.66              |
| 33:BA:507:C:H3'    | 33:BA:508:U:H5''   | 1.77                     | 0.66              |
| 33:BA:587:G:C2     | 33:BA:755:G:N1     | 2.63                     | 0.66              |
| 33:BA:678:U:H3     | 33:BA:713:G:N2     | 1.93                     | 0.66              |
| 33:BA:775:G:N3     | 33:BA:776:G:C8     | 2.64                     | 0.66              |
| 33:BA:867:G:N2     | 33:BA:868:C:C2     | 2.63                     | 0.66              |
| 33:BA:977:A:C2     | 33:BA:1223:C:H2'   | 2.31                     | 0.66              |
| 37:BE:14:LEU:HG    | 37:BE:59:ILE:HD11  | 1.76                     | 0.66              |
| 4:C3:41:ARG:C      | 4:C3:43:LEU:H      | 1.99                     | 0.66              |
| 8:CB:309:A:C2      | 8:CB:330:A:C4      | 2.83                     | 0.66              |
| 8:CB:772:C:C2      | 8:CB:773:U:C5      | 2.83                     | 0.66              |
| 8:CB:789:A:H4'     | 55:CB:5148:HOH:O   | 1.94                     | 0.66              |
| 8:CB:1256:G:C5     | 8:CB:1257:C:C5     | 2.83                     | 0.66              |
| 8:CB:1764:C:C6     | 8:CB:1764:C:H3'    | 2.30                     | 0.66              |
| 8:CB:1814:G:H5'    | 8:CB:1814:G:C8     | 2.29                     | 0.66              |
| 8:CB:2577:A:O4'    | 8:CB:2612:C:N4     | 2.29                     | 0.66              |
| 8:CB:2722:G:H4'    | 20:CN:4:ARG:CB     | 2.25                     | 0.66              |
| 10:CD:36:GLN:HE21  | 10:CD:37:VAL:N     | 1.93                     | 0.66              |
| 10:CD:61:THR:N     | 10:CD:62:LYS:NZ    | 2.43                     | 0.66              |
| 11:CE:109:LEU:HD13 | 11:CE:113:VAL:HG12 | 1.78                     | 0.66              |
| 13:CG:2:ARG:O      | 13:CG:3:VAL:HB     | 1.94                     | 0.66              |
| 14:CH:31:VAL:H     | 14:CH:32:PRO:HD3   | 1.60                     | 0.66              |
| 22:CP:73:PHE:CD2   | 22:CP:75:THR:HG23  | 2.30                     | 0.66              |
| 23:CQ:23:TYR:HB3   | 23:CQ:27:ARG:HD3   | 1.78                     | 0.66              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 26:CT:29:THR:HA    | 26:CT:86:THR:HA   | 1.77                     | 0.66              |
| 30:CX:1:MET:N      | 30:CX:6:LEU:HB3   | 2.09                     | 0.66              |
| 33:DA:158:G:C5     | 33:DA:159:G:N7    | 2.62                     | 0.66              |
| 33:DA:275:G:N1     | 33:DA:276:G:C5    | 2.63                     | 0.66              |
| 33:DA:501:C:O2'    | 33:DA:502:A:H5'   | 1.95                     | 0.66              |
| 33:DA:539:A:H3'    | 33:DA:539:A:C8    | 2.30                     | 0.66              |
| 33:DA:727:G:N2     | 33:DA:731:G:C5    | 2.64                     | 0.66              |
| 33:DA:1160:G:H2'   | 33:DA:1161:C:C6   | 2.30                     | 0.66              |
| 33:DA:1221:G:H5''  | 33:DA:1321:U:O2   | 1.95                     | 0.66              |
| 33:DA:1239:A:H62   | 33:DA:1299:A:N6   | 1.90                     | 0.66              |
| 44:DL:43:LYS:HB2   | 44:DL:44:PRO:CD   | 2.24                     | 0.66              |
| 46:DN:50:LEU:H     | 46:DN:51:PRO:CD   | 2.06                     | 0.66              |
| 8:AB:142:A:H8      | 8:AB:142:A:OP2    | 1.78                     | 0.66              |
| 8:AB:612:G:C6      | 8:AB:614:A:N7     | 2.63                     | 0.66              |
| 8:AB:1274:A:N3     | 8:AB:1297:C:H1'   | 2.10                     | 0.66              |
| 8:AB:1809:A:C3'    | 8:AB:1810:A:H8    | 2.08                     | 0.66              |
| 8:AB:2134:A:N6     | 8:AB:2157:G:H21   | 1.93                     | 0.66              |
| 8:AB:2134:A:H61    | 8:AB:2157:G:H21   | 1.43                     | 0.66              |
| 8:AB:2396:G:H1     | 8:AB:2420:C:N4    | 1.94                     | 0.66              |
| 8:AB:2635:A:OP1    | 10:AD:77:ARG:HD3  | 1.95                     | 0.66              |
| 8:AB:2821:A:H2'    | 8:AB:2822:G:O4'   | 1.96                     | 0.66              |
| 13:AG:124:CYS:HB3  | 13:AG:129:GLU:O   | 1.95                     | 0.66              |
| 14:AH:73:ASN:ND2   | 14:AH:74:ALA:H    | 1.93                     | 0.66              |
| 15:AI:91:LYS:N     | 15:AI:92:PRO:HD3  | 2.09                     | 0.66              |
| 18:AL:19:LEU:O     | 18:AL:23:ILE:HD11 | 1.95                     | 0.66              |
| 20:AN:70:THR:HG21  | 20:AN:75:ILE:CG2  | 2.25                     | 0.66              |
| 26:AT:29:THR:HA    | 26:AT:86:THR:HA   | 1.77                     | 0.66              |
| 33:BA:31:G:N7      | 33:BA:306:A:H1'   | 2.10                     | 0.66              |
| 33:BA:377:G:H1     | 33:BA:386:C:N4    | 1.92                     | 0.66              |
| 33:BA:680:C:C5'    | 33:BA:680:C:H6    | 2.08                     | 0.66              |
| 33:BA:870:U:O5'    | 33:BA:870:U:H2'   | 1.95                     | 0.66              |
| 33:BA:1225:A:H2'   | 33:BA:1225:A:N3   | 2.08                     | 0.66              |
| 34:BB:185:ILE:HD12 | 34:BB:185:ILE:H   | 1.61                     | 0.66              |
| 8:CB:727:A:H2      | 9:CC:15:VAL:HG11  | 1.60                     | 0.66              |
| 8:CB:1092:C:H2'    | 8:CB:1093:G:H8    | 1.60                     | 0.66              |
| 8:CB:1869:G:H2'    | 8:CB:1871:A:N7    | 2.11                     | 0.66              |
| 8:CB:2285:C:C1'    | 8:CB:2288:A:N7    | 2.59                     | 0.66              |
| 8:CB:2746:U:H2'    | 8:CB:2747:G:H5'   | 1.77                     | 0.66              |
| 10:CD:111:GLY:HA3  | 10:CD:194:PRO:HB2 | 1.77                     | 0.66              |
| 16:CJ:100:VAL:O    | 16:CJ:101:ILE:HB  | 1.95                     | 0.66              |
| 20:CN:12:ARG:CD    | 20:CN:16:HIS:CD2  | 2.75                     | 0.66              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 21:CO:30:ARG:NH1   | 21:CO:97:PHE:HD2  | 1.91                     | 0.66              |
| 27:CU:78:LYS:HD2   | 27:CU:96:LYS:CG   | 2.16                     | 0.66              |
| 28:CV:53:LYS:HD3   | 28:CV:54:ALA:N    | 2.10                     | 0.66              |
| 29:CW:21:GLY:HA2   | 29:CW:25:PHE:HD1  | 1.57                     | 0.66              |
| 33:DA:101:A:H5''   | 33:DA:102:G:OP2   | 1.95                     | 0.66              |
| 33:DA:367:U:C5     | 33:DA:394:G:C2    | 2.83                     | 0.66              |
| 33:DA:372:C:N4     | 33:DA:389:A:H62   | 1.92                     | 0.66              |
| 33:DA:469:C:O2'    | 33:DA:470:C:H5'   | 1.96                     | 0.66              |
| 33:DA:490:C:H2'    | 33:DA:491:G:H8    | 1.60                     | 0.66              |
| 33:DA:664:G:H5'    | 33:DA:664:G:C8    | 2.28                     | 0.66              |
| 33:DA:824:G:O2'    | 33:DA:825:A:H5'   | 1.94                     | 0.66              |
| 33:DA:1261:A:H61   | 33:DA:1274:A:H1'  | 1.59                     | 0.66              |
| 33:DA:1261:A:N7    | 33:DA:1262:C:C5   | 2.63                     | 0.66              |
| 36:DD:50:TYR:O     | 36:DD:53:GLN:HG2  | 1.95                     | 0.66              |
| 1:A0:42:ILE:HG23   | 1:A0:46:GLY:H     | 1.60                     | 0.66              |
| 4:A3:30:HIS:HE1    | 8:AB:2418:A:N7    | 1.93                     | 0.66              |
| 5:A4:14:CYS:HB3    | 5:A4:25:VAL:HG12  | 1.77                     | 0.66              |
| 6:A5:153:ARG:CG    | 6:A5:154:ILE:N    | 2.59                     | 0.66              |
| 8:AB:498:G:C2      | 8:AB:499:U:C6     | 2.83                     | 0.66              |
| 8:AB:631:A:H8      | 8:AB:631:A:O5'    | 1.78                     | 0.66              |
| 8:AB:720:U:H2'     | 8:AB:721:A:C8     | 2.30                     | 0.66              |
| 8:AB:838:C:C2      | 8:AB:941:A:C6     | 2.84                     | 0.66              |
| 8:AB:2201:G:H5''   | 8:AB:2201:G:C8    | 2.31                     | 0.66              |
| 18:AL:37:GLY:HA3   | 18:AL:41:ARG:CG   | 2.26                     | 0.66              |
| 18:AL:77:ILE:HB    | 18:AL:110:VAL:HA  | 1.77                     | 0.66              |
| 19:AM:3:GLN:CD     | 19:AM:5:LYS:H     | 1.99                     | 0.66              |
| 23:AQ:40:LYS:CE    | 23:AQ:43:GLN:HE21 | 2.08                     | 0.66              |
| 29:AW:42:THR:CB    | 29:AW:66:VAL:H    | 2.08                     | 0.66              |
| 33:BA:101:A:H5''   | 33:BA:102:G:OP2   | 1.95                     | 0.66              |
| 33:BA:520:A:N1     | 33:BA:536:C:H1'   | 2.10                     | 0.66              |
| 33:BA:597:G:OP2    | 33:BA:598:U:H5    | 1.77                     | 0.66              |
| 33:BA:780:A:H8     | 33:BA:780:A:C5'   | 2.08                     | 0.66              |
| 33:BA:963:G:N2     | 42:BJ:56:HIS:CE1  | 2.64                     | 0.66              |
| 33:BA:1074:G:C3'   | 33:BA:1075:U:H5'' | 2.24                     | 0.66              |
| 33:BA:1191:A:H5'   | 33:BA:1191:A:C8   | 2.28                     | 0.66              |
| 34:BB:116:LEU:HD22 | 34:BB:140:LEU:HG  | 1.76                     | 0.66              |
| 44:BL:30:ARG:O     | 44:BL:57:THR:HG23 | 1.95                     | 0.66              |
| 44:BL:49:ARG:NH1   | 44:BL:88:ASP:HB3  | 2.11                     | 0.66              |
| 8:CB:323:C:H3'     | 8:CB:323:C:OP2    | 1.96                     | 0.66              |
| 8:CB:375:G:C8      | 8:CB:375:G:H5''   | 2.30                     | 0.66              |
| 8:CB:799:G:C6      | 8:CB:800:A:N6     | 2.63                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:941:A:N3      | 8:CB:941:A:H2'     | 2.11                     | 0.66              |
| 8:CB:1313:U:H4'    | 8:CB:1332:G:H4'    | 1.77                     | 0.66              |
| 8:CB:1341:G:C5     | 26:CT:84:TYR:CE2   | 2.84                     | 0.66              |
| 8:CB:1785:A:C8     | 8:CB:1787:A:N7     | 2.64                     | 0.66              |
| 8:CB:1853:A:N1     | 8:CB:2087:G:H1'    | 2.11                     | 0.66              |
| 8:CB:2735:G:H2'    | 8:CB:2736:A:C8     | 2.30                     | 0.66              |
| 8:CB:2885:G:C5     | 8:CB:2886:A:H8     | 2.12                     | 0.66              |
| 10:CD:121:THR:O    | 10:CD:128:ARG:CD   | 2.43                     | 0.66              |
| 13:CG:40:VAL:HG22  | 13:CG:51:PHE:CE2   | 2.30                     | 0.66              |
| 19:CM:126:ILE:O    | 19:CM:127:LYS:O    | 2.12                     | 0.66              |
| 25:CS:17:VAL:HG23  | 25:CS:76:VAL:HG11  | 1.77                     | 0.66              |
| 26:CT:73:ARG:O     | 26:CT:74:ILE:HD13  | 1.96                     | 0.66              |
| 27:CU:68:ASN:O     | 27:CU:69:VAL:HG13  | 1.96                     | 0.66              |
| 28:CV:59:GLU:HG2   | 28:CV:60:VAL:H     | 1.60                     | 0.66              |
| 33:DA:5:U:H1'      | 33:DA:6:G:C2       | 2.30                     | 0.66              |
| 33:DA:496:A:H2'    | 33:DA:497:G:N7     | 2.10                     | 0.66              |
| 33:DA:501:C:H1'    | 33:DA:549:C:O2'    | 1.95                     | 0.66              |
| 33:DA:668:G:O2'    | 47:DO:45:HIS:HD2   | 1.78                     | 0.66              |
| 33:DA:728:A:C2     | 33:DA:729:A:C5     | 2.83                     | 0.66              |
| 33:DA:1277:C:H2'   | 33:DA:1279:G:C8    | 2.28                     | 0.66              |
| 33:DA:1411:C:H2'   | 33:DA:1412:C:C6    | 2.30                     | 0.66              |
| 33:DA:1446:A:N6    | 33:DA:1447:A:N6    | 2.44                     | 0.66              |
| 33:DA:1496:C:H2'   | 33:DA:1497:G:O4'   | 1.94                     | 0.66              |
| 36:DD:56:GLU:OE2   | 36:DD:59:LYS:HD3   | 1.94                     | 0.66              |
| 36:DD:154:VAL:HG12 | 36:DD:158:LEU:HD11 | 1.77                     | 0.66              |
| 44:DL:85:ARG:NH1   | 44:DL:93:ARG:HB3   | 2.10                     | 0.66              |
| 47:DO:2:LEU:CG     | 47:DO:3:SER:H      | 2.08                     | 0.66              |
| 3:A2:18:PHE:HB3    | 8:AB:126:A:OP2     | 1.96                     | 0.66              |
| 7:AA:57:A:C5       | 12:AF:25:MET:HG2   | 2.30                     | 0.66              |
| 8:AB:1601:G:OP1    | 26:AT:62:VAL:HG11  | 1.96                     | 0.66              |
| 8:AB:1631:G:H3'    | 8:AB:1631:G:H8     | 1.59                     | 0.66              |
| 8:AB:1682:G:H5'    | 8:AB:1682:G:C8     | 2.30                     | 0.66              |
| 8:AB:1707:G:H8     | 8:AB:1707:G:H5'    | 1.60                     | 0.66              |
| 8:AB:2011:U:H5''   | 25:AS:11:ARG:HH22  | 1.59                     | 0.66              |
| 11:AE:60:TRP:CZ3   | 11:AE:67:ARG:HB2   | 2.30                     | 0.66              |
| 11:AE:84:THR:HG23  | 11:AE:85:PHE:N     | 2.10                     | 0.66              |
| 16:AJ:97:PRO:HA    | 16:AJ:101:ILE:HD11 | 1.76                     | 0.66              |
| 18:AL:78:ARG:HH21  | 18:AL:82:LEU:HG    | 1.61                     | 0.66              |
| 20:AN:54:LEU:O     | 20:AN:80:PHE:HD2   | 1.78                     | 0.66              |
| 21:AO:15:ARG:HA    | 21:AO:15:ARG:HE    | 1.59                     | 0.66              |
| 24:AR:4:VAL:HA     | 24:AR:12:HIS:HB3   | 1.78                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:AR:40:MET:SD    | 24:AR:54:VAL:CG2   | 2.79                     | 0.66              |
| 29:AW:23:LYS:HB2   | 29:AW:23:LYS:NZ    | 2.08                     | 0.66              |
| 33:BA:161:A:C2     | 33:BA:162:A:C4     | 2.84                     | 0.66              |
| 33:BA:434:U:H5''   | 33:BA:434:U:C6     | 2.28                     | 0.66              |
| 33:BA:453:G:H8     | 33:BA:453:G:OP2    | 1.79                     | 0.66              |
| 33:BA:962:C:C4     | 33:BA:963:G:N7     | 2.63                     | 0.66              |
| 33:BA:1431:A:C6    | 33:BA:1432:G:N1    | 2.64                     | 0.66              |
| 35:BC:53:ARG:HB3   | 35:BC:68:HIS:CG    | 2.31                     | 0.66              |
| 37:BE:75:LEU:HD21  | 37:BE:119:VAL:HG22 | 1.77                     | 0.66              |
| 48:BP:5:ARG:O      | 48:BP:19:VAL:HA    | 1.96                     | 0.66              |
| 53:BU:13:VAL:HG22  | 53:BU:14:ALA:N     | 2.11                     | 0.66              |
| 8:CB:784:G:N2      | 8:CB:792:A:C5      | 2.63                     | 0.66              |
| 8:CB:986:C:H2'     | 8:CB:987:C:H5'     | 1.77                     | 0.66              |
| 8:CB:1193:G:C2     | 8:CB:1194:A:C4     | 2.83                     | 0.66              |
| 8:CB:1566:A:N1     | 9:CC:213:ARG:CZ    | 2.58                     | 0.66              |
| 8:CB:1824:G:C1'    | 9:CC:247:TRP:HZ3   | 2.08                     | 0.66              |
| 8:CB:2394:C:OP2    | 18:CL:63:LYS:HD2   | 1.95                     | 0.66              |
| 8:CB:2439:A:N7     | 8:CB:2586:U:H4'    | 2.10                     | 0.66              |
| 8:CB:2740:A:N3     | 8:CB:2741:A:C8     | 2.64                     | 0.66              |
| 10:CD:109:VAL:HG12 | 10:CD:110:THR:H    | 1.60                     | 0.66              |
| 11:CE:84:THR:HG23  | 11:CE:85:PHE:N     | 2.11                     | 0.66              |
| 15:CI:85:ILE:HB    | 15:CI:87:SER:O     | 1.95                     | 0.66              |
| 17:CK:78:ARG:HH22  | 22:CP:102:ARG:HH12 | 1.44                     | 0.66              |
| 20:CN:11:ASN:O     | 20:CN:12:ARG:HB2   | 1.93                     | 0.66              |
| 21:CO:92:PHE:CG    | 21:CO:93:ASP:N     | 2.53                     | 0.66              |
| 26:CT:7:LEU:HD13   | 26:CT:7:LEU:H      | 1.61                     | 0.66              |
| 26:CT:8:LEU:HD11   | 30:CX:26:PHE:CZ    | 2.30                     | 0.66              |
| 33:DA:50:A:H62     | 33:DA:361:G:H4'    | 1.60                     | 0.66              |
| 33:DA:161:A:H2'    | 33:DA:162:A:H8     | 1.60                     | 0.66              |
| 33:DA:439:U:H2'    | 33:DA:440:C:C6     | 2.30                     | 0.66              |
| 33:DA:548:G:H5''   | 33:DA:548:G:C8     | 2.25                     | 0.66              |
| 33:DA:720:C:N4     | 33:DA:721:G:H22    | 1.91                     | 0.66              |
| 33:DA:854:U:H2'    | 33:DA:854:U:O2     | 1.95                     | 0.66              |
| 33:DA:909:A:C8     | 33:DA:910:C:C6     | 2.84                     | 0.66              |
| 33:DA:1068:G:C5'   | 33:DA:1068:G:C8    | 2.78                     | 0.66              |
| 33:DA:1477:U:O2'   | 33:DA:1478:U:H5'   | 1.96                     | 0.66              |
| 40:DH:74:ILE:HG13  | 40:DH:128:VAL:HG12 | 1.77                     | 0.66              |
| 47:DO:14:PHE:CE2   | 47:DO:83:ARG:NH2   | 2.63                     | 0.66              |
| 49:DQ:9:GLY:HA3    | 49:DQ:24:ILE:HG13  | 1.77                     | 0.66              |
| 5:A4:26:ILE:HG22   | 5:A4:34:LYS:CG     | 2.25                     | 0.66              |
| 8:AB:24:G:C1'      | 25:AS:77:ASP:HB3   | 2.26                     | 0.66              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:65:U:OP1     | 26:AT:76:ARG:CB   | 2.44                     | 0.66              |
| 8:AB:692:C:N4     | 8:AB:770:G:N1     | 2.43                     | 0.66              |
| 8:AB:870:U:H4'    | 19:AM:8:LYS:HB2   | 1.77                     | 0.66              |
| 8:AB:1352:U:H1'   | 8:AB:1570:A:H2    | 1.58                     | 0.66              |
| 8:AB:1361:G:C6    | 8:AB:1362:C:N4    | 2.64                     | 0.66              |
| 8:AB:1719:G:C5    | 8:AB:1720:U:C5    | 2.84                     | 0.66              |
| 8:AB:1771:C:C2    | 8:AB:1772:A:N7    | 2.64                     | 0.66              |
| 8:AB:1912:A:C8    | 8:AB:1918:A:C2    | 2.83                     | 0.66              |
| 8:AB:1970:A:H8    | 8:AB:1970:A:H5''  | 1.61                     | 0.66              |
| 8:AB:2023:C:H5''  | 8:AB:2023:C:H6    | 1.60                     | 0.66              |
| 8:AB:2276:G:O2'   | 8:AB:2277:G:H5'   | 1.95                     | 0.66              |
| 8:AB:2430:A:H2'   | 8:AB:2430:A:N3    | 2.10                     | 0.66              |
| 8:AB:2543:G:C6    | 8:AB:2765:A:C6    | 2.84                     | 0.66              |
| 9:AC:209:ALA:O    | 9:AC:213:ARG:CZ   | 2.43                     | 0.66              |
| 10:AD:138:LEU:N   | 10:AD:138:LEU:CD2 | 2.58                     | 0.66              |
| 15:AI:54:ILE:HG23 | 15:AI:70:THR:HG23 | 1.76                     | 0.66              |
| 16:AJ:62:VAL:O    | 16:AJ:64:VAL:HG23 | 1.94                     | 0.66              |
| 20:AN:57:THR:HG23 | 20:AN:62:ASN:ND2  | 2.10                     | 0.66              |
| 24:AR:23:GLU:HA   | 24:AR:96:VAL:HG21 | 1.78                     | 0.66              |
| 26:AT:15:HIS:H    | 26:AT:31:VAL:HG23 | 1.61                     | 0.66              |
| 32:AZ:39:LYS:HD2  | 32:AZ:61:ASN:OD1  | 1.96                     | 0.66              |
| 33:BA:955:U:H2'   | 33:BA:956:U:C6    | 2.30                     | 0.66              |
| 33:BA:1113:C:H2'  | 33:BA:1114:C:H6   | 1.60                     | 0.66              |
| 33:BA:1528:U:H5'  | 33:BA:1528:U:N1   | 2.10                     | 0.66              |
| 35:BC:63:ILE:HD11 | 35:BC:96:VAL:O    | 1.96                     | 0.66              |
| 41:BI:56:MET:SD   | 41:BI:57:VAL:HG23 | 2.35                     | 0.66              |
| 44:BL:62:VAL:HG22 | 44:BL:63:THR:H    | 1.60                     | 0.66              |
| 47:BO:2:LEU:HD12  | 47:BO:34:GLN:OE1  | 1.95                     | 0.66              |
| 52:BT:6:ALA:O     | 52:BT:9:ARG:HB3   | 1.96                     | 0.66              |
| 1:C0:9:ARG:NH2    | 23:CQ:26:ALA:HB2  | 2.10                     | 0.66              |
| 1:C0:48:TYR:OH    | 8:CB:2884:U:C2    | 2.48                     | 0.66              |
| 8:CB:8:C:H42      | 8:CB:2895:G:H1    | 1.43                     | 0.66              |
| 8:CB:394:C:O2     | 8:CB:395:U:C2     | 2.48                     | 0.66              |
| 8:CB:907:G:C5     | 8:CB:908:C:C5     | 2.84                     | 0.66              |
| 8:CB:1640:A:H2'   | 8:CB:1641:A:C8    | 2.30                     | 0.66              |
| 8:CB:1710:G:H2'   | 8:CB:1711:A:C8    | 2.31                     | 0.66              |
| 8:CB:2361:G:C2'   | 8:CB:2362:C:H5'   | 2.25                     | 0.66              |
| 8:CB:2561:U:O3'   | 17:CK:40:LYS:HE2  | 1.96                     | 0.66              |
| 8:CB:2597:G:H2'   | 8:CB:2598:A:C8    | 2.30                     | 0.66              |
| 8:CB:2621:G:O2'   | 10:CD:164:GLN:CB  | 2.44                     | 0.66              |
| 9:CC:155:ARG:HD3  | 9:CC:157:ALA:H    | 1.61                     | 0.66              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:CC:235:GLU:HG2  | 9:CC:236:GLY:H    | 1.58                     | 0.66              |
| 10:CD:50:VAL:HB   | 10:CD:75:ALA:CB   | 2.26                     | 0.66              |
| 11:CE:28:VAL:O    | 11:CE:32:VAL:HG23 | 1.94                     | 0.66              |
| 11:CE:46:GLN:CD   | 11:CE:86:ALA:HB1  | 2.16                     | 0.66              |
| 13:CG:162:ARG:HG3 | 13:CG:166:GLU:HB2 | 1.76                     | 0.66              |
| 21:CO:65:THR:HB   | 21:CO:70:ALA:CB   | 2.18                     | 0.66              |
| 24:CR:64:VAL:HA   | 24:CR:101:ILE:N   | 2.09                     | 0.66              |
| 32:CZ:49:ARG:C    | 32:CZ:51:VAL:N    | 2.48                     | 0.66              |
| 33:DA:729:A:H2'   | 33:DA:730:G:O4'   | 1.95                     | 0.66              |
| 33:DA:918:A:C6    | 33:DA:919:A:C5    | 2.84                     | 0.66              |
| 36:DD:16:THR:HG22 | 36:DD:17:ASP:H    | 1.59                     | 0.66              |
| 36:DD:90:LEU:HD21 | 36:DD:196:GLU:HB2 | 1.78                     | 0.66              |
| 36:DD:142:VAL:CG2 | 36:DD:179:GLY:HA3 | 2.25                     | 0.66              |
| 41:DI:56:MET:CG   | 41:DI:57:VAL:H    | 2.07                     | 0.66              |
| 2:A1:24:LYS:HD3   | 2:A1:24:LYS:H     | 1.61                     | 0.66              |
| 4:A3:42:HIS:CG    | 4:A3:43:LEU:N     | 2.64                     | 0.66              |
| 5:A4:23:ILE:H     | 5:A4:37:GLN:HG2   | 1.61                     | 0.66              |
| 8:AB:79:C:HO2'    | 8:AB:346:A:H8     | 1.42                     | 0.66              |
| 8:AB:124:G:C2'    | 8:AB:125:A:H5''   | 2.25                     | 0.66              |
| 8:AB:287:G:H2'    | 8:AB:288:U:C6     | 2.31                     | 0.66              |
| 8:AB:353:C:C6     | 8:AB:353:C:H5''   | 2.31                     | 0.66              |
| 8:AB:1026:G:OP2   | 8:AB:1134:A:H1'   | 1.96                     | 0.66              |
| 8:AB:1238:G:C2    | 8:AB:1239:G:C8    | 2.83                     | 0.66              |
| 8:AB:1319:C:H1'   | 8:AB:1334:G:N2    | 2.10                     | 0.66              |
| 8:AB:1378:A:C8    | 8:AB:1380:G:O6    | 2.48                     | 0.66              |
| 8:AB:1595:C:H2'   | 8:AB:1596:A:C8    | 2.31                     | 0.66              |
| 8:AB:1710:G:H2'   | 8:AB:1711:A:C8    | 2.31                     | 0.66              |
| 8:AB:2393:U:P     | 18:AL:62:PRO:HG3  | 2.36                     | 0.66              |
| 8:AB:2478:A:H5''  | 8:AB:2478:A:H8    | 1.60                     | 0.66              |
| 8:AB:2761:A:C5    | 8:AB:2762:C:C5    | 2.83                     | 0.66              |
| 12:AF:121:PHE:CE1 | 12:AF:127:TYR:HB2 | 2.31                     | 0.66              |
| 21:AO:55:GLU:HG3  | 21:AO:56:LYS:H    | 1.61                     | 0.66              |
| 23:AQ:51:GLN:HG3  | 23:AQ:54:ARG:HE   | 1.60                     | 0.66              |
| 23:AQ:83:LYS:HA   | 23:AQ:89:ILE:CD1  | 2.16                     | 0.66              |
| 23:AQ:90:ASP:O    | 23:AQ:91:ARG:HD2  | 1.96                     | 0.66              |
| 25:AS:7:HIS:CD2   | 25:AS:10:ALA:HB2  | 2.31                     | 0.66              |
| 31:AY:7:THR:HA    | 31:AY:34:THR:HB   | 1.77                     | 0.66              |
| 32:AZ:6:HIS:ND1   | 32:AZ:7:PRO:HD2   | 2.11                     | 0.66              |
| 33:BA:357:G:N3    | 33:BA:358:U:H5    | 1.94                     | 0.66              |
| 33:BA:742:G:H2'   | 33:BA:743:A:O4'   | 1.96                     | 0.66              |
| 33:BA:1185:G:H5'  | 33:BA:1185:G:C8   | 2.29                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BB:206:ILE:HA   | 34:BB:209:VAL:HG22 | 1.76                     | 0.66              |
| 36:BD:101:VAL:HG12 | 36:BD:113:ALA:HB1  | 1.77                     | 0.66              |
| 7:CA:105:G:N3      | 7:CA:106:G:C8      | 2.63                     | 0.66              |
| 8:CB:750:A:H2'     | 8:CB:751:A:H5''    | 1.78                     | 0.66              |
| 8:CB:800:A:OP1     | 55:CB:5155:HOH:O   | 2.13                     | 0.66              |
| 8:CB:1232:G:C5     | 8:CB:1233:C:C5     | 2.84                     | 0.66              |
| 8:CB:1319:C:H1'    | 8:CB:1334:G:N2     | 2.11                     | 0.66              |
| 8:CB:1376:C:H2'    | 8:CB:1376:C:O2     | 1.95                     | 0.66              |
| 8:CB:1522:A:H1'    | 8:CB:1524:G:C5     | 2.31                     | 0.66              |
| 8:CB:2049:G:OP2    | 55:CB:5368:HOH:O   | 2.14                     | 0.66              |
| 8:CB:2082:A:C6     | 8:CB:2239:G:C2     | 2.84                     | 0.66              |
| 8:CB:2090:A:H4'    | 32:CZ:49:ARG:NH1   | 2.09                     | 0.66              |
| 8:CB:2560:A:C4     | 8:CB:2561:U:C6     | 2.84                     | 0.66              |
| 9:CC:90:ILE:HD13   | 9:CC:102:TYR:CD2   | 2.31                     | 0.66              |
| 10:CD:170:VAL:O    | 10:CD:171:THR:HB   | 1.94                     | 0.66              |
| 16:CJ:84:ILE:HD12  | 16:CJ:84:ILE:N     | 2.05                     | 0.66              |
| 20:CN:38:LEU:HB2   | 20:CN:109:PRO:HB2  | 1.78                     | 0.66              |
| 22:CP:32:VAL:O     | 22:CP:33:GLU:HB3   | 1.93                     | 0.66              |
| 27:CU:93:ARG:HB3   | 27:CU:101:THR:HG22 | 1.77                     | 0.66              |
| 31:CY:53:MET:N     | 31:CY:53:MET:SD    | 2.64                     | 0.66              |
| 32:CZ:1:MET:C      | 32:CZ:9:TYR:CE1    | 2.69                     | 0.66              |
| 33:DA:448:A:N6     | 33:DA:486:U:H3     | 1.88                     | 0.66              |
| 33:DA:664:G:C5'    | 33:DA:664:G:C8     | 2.76                     | 0.66              |
| 33:DA:864:A:C2     | 33:DA:917:G:N3     | 2.63                     | 0.66              |
| 33:DA:905:U:H6     | 33:DA:905:U:H5''   | 1.61                     | 0.66              |
| 33:DA:1000:A:H61   | 33:DA:1040:U:H3    | 1.43                     | 0.66              |
| 33:DA:1533:C:H6    | 33:DA:1533:C:H3'   | 1.61                     | 0.66              |
| 37:DE:89:THR:CG2   | 37:DE:90:GLY:N     | 2.58                     | 0.66              |
| 38:DF:43:GLY:HA2   | 38:DF:58:HIS:NE2   | 2.11                     | 0.66              |
| 41:DI:90:ASP:O     | 41:DI:93:LEU:HB2   | 1.96                     | 0.66              |
| 44:DL:2:THR:HB     | 44:DL:5:GLN:HB2    | 1.76                     | 0.66              |
| 8:AB:311:A:H61     | 8:AB:328:U:H2'     | 1.61                     | 0.66              |
| 8:AB:545:U:H2'     | 8:AB:547:A:OP1     | 1.95                     | 0.66              |
| 8:AB:800:A:N7      | 8:AB:802:A:O4'     | 2.29                     | 0.66              |
| 8:AB:1029:A:C8     | 8:AB:1029:A:H3'    | 2.31                     | 0.66              |
| 8:AB:1256:G:C5     | 8:AB:1257:C:C5     | 2.81                     | 0.66              |
| 8:AB:1443:U:H2'    | 8:AB:1444:G:H8     | 1.61                     | 0.66              |
| 8:AB:1831:G:C5     | 8:AB:1832:C:C5     | 2.83                     | 0.66              |
| 8:AB:2393:U:H4'    | 18:AL:62:PRO:CA    | 2.20                     | 0.66              |
| 8:AB:2562:U:H2'    | 8:AB:2563:U:H5'    | 1.78                     | 0.66              |
| 8:AB:2584:U:H3'    | 8:AB:2584:U:H6     | 1.60                     | 0.66              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2749:A:C4    | 8:AB:2750:A:C8     | 2.84                     | 0.66              |
| 13:AG:110:HIS:HD2 | 13:AG:111:PRO:O    | 1.78                     | 0.66              |
| 18:AL:109:LYS:HA  | 18:AL:126:ARG:HB3  | 1.77                     | 0.66              |
| 22:AP:61:ARG:HB3  | 22:AP:61:ARG:CZ    | 2.26                     | 0.66              |
| 25:AS:28:LYS:HA   | 25:AS:31:GLN:HB2   | 1.76                     | 0.66              |
| 33:BA:357:G:C2    | 33:BA:358:U:C5     | 2.84                     | 0.66              |
| 33:BA:509:A:N6    | 33:BA:510:A:N1     | 2.44                     | 0.66              |
| 33:BA:878:A:C5    | 33:BA:879:C:H5     | 2.13                     | 0.66              |
| 33:BA:1051:C:H2'  | 33:BA:1052:U:H6    | 1.60                     | 0.66              |
| 33:BA:1183:U:H3'  | 33:BA:1184:G:H5''  | 1.76                     | 0.66              |
| 40:BH:103:VAL:O   | 40:BH:105:THR:HG23 | 1.95                     | 0.66              |
| 52:BT:70:LYS:HB3  | 52:BT:73:ARG:CZ    | 2.26                     | 0.66              |
| 1:C0:48:TYR:CE2   | 1:C0:49:ARG:HB2    | 2.30                     | 0.66              |
| 8:CB:85:G:H5'     | 27:CU:28:LEU:CB    | 2.26                     | 0.66              |
| 8:CB:565:C:C2'    | 8:CB:566:U:H5'     | 2.24                     | 0.66              |
| 8:CB:1298:C:H42   | 8:CB:1642:G:H1     | 0.78                     | 0.66              |
| 8:CB:1323:C:OP1   | 25:CS:84:ARG:NH2   | 2.29                     | 0.66              |
| 8:CB:1364:G:H1'   | 8:CB:1368:G:H22    | 1.61                     | 0.66              |
| 8:CB:2137:U:H6    | 8:CB:2137:U:H3'    | 1.60                     | 0.66              |
| 8:CB:2241:A:N1    | 8:CB:2242:G:C5     | 2.63                     | 0.66              |
| 8:CB:2453:A:H3'   | 8:CB:2453:A:C8     | 2.29                     | 0.66              |
| 17:CK:98:ARG:HG2  | 17:CK:99:ILE:N     | 2.10                     | 0.66              |
| 19:CM:67:VAL:HG22 | 19:CM:100:LYS:HB3  | 1.78                     | 0.66              |
| 20:CN:4:ARG:NE    | 20:CN:4:ARG:O      | 2.26                     | 0.66              |
| 33:DA:713:G:N2    | 33:DA:714:G:N1     | 2.44                     | 0.66              |
| 33:DA:728:A:N7    | 47:DO:53:ARG:HD2   | 2.11                     | 0.66              |
| 43:DK:30:ILE:HG22 | 43:DK:45:THR:CB    | 2.25                     | 0.66              |
| 52:DT:2:ASN:ND2   | 52:DT:3:ILE:H      | 1.93                     | 0.66              |
| 8:AB:1:G:H2'      | 8:AB:2:G:C8        | 2.31                     | 0.66              |
| 8:AB:192:C:H2'    | 8:AB:193:U:H5'     | 1.77                     | 0.66              |
| 8:AB:197:A:H62    | 8:AB:2430:A:H2'    | 1.61                     | 0.66              |
| 8:AB:745:G:N2     | 8:AB:753:A:N6      | 2.44                     | 0.66              |
| 8:AB:1232:G:O2'   | 8:AB:1233:C:H5'    | 1.94                     | 0.66              |
| 8:AB:2358:A:H8    | 8:AB:2358:A:C5'    | 2.08                     | 0.66              |
| 8:AB:2396:G:H5''  | 8:AB:2396:G:C8     | 2.31                     | 0.66              |
| 8:AB:2439:A:H4'   | 8:AB:2440:C:O5'    | 1.95                     | 0.66              |
| 8:AB:2455:G:C2    | 8:AB:2456:C:N3     | 2.64                     | 0.66              |
| 8:AB:2549:G:C5    | 55:AB:4659:HOH:O   | 2.49                     | 0.66              |
| 8:AB:2721:A:C4    | 8:AB:2722:G:C8     | 2.84                     | 0.66              |
| 9:AC:53:ILE:HG22  | 9:AC:54:GLY:H      | 1.60                     | 0.66              |
| 10:AD:189:VAL:O   | 10:AD:190:LYS:HB2  | 1.95                     | 0.66              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AE:48:THR:HG22  | 11:AE:49:ARG:H     | 1.60                     | 0.66              |
| 11:AE:164:LEU:HD12 | 11:AE:165:HIS:N    | 2.11                     | 0.66              |
| 25:AS:83:LYS:HB2   | 25:AS:83:LYS:NZ    | 2.11                     | 0.66              |
| 26:AT:7:LEU:HA     | 26:AT:10:VAL:HG13  | 1.77                     | 0.66              |
| 29:AW:20:LEU:O     | 29:AW:32:ALA:HA    | 1.96                     | 0.66              |
| 33:BA:1513:A:H2'   | 33:BA:1513:A:N3    | 2.11                     | 0.66              |
| 33:BA:1521:C:H2'   | 33:BA:1522:U:O4'   | 1.95                     | 0.66              |
| 36:BD:100:VAL:HG11 | 36:BD:136:VAL:HG11 | 1.78                     | 0.66              |
| 43:BK:12:ARG:HH11  | 43:BK:12:ARG:CG    | 2.01                     | 0.66              |
| 1:C0:29:VAL:HG21   | 1:C0:34:GLY:CA     | 2.26                     | 0.66              |
| 8:CB:126:A:C5      | 8:CB:127:A:C2      | 2.83                     | 0.66              |
| 8:CB:784:G:O4'     | 9:CC:225:ASN:OD1   | 2.13                     | 0.66              |
| 8:CB:801:G:OP1     | 11:CE:51:GLU:HB2   | 1.95                     | 0.66              |
| 8:CB:843:G:C6      | 8:CB:844:A:C5      | 2.84                     | 0.66              |
| 8:CB:1451:C:H6     | 8:CB:1451:C:H5''   | 1.61                     | 0.66              |
| 8:CB:2144:G:H3'    | 8:CB:2145:C:H5'    | 1.78                     | 0.66              |
| 8:CB:2669:G:H2'    | 8:CB:2670:A:H8     | 1.61                     | 0.66              |
| 9:CC:30:ALA:H      | 9:CC:31:PRO:HD2    | 1.61                     | 0.66              |
| 9:CC:30:ALA:N      | 9:CC:31:PRO:HD2    | 2.11                     | 0.66              |
| 10:CD:89:GLU:CG    | 10:CD:93:GLY:HA3   | 2.26                     | 0.66              |
| 10:CD:121:THR:O    | 10:CD:128:ARG:NE   | 2.29                     | 0.66              |
| 12:CF:157:THR:HG21 | 12:CF:168:LEU:HD13 | 1.77                     | 0.66              |
| 15:CI:32:VAL:HG22  | 15:CI:60:VAL:HG21  | 1.78                     | 0.66              |
| 18:CL:22:GLY:O     | 18:CL:23:ILE:HD13  | 1.96                     | 0.66              |
| 22:CP:25:VAL:HG12  | 22:CP:27:VAL:HG12  | 1.78                     | 0.66              |
| 25:CS:31:GLN:HG2   | 25:CS:31:GLN:O     | 1.96                     | 0.66              |
| 33:DA:101:A:C5     | 33:DA:102:G:C8     | 2.84                     | 0.66              |
| 33:DA:766:A:C4     | 33:DA:814:A:C2     | 2.84                     | 0.66              |
| 33:DA:892:A:H2'    | 33:DA:893:C:H5'    | 1.78                     | 0.66              |
| 33:DA:1281:C:H5'   | 33:DA:1282:C:H5    | 1.59                     | 0.66              |
| 33:DA:1295:U:C2    | 33:DA:1296:C:H5    | 2.13                     | 0.66              |
| 33:DA:1422:G:H2'   | 33:DA:1423:G:H8    | 1.60                     | 0.66              |
| 35:DC:63:ILE:CG2   | 35:DC:98:ALA:HA    | 2.26                     | 0.66              |
| 37:DE:61:LYS:O     | 37:DE:65:LYS:HG3   | 1.96                     | 0.66              |
| 37:DE:64:GLU:HG2   | 37:DE:68:ARG:NE    | 2.10                     | 0.66              |
| 38:DF:11:HIS:ND1   | 38:DF:12:PRO:HD2   | 2.11                     | 0.66              |
| 39:DG:148:LYS:HG3  | 39:DG:151:ALA:HB2  | 1.77                     | 0.66              |
| 42:DJ:5:ARG:HD2    | 42:DJ:79:PRO:HG2   | 1.77                     | 0.66              |
| 4:A3:48:MET:C      | 4:A3:50:SER:N      | 2.49                     | 0.66              |
| 8:AB:530:G:H22     | 8:AB:2023:C:H5     | 1.44                     | 0.66              |
| 8:AB:1162:G:C8     | 8:AB:1162:G:H3'    | 2.30                     | 0.66              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:1342:A:N1     | 8:AB:1345:C:C2    | 2.64                     | 0.66              |
| 8:AB:2048:G:N1     | 8:AB:2621:G:C2    | 2.64                     | 0.66              |
| 8:AB:2485:G:H2'    | 8:AB:2486:C:H5'   | 1.77                     | 0.66              |
| 19:AM:50:ARG:CZ    | 19:AM:50:ARG:CA   | 2.66                     | 0.66              |
| 22:AP:23:ASP:OD2   | 22:AP:93:LYS:HG2  | 1.95                     | 0.66              |
| 23:AQ:109:VAL:HG12 | 23:AQ:113:LYS:NZ  | 2.11                     | 0.66              |
| 24:AR:2:TYR:CE1    | 24:AR:46:GLU:HG3  | 2.31                     | 0.66              |
| 24:AR:24:LYS:HZ1   | 24:AR:66:HIS:HE1  | 1.43                     | 0.66              |
| 27:AU:39:ASN:HB2   | 27:AU:61:GLU:O    | 1.95                     | 0.66              |
| 31:AY:16:LEU:O     | 31:AY:18:LYS:N    | 2.25                     | 0.66              |
| 33:BA:19:A:H1'     | 33:BA:864:A:H1'   | 1.78                     | 0.66              |
| 33:BA:254:G:OP1    | 49:BQ:67:SER:HB3  | 1.96                     | 0.66              |
| 33:BA:468:A:C8     | 33:BA:469:C:C6    | 2.84                     | 0.66              |
| 33:BA:492:C:C4     | 33:BA:493:A:C2    | 2.83                     | 0.66              |
| 33:BA:570:G:H1     | 33:BA:865:A:N6    | 1.93                     | 0.66              |
| 33:BA:604:G:C6     | 33:BA:605:U:N3    | 2.64                     | 0.66              |
| 33:BA:1017:U:H2'   | 33:BA:1018:G:H8   | 1.60                     | 0.66              |
| 33:BA:1203:C:OP1   | 46:BN:1:ALA:HB3   | 1.96                     | 0.66              |
| 43:BK:96:ILE:O     | 43:BK:99:LEU:HB2  | 1.96                     | 0.66              |
| 43:BK:122:PRO:HG2  | 53:BU:34:ARG:HA   | 1.76                     | 0.66              |
| 8:CB:137:U:H6      | 8:CB:137:U:O5'    | 1.79                     | 0.66              |
| 8:CB:150:U:H2'     | 8:CB:151:C:O4'    | 1.96                     | 0.66              |
| 8:CB:465:G:C2      | 8:CB:466:A:C6     | 2.83                     | 0.66              |
| 8:CB:496:G:H5''    | 8:CB:496:G:C8     | 2.31                     | 0.66              |
| 8:CB:533:G:H5''    | 8:CB:533:G:C8     | 2.31                     | 0.66              |
| 8:CB:2314:A:H2'    | 8:CB:2315:G:C8    | 2.30                     | 0.66              |
| 8:CB:2502:G:H5'    | 8:CB:2503:A:H5''  | 1.77                     | 0.66              |
| 8:CB:2863:C:O2'    | 8:CB:2864:G:H5'   | 1.95                     | 0.66              |
| 9:CC:92:LEU:O      | 9:CC:93:VAL:HB    | 1.95                     | 0.66              |
| 11:CE:120:VAL:H    | 11:CE:189:THR:CG2 | 2.08                     | 0.66              |
| 14:CH:5:LEU:HD13   | 14:CH:35:LYS:HE3  | 1.78                     | 0.66              |
| 16:CJ:77:HIS:NE2   | 16:CJ:84:ILE:HD13 | 2.11                     | 0.66              |
| 20:CN:3:HIS:CB     | 20:CN:4:ARG:CZ    | 2.73                     | 0.66              |
| 24:CR:42:ALA:HB1   | 24:CR:53:PHE:CD1  | 2.31                     | 0.66              |
| 29:CW:38:ARG:HG2   | 29:CW:39:GLN:N    | 2.11                     | 0.66              |
| 33:DA:177:G:OP1    | 52:DT:59:ARG:HD3  | 1.95                     | 0.66              |
| 33:DA:406:G:N2     | 33:DA:437:U:O2    | 2.28                     | 0.66              |
| 33:DA:643:C:H2'    | 33:DA:644:U:H6    | 1.61                     | 0.66              |
| 33:DA:903:G:O2'    | 33:DA:904:U:H5'   | 1.96                     | 0.66              |
| 33:DA:977:A:H1'    | 33:DA:982:U:O4    | 1.96                     | 0.66              |
| 33:DA:1374:A:H1'   | 39:DG:30:MET:CE   | 2.26                     | 0.66              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1514:G:H1   | 33:DA:1521:C:H42  | 1.44                     | 0.66              |
| 35:DC:39:ARG:HE   | 35:DC:56:ILE:HD11 | 1.59                     | 0.66              |
| 53:DU:36:PHE:O    | 53:DU:38:GLU:N    | 2.28                     | 0.66              |
| 7:AA:75:G:H2'     | 7:AA:76:G:H8      | 1.61                     | 0.65              |
| 7:AA:105:G:N3     | 7:AA:106:G:C8     | 2.64                     | 0.65              |
| 8:AB:144:A:H5''   | 8:AB:144:A:C8     | 2.30                     | 0.65              |
| 8:AB:532:A:H8     | 8:AB:2021:C:C2    | 2.14                     | 0.65              |
| 8:AB:653:U:OP1    | 8:AB:653:U:H4'    | 1.96                     | 0.65              |
| 8:AB:738:G:C6     | 8:AB:739:A:C6     | 2.84                     | 0.65              |
| 8:AB:1366:A:H2'   | 8:AB:1367:A:H5'   | 1.77                     | 0.65              |
| 8:AB:1652:A:C2    | 8:AB:2006:C:N3    | 2.64                     | 0.65              |
| 8:AB:2250:G:H8    | 8:AB:2250:G:O5'   | 1.79                     | 0.65              |
| 8:AB:2766:A:N3    | 8:AB:2766:A:H2'   | 2.11                     | 0.65              |
| 10:AD:36:GLN:HE21 | 10:AD:37:VAL:N    | 1.94                     | 0.65              |
| 10:AD:37:VAL:HB   | 10:AD:46:ARG:HB2  | 1.78                     | 0.65              |
| 16:AJ:19:ASP:O    | 16:AJ:20:ALA:HB3  | 1.95                     | 0.65              |
| 16:AJ:73:VAL:HA   | 16:AJ:88:THR:O    | 1.95                     | 0.65              |
| 23:AQ:14:LYS:HA   | 23:AQ:17:LEU:HB3  | 1.78                     | 0.65              |
| 29:AW:42:THR:HG21 | 29:AW:66:VAL:HG12 | 1.77                     | 0.65              |
| 29:AW:57:THR:O    | 29:AW:59:PHE:N    | 2.29                     | 0.65              |
| 31:AY:3:THR:CG2   | 31:AY:39:ASP:HA   | 2.24                     | 0.65              |
| 32:AZ:49:ARG:HA   | 32:AZ:52:ALA:CB   | 2.25                     | 0.65              |
| 33:BA:123:U:H2'   | 33:BA:124:C:C6    | 2.31                     | 0.65              |
| 33:BA:1205:U:O2'  | 33:BA:1206:G:H5'  | 1.96                     | 0.65              |
| 33:BA:1505:G:H4'  | 33:BA:1506:U:O5'  | 1.95                     | 0.65              |
| 35:BC:10:ARG:HG3  | 35:BC:10:ARG:NH1  | 2.06                     | 0.65              |
| 36:BD:75:TYR:CZ   | 36:BD:203:TYR:HB2 | 2.31                     | 0.65              |
| 40:BH:54:THR:HG23 | 40:BH:55:LYS:H    | 1.60                     | 0.65              |
| 48:BP:51:ARG:NH1  | 48:BP:52:LEU:H    | 1.94                     | 0.65              |
| 5:C4:26:ILE:CG2   | 5:C4:35:GLN:HG2   | 2.26                     | 0.65              |
| 8:CB:250:G:H5'    | 18:CL:60:ARG:HD2  | 1.78                     | 0.65              |
| 8:CB:262:A:H3'    | 8:CB:262:A:C8     | 2.30                     | 0.65              |
| 8:CB:901:C:H2'    | 8:CB:902:C:C6     | 2.31                     | 0.65              |
| 8:CB:1419:A:C2    | 8:CB:2211:A:N6    | 2.65                     | 0.65              |
| 8:CB:1516:G:H2'   | 8:CB:1517:G:C8    | 2.30                     | 0.65              |
| 8:CB:1764:C:H3'   | 8:CB:1764:C:H6    | 1.61                     | 0.65              |
| 8:CB:2101:A:H2'   | 8:CB:2102:G:H8    | 1.61                     | 0.65              |
| 8:CB:2587:A:H5''  | 8:CB:2587:A:C8    | 2.30                     | 0.65              |
| 13:CG:125:PRO:CG  | 13:CG:129:GLU:HB3 | 2.25                     | 0.65              |
| 18:CL:103:ILE:HB  | 18:CL:104:GLN:NE2 | 2.10                     | 0.65              |
| 33:DA:61:G:N2     | 33:DA:106:C:O2    | 2.27                     | 0.65              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:562:U:H3'    | 55:DA:5129:HOH:O  | 1.95                     | 0.65              |
| 33:DA:659:U:C2'    | 33:DA:660:C:H6    | 2.06                     | 0.65              |
| 33:DA:773:G:C8     | 33:DA:773:G:H3'   | 2.31                     | 0.65              |
| 33:DA:780:A:O2'    | 33:DA:781:A:H5''  | 1.96                     | 0.65              |
| 33:DA:1057:G:C5'   | 35:DC:153:SER:HB2 | 2.21                     | 0.65              |
| 33:DA:1388:C:H2'   | 33:DA:1389:C:H6   | 1.58                     | 0.65              |
| 47:DO:38:LEU:O     | 47:DO:41:HIS:HB3  | 1.96                     | 0.65              |
| 47:DO:87:ARG:O     | 47:DO:88:ARG:HB2  | 1.96                     | 0.65              |
| 2:A1:24:LYS:HD3    | 2:A1:24:LYS:N     | 2.11                     | 0.65              |
| 4:A3:11:LYS:HA     | 18:AL:66:PHE:HZ   | 1.61                     | 0.65              |
| 8:AB:1048:A:H2'    | 8:AB:1049:C:H6    | 1.61                     | 0.65              |
| 8:AB:1309:G:H8     | 8:AB:1309:G:H5''  | 1.61                     | 0.65              |
| 8:AB:1809:A:C6     | 8:AB:1810:A:C6    | 2.84                     | 0.65              |
| 8:AB:2560:A:C4     | 8:AB:2561:U:C6    | 2.84                     | 0.65              |
| 8:AB:2821:A:C8     | 8:AB:2821:A:H3'   | 2.31                     | 0.65              |
| 10:AD:4:LEU:O      | 10:AD:4:LEU:HD23  | 1.97                     | 0.65              |
| 10:AD:179:ARG:HH11 | 10:AD:179:ARG:CG  | 2.09                     | 0.65              |
| 18:AL:61:LEU:CG    | 18:AL:62:PRO:HD2  | 2.27                     | 0.65              |
| 20:AN:38:LEU:HB2   | 20:AN:109:PRO:HB2 | 1.78                     | 0.65              |
| 21:AO:87:ILE:CG1   | 21:AO:88:LYS:N    | 2.57                     | 0.65              |
| 22:AP:47:ILE:HG22  | 22:AP:48:ALA:N    | 2.10                     | 0.65              |
| 22:AP:93:LYS:HE3   | 22:AP:97:TYR:CE2  | 2.31                     | 0.65              |
| 24:AR:75:VAL:O     | 24:AR:90:ARG:HD3  | 1.97                     | 0.65              |
| 33:BA:104:G:C2     | 33:BA:105:G:C5    | 2.85                     | 0.65              |
| 33:BA:622:A:C8     | 33:BA:623:C:C6    | 2.84                     | 0.65              |
| 33:BA:714:G:N3     | 33:BA:777:A:H1'   | 2.11                     | 0.65              |
| 33:BA:716:A:N3     | 43:BK:119:GLY:HA2 | 2.11                     | 0.65              |
| 33:BA:773:G:C2     | 33:BA:774:G:H1'   | 2.31                     | 0.65              |
| 33:BA:868:C:H2'    | 33:BA:869:G:H5'   | 1.78                     | 0.65              |
| 33:BA:907:A:C8     | 33:BA:907:A:H5''  | 2.31                     | 0.65              |
| 33:BA:954:G:C2     | 33:BA:1228:C:N3   | 2.65                     | 0.65              |
| 33:BA:975:A:C2     | 42:BJ:52:LEU:HD11 | 2.31                     | 0.65              |
| 33:BA:999:C:H42    | 33:BA:1042:A:N6   | 1.95                     | 0.65              |
| 34:BB:30:ILE:HG21  | 34:BB:38:HIS:HB3  | 1.76                     | 0.65              |
| 34:BB:34:ARG:HD2   | 34:BB:35:ASN:N    | 2.11                     | 0.65              |
| 38:BF:68:GLN:O     | 38:BF:72:ASP:HB2  | 1.97                     | 0.65              |
| 40:BH:91:LEU:CB    | 40:BH:92:PRO:HD3  | 2.26                     | 0.65              |
| 43:BK:12:ARG:O     | 43:BK:14:GLN:N    | 2.29                     | 0.65              |
| 4:C3:2:LYS:HE2     | 4:C3:2:LYS:C      | 2.15                     | 0.65              |
| 7:CA:84:G:N1       | 7:CA:85:G:C5      | 2.64                     | 0.65              |
| 8:CB:379:G:N1      | 8:CB:396:G:C6     | 2.63                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:828:U:O2'    | 8:CB:829:A:H5''   | 1.97                     | 0.65              |
| 8:CB:1866:A:C8    | 8:CB:1876:A:N6    | 2.65                     | 0.65              |
| 8:CB:2231:U:C2    | 8:CB:2232:C:C5    | 2.85                     | 0.65              |
| 8:CB:2519:U:C2    | 8:CB:2542:A:C6    | 2.84                     | 0.65              |
| 10:CD:31:ALA:HB3  | 10:CD:95:SER:CB   | 2.27                     | 0.65              |
| 13:CG:67:ALA:O    | 13:CG:70:LEU:HB3  | 1.96                     | 0.65              |
| 13:CG:162:ARG:HB2 | 13:CG:166:GLU:CD  | 2.17                     | 0.65              |
| 27:CU:92:VAL:HG22 | 27:CU:94:PHE:N    | 2.09                     | 0.65              |
| 29:CW:23:LYS:HE3  | 29:CW:24:ARG:CB   | 2.23                     | 0.65              |
| 33:DA:155:A:H5'   | 33:DA:155:A:C8    | 2.25                     | 0.65              |
| 33:DA:293:G:C5    | 33:DA:294:U:C5    | 2.83                     | 0.65              |
| 33:DA:728:A:C5    | 33:DA:729:A:N6    | 2.65                     | 0.65              |
| 7:AA:47:C:H3'     | 7:AA:47:C:C6      | 2.31                     | 0.65              |
| 8:AB:440:C:H3'    | 8:AB:440:C:C6     | 2.31                     | 0.65              |
| 8:AB:553:G:H2'    | 8:AB:554:U:C5'    | 2.12                     | 0.65              |
| 8:AB:682:G:C2     | 8:AB:683:U:C4     | 2.83                     | 0.65              |
| 8:AB:699:A:O3'    | 8:AB:1554:U:H5    | 1.80                     | 0.65              |
| 8:AB:1371:G:OP2   | 55:AB:4482:HOH:O  | 2.15                     | 0.65              |
| 8:AB:2204:G:O6    | 8:AB:2221:G:C6    | 2.49                     | 0.65              |
| 8:AB:2333:A:H4'   | 8:AB:2334:U:C5'   | 2.26                     | 0.65              |
| 8:AB:2539:C:H2'   | 8:AB:2540:C:H5''  | 1.79                     | 0.65              |
| 8:AB:2885:G:C2    | 8:AB:2886:A:H1'   | 2.32                     | 0.65              |
| 16:AJ:116:ARG:HG2 | 16:AJ:116:ARG:NH1 | 2.04                     | 0.65              |
| 20:AN:1:MET:SD    | 20:AN:2:ARG:N     | 2.70                     | 0.65              |
| 23:AQ:86:SER:O    | 23:AQ:89:ILE:HG22 | 1.96                     | 0.65              |
| 24:AR:16:GLU:HB2  | 24:AR:100:GLY:O   | 1.96                     | 0.65              |
| 27:AU:91:LYS:O    | 27:AU:92:VAL:HG12 | 1.95                     | 0.65              |
| 32:AZ:66:ILE:HG22 | 32:AZ:70:LYS:HD2  | 1.77                     | 0.65              |
| 33:BA:354:G:H2'   | 33:BA:355:C:H5'   | 1.76                     | 0.65              |
| 33:BA:366:A:H1'   | 33:BA:394:G:H22   | 1.60                     | 0.65              |
| 33:BA:782:A:C6    | 33:BA:783:C:C2    | 2.84                     | 0.65              |
| 33:BA:952:U:H4'   | 33:BA:964:A:H61   | 1.60                     | 0.65              |
| 33:BA:1182:G:H4'  | 33:BA:1183:U:C5'  | 2.25                     | 0.65              |
| 33:BA:1256:A:C6   | 33:BA:1278:G:C4   | 2.85                     | 0.65              |
| 33:BA:1336:C:H5'' | 33:BA:1337:G:H5'  | 1.79                     | 0.65              |
| 34:BB:209:VAL:O   | 34:BB:213:LEU:HB2 | 1.97                     | 0.65              |
| 36:BD:18:LEU:HB2  | 36:BD:20:LEU:HD11 | 1.79                     | 0.65              |
| 39:BG:96:ASN:O    | 39:BG:100:MET:HG3 | 1.96                     | 0.65              |
| 41:BI:44:ARG:HD2  | 41:BI:44:ARG:C    | 2.17                     | 0.65              |
| 44:BL:73:LEU:CD2  | 44:BL:103:CYS:HB3 | 2.25                     | 0.65              |
| 50:BR:58:ILE:HG23 | 50:BR:67:LEU:HD22 | 1.77                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:C3:58:ILE:HG22  | 18:CL:51:GLU:HG3  | 1.78                     | 0.65              |
| 8:CB:728:G:H3'    | 8:CB:729:G:C5'    | 2.26                     | 0.65              |
| 8:CB:937:C:H2'    | 8:CB:938:G:H8     | 1.59                     | 0.65              |
| 8:CB:1285:A:C6    | 8:CB:1329:U:C4    | 2.84                     | 0.65              |
| 8:CB:1452:G:C2    | 8:CB:2702:G:C5    | 2.84                     | 0.65              |
| 8:CB:1802:A:O2'   | 9:CC:255:LYS:HE2  | 1.97                     | 0.65              |
| 8:CB:1809:A:C3'   | 8:CB:1810:A:H8    | 2.09                     | 0.65              |
| 8:CB:2521:C:H5'   | 8:CB:2521:C:C6    | 2.30                     | 0.65              |
| 9:CC:51:ARG:NH1   | 9:CC:53:ILE:O     | 2.29                     | 0.65              |
| 9:CC:131:MET:O    | 9:CC:134:ILE:HG22 | 1.96                     | 0.65              |
| 9:CC:153:LEU:HG   | 9:CC:153:LEU:O    | 1.96                     | 0.65              |
| 11:CE:152:GLU:O   | 11:CE:153:LEU:HB2 | 1.97                     | 0.65              |
| 18:CL:14:LYS:CE   | 18:CL:15:ALA:H    | 2.10                     | 0.65              |
| 33:DA:46:G:N2     | 33:DA:396:C:O2    | 2.29                     | 0.65              |
| 33:DA:386:C:C3'   | 33:DA:387:U:H5''  | 2.26                     | 0.65              |
| 33:DA:764:C:C2'   | 33:DA:765:G:H5'   | 2.26                     | 0.65              |
| 33:DA:791:G:C5    | 33:DA:792:A:N7    | 2.63                     | 0.65              |
| 33:DA:907:A:C2    | 33:DA:908:A:C8    | 2.85                     | 0.65              |
| 39:DG:11:ILE:HG12 | 39:DG:24:LYS:HG3  | 1.77                     | 0.65              |
| 8:AB:295:G:H22    | 8:AB:344:A:H1'    | 1.61                     | 0.65              |
| 8:AB:597:G:N2     | 8:AB:661:A:N3     | 2.44                     | 0.65              |
| 8:AB:1275:A:C5    | 20:AN:16:HIS:CE1  | 2.85                     | 0.65              |
| 8:AB:1882:U:O2'   | 8:AB:1883:U:H5'   | 1.96                     | 0.65              |
| 8:AB:2024:G:C6    | 8:AB:2025:C:C4    | 2.85                     | 0.65              |
| 8:AB:2231:U:C2    | 8:AB:2232:C:C5    | 2.85                     | 0.65              |
| 8:AB:2261:C:C2    | 8:AB:2280:G:N2    | 2.65                     | 0.65              |
| 8:AB:2285:C:C1'   | 8:AB:2288:A:N7    | 2.57                     | 0.65              |
| 8:AB:2748:A:N6    | 8:AB:2757:A:C5    | 2.64                     | 0.65              |
| 9:AC:30:ALA:N     | 9:AC:31:PRO:HD2   | 2.11                     | 0.65              |
| 9:AC:115:ILE:HG22 | 9:AC:127:ASN:OD1  | 1.96                     | 0.65              |
| 10:AD:174:SER:O   | 10:AD:175:LEU:HB2 | 1.95                     | 0.65              |
| 14:AH:44:ILE:HA   | 14:AH:47:PHE:CD2  | 2.32                     | 0.65              |
| 14:AH:46:PHE:HA   | 14:AH:49:ALA:HB3  | 1.78                     | 0.65              |
| 20:AN:52:ILE:HG21 | 20:AN:94:TYR:HD2  | 1.62                     | 0.65              |
| 22:AP:27:VAL:HG23 | 22:AP:86:LYS:CB   | 2.25                     | 0.65              |
| 27:AU:92:VAL:O    | 27:AU:92:VAL:HG13 | 1.97                     | 0.65              |
| 29:AW:21:GLY:HA2  | 29:AW:25:PHE:HD1  | 1.56                     | 0.65              |
| 29:AW:36:ILE:HG23 | 29:AW:37:VAL:H    | 1.60                     | 0.65              |
| 32:AZ:9:TYR:HD2   | 32:AZ:10:GLU:H    | 1.42                     | 0.65              |
| 33:BA:328:C:H4'   | 33:BA:329:A:C5'   | 2.25                     | 0.65              |
| 33:BA:431:A:H2'   | 33:BA:432:A:O4'   | 1.97                     | 0.65              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:519:C:C2     | 33:BA:520:A:C8    | 2.84                     | 0.65              |
| 33:BA:584:G:H8     | 33:BA:584:G:O5'   | 1.80                     | 0.65              |
| 33:BA:597:G:OP2    | 33:BA:598:U:C5    | 2.50                     | 0.65              |
| 33:BA:951:G:C6     | 33:BA:1231:G:C6   | 2.85                     | 0.65              |
| 33:BA:1168:U:H4'   | 33:BA:1169:A:OP2  | 1.97                     | 0.65              |
| 33:BA:1319:A:H2    | 33:BA:1362:A:N6   | 1.94                     | 0.65              |
| 33:BA:1345:U:C5    | 33:BA:1377:A:H2   | 2.14                     | 0.65              |
| 33:BA:1373:G:H1'   | 39:BG:33:GLY:HA3  | 1.77                     | 0.65              |
| 33:BA:1381:U:H2'   | 33:BA:1381:U:O2   | 1.97                     | 0.65              |
| 33:BA:1426:G:C5    | 33:BA:1427:C:C5   | 2.84                     | 0.65              |
| 2:C1:24:LYS:HD3    | 2:C1:24:LYS:N     | 2.11                     | 0.65              |
| 5:C4:24:ARG:CB     | 5:C4:36:ARG:HA    | 2.25                     | 0.65              |
| 8:CB:371:A:C8      | 8:CB:373:U:C2     | 2.84                     | 0.65              |
| 8:CB:529:A:C5      | 8:CB:2042:A:C2    | 2.84                     | 0.65              |
| 8:CB:545:U:C6      | 8:CB:545:U:H3'    | 2.31                     | 0.65              |
| 8:CB:580:U:H2'     | 8:CB:581:C:C6     | 2.28                     | 0.65              |
| 8:CB:780:G:H2'     | 8:CB:782:A:N7     | 2.11                     | 0.65              |
| 8:CB:959:A:OP2     | 8:CB:959:A:H4'    | 1.97                     | 0.65              |
| 8:CB:962:G:OP1     | 55:CB:5189:HOH:O  | 2.14                     | 0.65              |
| 8:CB:1313:U:OP1    | 55:CB:5240:HOH:O  | 2.14                     | 0.65              |
| 8:CB:1454:C:H4'    | 20:CN:60:VAL:HG22 | 1.77                     | 0.65              |
| 8:CB:1889:A:O2'    | 8:CB:2087:G:H5'   | 1.95                     | 0.65              |
| 8:CB:2335:A:N7     | 8:CB:2337:G:C5    | 2.64                     | 0.65              |
| 8:CB:2886:A:C2     | 8:CB:2887:A:N7    | 2.65                     | 0.65              |
| 16:CJ:63:ALA:HA    | 16:CJ:69:ARG:HH12 | 1.61                     | 0.65              |
| 18:CL:19:LEU:H     | 18:CL:19:LEU:CD1  | 1.99                     | 0.65              |
| 19:CM:52:ALA:O     | 19:CM:55:ARG:HB2  | 1.96                     | 0.65              |
| 23:CQ:13:HIS:CG    | 23:CQ:31:TYR:CZ   | 2.85                     | 0.65              |
| 23:CQ:38:VAL:CA    | 23:CQ:42:GLY:H    | 2.08                     | 0.65              |
| 26:CT:76:ARG:HG2   | 26:CT:77:ARG:N    | 2.06                     | 0.65              |
| 28:CV:21:ARG:NE    | 28:CV:87:GLN:HG3  | 2.11                     | 0.65              |
| 29:CW:22:VAL:HG12  | 29:CW:23:LYS:HG2  | 1.77                     | 0.65              |
| 30:CX:52:ARG:O     | 30:CX:56:LEU:HB2  | 1.96                     | 0.65              |
| 33:DA:540:G:C5     | 33:DA:541:G:C5    | 2.84                     | 0.65              |
| 33:DA:689:C:H6     | 33:DA:689:C:O5'   | 1.79                     | 0.65              |
| 33:DA:986:U:H2'    | 33:DA:987:G:O4'   | 1.96                     | 0.65              |
| 33:DA:1239:A:H1'   | 33:DA:1241:G:C5   | 2.30                     | 0.65              |
| 34:DB:94:ARG:HE    | 34:DB:94:ARG:N    | 1.95                     | 0.65              |
| 35:DC:151:GLU:HA   | 35:DC:166:TRP:HA  | 1.79                     | 0.65              |
| 35:DC:153:SER:O    | 35:DC:164:THR:HA  | 1.96                     | 0.65              |
| 35:DC:181:ILE:HG13 | 35:DC:201:ILE:O   | 1.96                     | 0.65              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:DE:37:VAL:HA    | 37:DE:46:GLY:O    | 1.97                     | 0.65              |
| 47:DO:63:ARG:NE    | 47:DO:87:ARG:HH22 | 1.94                     | 0.65              |
| 48:DP:36:VAL:HG11  | 48:DP:57:ILE:HG12 | 1.77                     | 0.65              |
| 51:DS:1:PRO:O      | 51:DS:2:ARG:HB2   | 1.97                     | 0.65              |
| 51:DS:10:ILE:HA    | 51:DS:37:SER:HB3  | 1.79                     | 0.65              |
| 8:AB:235:U:H2'     | 8:AB:236:C:H6     | 1.62                     | 0.65              |
| 8:AB:831:G:N1      | 8:AB:832:U:O2     | 2.29                     | 0.65              |
| 8:AB:1109:C:O2     | 8:AB:1110:G:C2    | 2.50                     | 0.65              |
| 8:AB:1837:C:N3     | 8:AB:1899:A:N6    | 2.44                     | 0.65              |
| 8:AB:2683:C:H2'    | 8:AB:2684:U:H5'   | 1.78                     | 0.65              |
| 8:AB:2787:C:H5'    | 10:AD:65:ALA:HB1  | 1.77                     | 0.65              |
| 13:AG:169:ARG:C    | 13:AG:169:ARG:HD3 | 2.17                     | 0.65              |
| 16:AJ:27:ARG:HH11  | 16:AJ:27:ARG:HG3  | 1.61                     | 0.65              |
| 20:AN:29:VAL:HG21  | 20:AN:75:ILE:HD11 | 1.77                     | 0.65              |
| 33:BA:603:U:H3'    | 33:BA:603:U:C6    | 2.32                     | 0.65              |
| 33:BA:607:A:C6     | 33:BA:608:A:C6    | 2.85                     | 0.65              |
| 33:BA:1064:G:C8    | 33:BA:1066:C:C2   | 2.84                     | 0.65              |
| 33:BA:1222:G:C6    | 33:BA:1223:C:C4   | 2.84                     | 0.65              |
| 33:BA:1500:A:H2'   | 33:BA:1501:C:H5'  | 1.79                     | 0.65              |
| 33:BA:1531:A:C2    | 33:BA:1532:U:C4   | 2.85                     | 0.65              |
| 35:BC:72:PRO:O     | 35:BC:75:VAL:HB   | 1.96                     | 0.65              |
| 36:BD:96:ARG:HG2   | 36:BD:98:ASP:H    | 1.61                     | 0.65              |
| 38:BF:4:TYR:HD1    | 38:BF:91:ARG:HA   | 1.61                     | 0.65              |
| 43:BK:28:ASN:HD22  | 43:BK:29:THR:H    | 1.44                     | 0.65              |
| 7:CA:28:C:H6       | 7:CA:29:A:N7      | 1.94                     | 0.65              |
| 7:CA:87:U:H2'      | 7:CA:88:C:O5'     | 1.96                     | 0.65              |
| 8:CB:63:A:H5''     | 26:CT:69:ARG:NH2  | 2.10                     | 0.65              |
| 8:CB:162:U:H4'     | 8:CB:163:C:OP1    | 1.95                     | 0.65              |
| 8:CB:409:G:H2'     | 8:CB:410:G:H8     | 1.62                     | 0.65              |
| 8:CB:1313:U:OP1    | 55:CB:5237:HOH:O  | 2.14                     | 0.65              |
| 8:CB:1610:A:O2'    | 8:CB:1611:C:H5'   | 1.96                     | 0.65              |
| 8:CB:1960:A:N7     | 8:CB:1961:C:C5    | 2.64                     | 0.65              |
| 8:CB:2452:C:H3'    | 8:CB:2452:C:C6    | 2.31                     | 0.65              |
| 8:CB:2514:U:H2'    | 8:CB:2515:C:H6    | 1.59                     | 0.65              |
| 10:CD:179:ARG:HH11 | 10:CD:179:ARG:CG  | 2.04                     | 0.65              |
| 18:CL:19:LEU:HD22  | 18:CL:20:GLY:H    | 1.60                     | 0.65              |
| 18:CL:45:GLY:C     | 18:CL:47:ARG:H    | 2.00                     | 0.65              |
| 19:CM:4:PRO:HB2    | 19:CM:69:PRO:HG2  | 1.77                     | 0.65              |
| 27:CU:22:GLY:CA    | 27:CU:35:VAL:HG21 | 2.25                     | 0.65              |
| 31:CY:15:ARG:O     | 31:CY:20:LYS:HE2  | 1.96                     | 0.65              |
| 33:DA:243:A:C5     | 33:DA:245:U:O4    | 2.50                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:522:C:N4     | 33:DA:528:C:N4     | 2.44                     | 0.65              |
| 33:DA:587:G:O2'    | 33:DA:588:G:H5''   | 1.96                     | 0.65              |
| 33:DA:632:U:OP1    | 33:DA:633:G:C8     | 2.49                     | 0.65              |
| 33:DA:639:G:C5     | 33:DA:640:A:N7     | 2.64                     | 0.65              |
| 33:DA:1105:A:C6    | 33:DA:1106:G:N7    | 2.65                     | 0.65              |
| 33:DA:1256:A:N6    | 33:DA:1278:G:C8    | 2.64                     | 0.65              |
| 35:DC:129:PHE:CE1  | 35:DC:130:ARG:HD3  | 2.32                     | 0.65              |
| 42:DJ:64:GLN:HB3   | 46:DN:98:ALA:HB3   | 1.77                     | 0.65              |
| 47:DO:84:LEU:HB3   | 47:DO:86:LEU:CD1   | 2.26                     | 0.65              |
| 4:A3:24:LYS:CB     | 4:A3:45:PRO:HG3    | 2.21                     | 0.65              |
| 8:AB:98:G:H8       | 8:AB:98:G:C5'      | 2.09                     | 0.65              |
| 8:AB:117:G:N1      | 8:AB:119:A:N6      | 2.45                     | 0.65              |
| 8:AB:473:G:H2'     | 8:AB:474:G:H5'     | 1.79                     | 0.65              |
| 8:AB:937:C:H2'     | 8:AB:938:G:H8      | 1.62                     | 0.65              |
| 8:AB:1820:U:H4'    | 8:AB:1821:A:OP2    | 1.96                     | 0.65              |
| 8:AB:2240:U:C2     | 8:AB:2241:A:C8     | 2.84                     | 0.65              |
| 8:AB:2803:G:H2'    | 8:AB:2804:U:H6     | 1.60                     | 0.65              |
| 8:AB:2821:A:OP2    | 10:AD:115:GLY:HA3  | 1.96                     | 0.65              |
| 10:AD:148:GLN:HE21 | 10:AD:151:THR:HG21 | 1.61                     | 0.65              |
| 13:AG:84:LYS:CE    | 13:AG:84:LYS:HA    | 2.26                     | 0.65              |
| 16:AJ:28:LEU:O     | 16:AJ:32:LEU:HB2   | 1.97                     | 0.65              |
| 16:AJ:113:PRO:HA   | 16:AJ:116:ARG:HB2  | 1.78                     | 0.65              |
| 17:AK:110:GLU:O    | 17:AK:111:LYS:HG2  | 1.97                     | 0.65              |
| 18:AL:110:VAL:HG23 | 18:AL:126:ARG:HH12 | 1.62                     | 0.65              |
| 19:AM:9:PHE:O      | 19:AM:10:ARG:NE    | 2.29                     | 0.65              |
| 20:AN:100:CYS:SG   | 20:AN:112:TYR:HE2  | 2.19                     | 0.65              |
| 32:AZ:56:ARG:HH11  | 32:AZ:56:ARG:CB    | 2.10                     | 0.65              |
| 33:BA:37:U:OP1     | 44:BL:119:LYS:HB2  | 1.97                     | 0.65              |
| 33:BA:232:G:H8     | 33:BA:232:G:C5'    | 2.09                     | 0.65              |
| 33:BA:342:C:C2'    | 33:BA:343:U:H5'    | 2.26                     | 0.65              |
| 33:BA:499:A:H2     | 33:BA:500:G:N3     | 1.94                     | 0.65              |
| 33:BA:661:G:H2'    | 33:BA:662:U:O4'    | 1.96                     | 0.65              |
| 33:BA:683:G:O2'    | 33:BA:684:U:H5'    | 1.96                     | 0.65              |
| 33:BA:1296:C:H5'   | 45:BM:13:HIS:CD2   | 2.31                     | 0.65              |
| 40:BH:11:THR:HA    | 40:BH:14:ARG:HH12  | 1.62                     | 0.65              |
| 49:BQ:30:HIS:CE1   | 49:BQ:31:PRO:HG2   | 2.31                     | 0.65              |
| 7:CA:15:A:C8       | 7:CA:109:A:C6      | 2.85                     | 0.65              |
| 8:CB:86:G:H1       | 8:CB:96:C:H42      | 1.45                     | 0.65              |
| 8:CB:773:U:H2'     | 8:CB:773:U:O2      | 1.96                     | 0.65              |
| 8:CB:1566:A:N1     | 9:CC:213:ARG:NH2   | 2.45                     | 0.65              |
| 8:CB:2311:A:C6     | 12:CF:39:VAL:HG23  | 2.32                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2811:G:H5''   | 10:CD:60:VAL:HG12  | 1.79                     | 0.65              |
| 11:CE:72:SER:HB3   | 11:CE:74:LYS:HD2   | 1.78                     | 0.65              |
| 14:CH:119:ASN:O    | 14:CH:121:VAL:N    | 2.30                     | 0.65              |
| 18:CL:35:HIS:ND1   | 24:CR:84:ARG:HG3   | 2.11                     | 0.65              |
| 19:CM:135:VAL:HG12 | 19:CM:136:MET:H    | 1.61                     | 0.65              |
| 21:CO:27:VAL:HG23  | 21:CO:28:VAL:H     | 1.62                     | 0.65              |
| 26:CT:67:VAL:HG12  | 26:CT:68:LYS:N     | 2.11                     | 0.65              |
| 29:CW:42:THR:HG23  | 29:CW:66:VAL:H     | 1.60                     | 0.65              |
| 33:DA:553:A:H2'    | 33:DA:554:A:H8     | 1.61                     | 0.65              |
| 33:DA:705:G:C8     | 33:DA:706:A:C8     | 2.84                     | 0.65              |
| 33:DA:1129:C:H5'   | 41:DI:17:ARG:HH12  | 1.61                     | 0.65              |
| 33:DA:1138:G:H2'   | 33:DA:1140:C:O4'   | 1.97                     | 0.65              |
| 33:DA:1416:G:N2    | 33:DA:1417:G:H1'   | 2.12                     | 0.65              |
| 37:DE:88:HIS:CE1   | 37:DE:137:ARG:HG2  | 2.31                     | 0.65              |
| 44:DL:33:CYS:HA    | 44:DL:54:VAL:HA    | 1.78                     | 0.65              |
| 5:A4:32:LYS:HG3    | 8:AB:2527:C:O2'    | 1.97                     | 0.65              |
| 7:AA:10:G:H2'      | 7:AA:11:C:O4'      | 1.96                     | 0.65              |
| 8:AB:728:G:H3'     | 8:AB:729:G:C5'     | 2.27                     | 0.65              |
| 8:AB:911:A:C5      | 19:AM:13:HIS:CD2   | 2.85                     | 0.65              |
| 8:AB:928:A:H5'     | 31:AY:38:GLU:OE2   | 1.96                     | 0.65              |
| 8:AB:1026:G:C8     | 8:AB:1134:A:C4     | 2.85                     | 0.65              |
| 8:AB:1041:G:N2     | 8:AB:1115:G:N2     | 2.43                     | 0.65              |
| 8:AB:1340:U:O2'    | 8:AB:1341:G:P      | 2.55                     | 0.65              |
| 8:AB:1453:A:H5''   | 8:AB:1453:A:C8     | 2.32                     | 0.65              |
| 8:AB:1658:C:H5'    | 10:AD:136:ASN:ND2  | 2.12                     | 0.65              |
| 8:AB:1761:C:H2'    | 8:AB:1762:A:H5'    | 1.79                     | 0.65              |
| 8:AB:2310:C:O2     | 12:AF:74:ALA:HB1   | 1.96                     | 0.65              |
| 8:AB:2334:U:P      | 21:AO:7:ARG:HE     | 2.20                     | 0.65              |
| 8:AB:2345:G:C4     | 8:AB:2381:A:C2     | 2.84                     | 0.65              |
| 8:AB:2728:U:H2'    | 8:AB:2729:G:H8     | 1.61                     | 0.65              |
| 8:AB:2784:U:H4'    | 10:AD:41:ALA:C     | 2.17                     | 0.65              |
| 8:AB:2794:C:H2'    | 8:AB:2795:C:H6     | 1.62                     | 0.65              |
| 10:AD:115:GLY:O    | 20:AN:3:HIS:NE2    | 2.28                     | 0.65              |
| 16:AJ:42:ALA:HA    | 23:AQ:66:ALA:HB3   | 1.79                     | 0.65              |
| 18:AL:102:GLY:O    | 18:AL:105:ILE:HD12 | 1.97                     | 0.65              |
| 21:AO:8:ILE:CG2    | 21:AO:9:ARG:H      | 2.09                     | 0.65              |
| 23:AQ:65:ASN:HD21  | 23:AQ:69:ARG:HH21  | 1.44                     | 0.65              |
| 33:BA:370:C:C2'    | 33:BA:371:A:H5'    | 2.26                     | 0.65              |
| 33:BA:698:G:O5'    | 33:BA:698:G:C8     | 2.42                     | 0.65              |
| 33:BA:945:G:N3     | 33:BA:945:G:H2'    | 2.11                     | 0.65              |
| 36:BD:124:VAL:C    | 36:BD:126:GLY:H    | 2.00                     | 0.65              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:BE:13:LYS:HD2   | 37:BE:112:ALA:HB2 | 1.77                     | 0.65              |
| 39:BG:149:ALA:HB1  | 43:BK:58:THR:CG2  | 2.26                     | 0.65              |
| 41:BI:80:HIS:CD2   | 41:BI:84:ARG:NH1  | 2.64                     | 0.65              |
| 8:CB:525:U:O2'     | 8:CB:526:A:H5''   | 1.97                     | 0.65              |
| 8:CB:860:U:H1'     | 8:CB:2268:A:C5'   | 2.27                     | 0.65              |
| 8:CB:868:U:O4      | 8:CB:909:A:N1     | 2.30                     | 0.65              |
| 8:CB:1360:G:C6     | 8:CB:1372:U:C2    | 2.85                     | 0.65              |
| 8:CB:1652:A:N6     | 8:CB:1653:G:N2    | 2.44                     | 0.65              |
| 8:CB:1756:G:C8     | 8:CB:1756:G:C3'   | 2.78                     | 0.65              |
| 8:CB:2318:G:O2'    | 8:CB:2319:G:H5'   | 1.96                     | 0.65              |
| 8:CB:2561:U:C2'    | 8:CB:2562:U:H5''  | 2.26                     | 0.65              |
| 8:CB:2751:G:H5'    | 13:CG:3:VAL:CG1   | 2.26                     | 0.65              |
| 9:CC:143:VAL:CB    | 9:CC:152:GLN:HG3  | 2.27                     | 0.65              |
| 10:CD:56:LYS:HZ3   | 10:CD:59:ARG:HA   | 1.59                     | 0.65              |
| 13:CG:171:LYS:NZ   | 13:CG:173:ALA:HA  | 2.12                     | 0.65              |
| 14:CH:39:ALA:O     | 14:CH:43:ASN:HB2  | 1.96                     | 0.65              |
| 15:CI:60:VAL:CG2   | 15:CI:66:PHE:HB3  | 2.27                     | 0.65              |
| 18:CL:18:ARG:HD2   | 18:CL:20:GLY:CA   | 2.27                     | 0.65              |
| 18:CL:33:ARG:HG2   | 24:CR:85:LYS:HE2  | 1.77                     | 0.65              |
| 22:CP:59:THR:HG23  | 22:CP:76:HIS:CG   | 2.32                     | 0.65              |
| 24:CR:40:MET:HG3   | 24:CR:54:VAL:HG22 | 1.77                     | 0.65              |
| 27:CU:48:VAL:O     | 27:CU:48:VAL:HG12 | 1.96                     | 0.65              |
| 29:CW:66:VAL:HG22  | 29:CW:67:LYS:H    | 1.61                     | 0.65              |
| 30:CX:28:LEU:CD2   | 30:CX:42:LEU:HG   | 2.03                     | 0.65              |
| 32:CZ:36:VAL:HG22  | 32:CZ:42:PRO:HB3  | 1.78                     | 0.65              |
| 33:DA:9:G:C5       | 33:DA:10:A:N7     | 2.65                     | 0.65              |
| 33:DA:479:U:H6     | 33:DA:479:U:H3'   | 1.60                     | 0.65              |
| 33:DA:482:A:H3'    | 33:DA:483:C:C6    | 2.32                     | 0.65              |
| 33:DA:1034:G:H2'   | 33:DA:1035:A:C8   | 2.30                     | 0.65              |
| 33:DA:1315:U:C5    | 33:DA:1316:G:C5   | 2.84                     | 0.65              |
| 34:DB:216:VAL:HG23 | 34:DB:217:ALA:H   | 1.62                     | 0.65              |
| 35:DC:123:LEU:HD13 | 35:DC:123:LEU:H   | 1.61                     | 0.65              |
| 37:DE:55:VAL:HB    | 37:DE:56:PRO:CD   | 2.24                     | 0.65              |
| 48:DP:6:LEU:HD22   | 48:DP:71:VAL:HG12 | 1.77                     | 0.65              |
| 8:AB:379:G:C2      | 8:AB:396:G:C5     | 2.84                     | 0.65              |
| 8:AB:857:G:O2'     | 8:AB:858:G:H5'    | 1.96                     | 0.65              |
| 8:AB:865:C:H41     | 8:AB:908:C:N4     | 1.94                     | 0.65              |
| 8:AB:1270:C:H4'    | 8:AB:1271:G:O5'   | 1.96                     | 0.65              |
| 8:AB:1362:C:O2'    | 8:AB:1363:C:H5'   | 1.96                     | 0.65              |
| 8:AB:1889:A:H2'    | 8:AB:1890:A:O4'   | 1.96                     | 0.65              |
| 8:AB:2253:G:H8     | 8:AB:2253:G:O5'   | 1.80                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2752:C:H2'   | 8:AB:2753:A:O4'   | 1.95                     | 0.65              |
| 11:AE:175:ILE:CG2 | 11:AE:176:ASP:N   | 2.60                     | 0.65              |
| 12:AF:161:SER:O   | 12:AF:164:GLU:HB2 | 1.97                     | 0.65              |
| 13:AG:51:PHE:CB   | 13:AG:68:ARG:HD3  | 2.23                     | 0.65              |
| 14:AH:44:ILE:HA   | 14:AH:47:PHE:HD2  | 1.62                     | 0.65              |
| 17:AK:95:ILE:HG23 | 17:AK:95:ILE:O    | 1.95                     | 0.65              |
| 20:AN:68:ALA:C    | 20:AN:70:THR:N    | 2.49                     | 0.65              |
| 27:AU:11:ILE:HB   | 27:AU:69:VAL:CG1  | 2.25                     | 0.65              |
| 33:BA:57:G:N1     | 33:BA:356:A:C6    | 2.64                     | 0.65              |
| 33:BA:1001:C:H2'  | 33:BA:1002:G:O4'  | 1.97                     | 0.65              |
| 33:BA:1173:U:O5'  | 33:BA:1173:U:H6   | 1.79                     | 0.65              |
| 33:BA:1366:C:H2'  | 33:BA:1367:C:C6   | 2.32                     | 0.65              |
| 35:BC:82:ASP:O    | 35:BC:86:LEU:HG   | 1.97                     | 0.65              |
| 35:BC:108:PRO:HB3 | 35:BC:114:LEU:CD1 | 2.27                     | 0.65              |
| 37:BE:39:GLY:HA3  | 37:BE:45:VAL:HG12 | 1.79                     | 0.65              |
| 37:BE:151:MET:O   | 37:BE:155:LYS:HD3 | 1.96                     | 0.65              |
| 48:BP:42:ILE:HB   | 48:BP:46:LYS:CE   | 2.27                     | 0.65              |
| 48:BP:46:LYS:O    | 48:BP:47:GLU:HB2  | 1.97                     | 0.65              |
| 51:BS:34:SER:O    | 51:BS:70:LEU:HD23 | 1.97                     | 0.65              |
| 1:C0:27:LEU:HG    | 8:CB:2886:A:C5    | 2.29                     | 0.65              |
| 2:C1:45:HIS:O     | 2:C1:46:VAL:HG12  | 1.97                     | 0.65              |
| 8:CB:675:A:C6     | 8:CB:676:A:N1     | 2.65                     | 0.65              |
| 8:CB:1353:A:N3    | 8:CB:1354:A:C8    | 2.65                     | 0.65              |
| 8:CB:1748:C:H5''  | 8:CB:1748:C:H6    | 1.62                     | 0.65              |
| 8:CB:1799:G:OP1   | 9:CC:255:LYS:HE3  | 1.96                     | 0.65              |
| 8:CB:2179:C:H2'   | 8:CB:2180:U:H5    | 1.61                     | 0.65              |
| 8:CB:2386:A:H4'   | 29:CW:38:ARG:HB2  | 1.78                     | 0.65              |
| 8:CB:2512:C:H2'   | 8:CB:2513:A:O4'   | 1.97                     | 0.65              |
| 8:CB:2692:G:H21   | 8:CB:2693:G:H1'   | 1.61                     | 0.65              |
| 8:CB:2746:U:H2'   | 8:CB:2747:G:C8    | 2.32                     | 0.65              |
| 14:CH:78:VAL:HG12 | 14:CH:79:THR:N    | 2.06                     | 0.65              |
| 19:CM:66:ARG:HA   | 19:CM:66:ARG:NH1  | 2.12                     | 0.65              |
| 20:CN:32:GLU:HG3  | 20:CN:33:ILE:CG1  | 2.26                     | 0.65              |
| 21:CO:90:VAL:HG22 | 21:CO:116:GLN:HB3 | 1.78                     | 0.65              |
| 22:CP:47:ILE:HG23 | 22:CP:63:ILE:HG23 | 1.77                     | 0.65              |
| 27:CU:3:LYS:HD2   | 27:CU:81:ARG:HH11 | 1.61                     | 0.65              |
| 28:CV:30:ILE:HG22 | 28:CV:93:ARG:NH2  | 2.12                     | 0.65              |
| 32:CZ:37:CYS:H    | 32:CZ:42:PRO:HA   | 1.61                     | 0.65              |
| 33:DA:60:A:P      | 33:DA:60:A:C8     | 2.90                     | 0.65              |
| 33:DA:261:U:H5    | 52:DT:73:ARG:NH1  | 1.95                     | 0.65              |
| 33:DA:370:C:C2'   | 33:DA:371:A:H5'   | 2.27                     | 0.65              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:540:G:C8    | 33:DA:541:G:N7     | 2.64                     | 0.65              |
| 33:DA:1190:G:H4'  | 35:DC:175:HIS:NE2  | 2.12                     | 0.65              |
| 33:DA:1361:G:C5   | 33:DA:1362:A:C8    | 2.85                     | 0.65              |
| 33:DA:1435:G:C4   | 33:DA:1436:U:C5    | 2.85                     | 0.65              |
| 33:DA:1457:G:H2'  | 33:DA:1458:G:H8    | 1.62                     | 0.65              |
| 44:DL:73:LEU:HD21 | 44:DL:103:CYS:HB3  | 1.78                     | 0.65              |
| 45:DM:25:GLY:H    | 45:DM:28:ARG:HB2   | 1.62                     | 0.65              |
| 5:A4:2:LYS:O      | 5:A4:2:LYS:HD2     | 1.96                     | 0.65              |
| 7:AA:101:A:H3'    | 7:AA:102:G:H8      | 1.61                     | 0.65              |
| 8:AB:396:G:O3'    | 32:AZ:28:VAL:HG21  | 1.97                     | 0.65              |
| 8:AB:854:C:H2'    | 8:AB:855:G:H8      | 1.62                     | 0.65              |
| 8:AB:949:G:H5''   | 8:AB:950:G:OP2     | 1.97                     | 0.65              |
| 8:AB:2840:C:H5''  | 20:AN:53:THR:CG2   | 2.22                     | 0.65              |
| 9:AC:153:LEU:HG   | 9:AC:153:LEU:O     | 1.97                     | 0.65              |
| 10:AD:46:ARG:CD   | 10:AD:80:TRP:CZ2   | 2.79                     | 0.65              |
| 11:AE:153:LEU:HB2 | 11:AE:193:VAL:HG11 | 1.79                     | 0.65              |
| 16:AJ:3:THR:OG1   | 16:AJ:4:PHE:N      | 2.29                     | 0.65              |
| 24:AR:90:ARG:NH1  | 24:AR:92:TRP:CG    | 2.62                     | 0.65              |
| 25:AS:7:HIS:HB2   | 25:AS:103:ILE:HB   | 1.79                     | 0.65              |
| 26:AT:30:ILE:HG12 | 26:AT:31:VAL:H     | 1.62                     | 0.65              |
| 26:AT:43:ILE:O    | 26:AT:47:VAL:HG12  | 1.97                     | 0.65              |
| 33:BA:108:G:C6    | 52:BT:9:ARG:CG     | 2.80                     | 0.65              |
| 33:BA:373:A:H1'   | 33:BA:481:G:N3     | 2.12                     | 0.65              |
| 33:BA:557:G:C2    | 33:BA:558:G:C2     | 2.85                     | 0.65              |
| 33:BA:858:G:N2    | 33:BA:869:G:H2'    | 2.11                     | 0.65              |
| 33:BA:895:G:H2'   | 33:BA:896:C:O4'    | 1.96                     | 0.65              |
| 33:BA:1078:U:O2   | 37:BE:89:THR:HG23  | 1.97                     | 0.65              |
| 33:BA:1258:G:H2'  | 33:BA:1259:C:C6    | 2.32                     | 0.65              |
| 33:BA:1404:C:N4   | 33:BA:1497:G:H1    | 1.94                     | 0.65              |
| 33:BA:1435:G:H2'  | 33:BA:1436:U:C6    | 2.31                     | 0.65              |
| 34:BB:10:LYS:C    | 34:BB:12:GLY:H     | 1.99                     | 0.65              |
| 34:BB:37:VAL:HG22 | 34:BB:38:HIS:O     | 1.97                     | 0.65              |
| 53:BU:38:GLU:O    | 53:BU:41:THR:HB    | 1.97                     | 0.65              |
| 4:C3:33:THR:C     | 4:C3:34:LYS:HD2    | 2.17                     | 0.65              |
| 8:CB:566:U:C5     | 8:CB:567:U:H5      | 2.15                     | 0.65              |
| 8:CB:1108:U:N3    | 8:CB:1109:C:H5     | 1.94                     | 0.65              |
| 8:CB:1567:G:C8    | 8:CB:1567:G:H5''   | 2.31                     | 0.65              |
| 8:CB:1672:A:N6    | 8:CB:1673:G:C6     | 2.65                     | 0.65              |
| 8:CB:1838:C:H4'   | 8:CB:1839:G:C5'    | 2.27                     | 0.65              |
| 8:CB:1998:A:C6    | 8:CB:1999:C:C4     | 2.85                     | 0.65              |
| 8:CB:2051:A:H5''  | 8:CB:2051:A:H8     | 1.61                     | 0.65              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2487:G:H2'    | 8:CB:2488:G:H5'    | 1.78                     | 0.65              |
| 12:CF:121:PHE:CE1  | 12:CF:127:TYR:HB2  | 2.32                     | 0.65              |
| 13:CG:69:ALA:O     | 13:CG:72:ASN:HB3   | 1.96                     | 0.65              |
| 13:CG:120:ILE:HG23 | 13:CG:133:LYS:O    | 1.97                     | 0.65              |
| 15:CI:77:VAL:HG22  | 15:CI:80:LYS:HD2   | 1.78                     | 0.65              |
| 16:CJ:28:LEU:O     | 16:CJ:32:LEU:HB2   | 1.96                     | 0.65              |
| 17:CK:2:ILE:CG2    | 17:CK:67:LYS:HE3   | 2.25                     | 0.65              |
| 17:CK:95:ILE:HG23  | 17:CK:95:ILE:O     | 1.96                     | 0.65              |
| 18:CL:35:HIS:ND1   | 24:CR:84:ARG:CG    | 2.60                     | 0.65              |
| 22:CP:8:GLU:HA     | 22:CP:11:GLN:CG    | 2.27                     | 0.65              |
| 25:CS:27:LYS:HB2   | 25:CS:28:LYS:CE    | 2.26                     | 0.65              |
| 26:CT:15:HIS:H     | 26:CT:31:VAL:HG23  | 1.62                     | 0.65              |
| 28:CV:36:ALA:CB    | 28:CV:37:PRO:HD2   | 2.21                     | 0.65              |
| 30:CX:18:LEU:HA    | 30:CX:22:LEU:CB    | 2.27                     | 0.65              |
| 33:DA:60:A:H4'     | 33:DA:61:G:OP1     | 1.96                     | 0.65              |
| 33:DA:357:G:N3     | 33:DA:358:U:C5     | 2.65                     | 0.65              |
| 33:DA:445:G:C2     | 33:DA:446:G:C8     | 2.85                     | 0.65              |
| 33:DA:515:G:N2     | 33:DA:537:G:C4     | 2.65                     | 0.65              |
| 33:DA:682:G:N2     | 33:DA:709:U:C2     | 2.64                     | 0.65              |
| 33:DA:880:C:N3     | 33:DA:881:G:N7     | 2.45                     | 0.65              |
| 33:DA:900:A:H2'    | 33:DA:901:A:C8     | 2.32                     | 0.65              |
| 33:DA:1275:A:H2'   | 33:DA:1276:G:C8    | 2.31                     | 0.65              |
| 33:DA:1458:G:N3    | 33:DA:1459:G:C8    | 2.64                     | 0.65              |
| 40:DH:74:ILE:CG1   | 40:DH:128:VAL:HG12 | 2.26                     | 0.65              |
| 43:DK:23:HIS:HB3   | 43:DK:30:ILE:HD11  | 1.78                     | 0.65              |
| 49:DQ:62:GLU:HG2   | 49:DQ:63:CYS:N     | 2.11                     | 0.65              |
| 53:DU:16:ARG:HA    | 53:DU:19:LYS:HG3   | 1.79                     | 0.65              |
| 1:A0:30:ASP:CG     | 1:A0:31:LYS:HG3    | 2.17                     | 0.65              |
| 7:AA:70:C:O2'      | 7:AA:71:C:H5'      | 1.96                     | 0.65              |
| 8:AB:37:C:H42      | 8:AB:442:G:H1      | 1.44                     | 0.65              |
| 8:AB:123:G:N2      | 8:AB:129:C:C2      | 2.64                     | 0.65              |
| 8:AB:265:A:N6      | 8:AB:427:U:O2'     | 2.28                     | 0.65              |
| 8:AB:393:C:C3'     | 8:AB:394:C:H5''    | 2.27                     | 0.65              |
| 8:AB:764:A:H5''    | 8:AB:764:A:C8      | 2.31                     | 0.65              |
| 8:AB:827:U:O5'     | 8:AB:828:U:C5      | 2.50                     | 0.65              |
| 8:AB:1062:G:H1     | 8:AB:1076:C:N4     | 1.95                     | 0.65              |
| 8:AB:1228:G:H2'    | 8:AB:1229:C:H6     | 1.62                     | 0.65              |
| 8:AB:1268:A:C6     | 8:AB:2013:A:C8     | 2.85                     | 0.65              |
| 8:AB:2049:G:O2'    | 8:AB:2050:C:H5'    | 1.97                     | 0.65              |
| 8:AB:2102:G:H1     | 8:AB:2187:U:H3     | 1.44                     | 0.65              |
| 8:AB:2234:G:H2'    | 8:AB:2235:G:H8     | 1.62                     | 0.65              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2258:C:C5'    | 8:AB:2258:C:H6    | 2.09                     | 0.65              |
| 8:AB:2738:A:C2     | 8:AB:2739:U:C2    | 2.84                     | 0.65              |
| 9:AC:107:LYS:HB2   | 9:AC:194:VAL:HG11 | 1.80                     | 0.65              |
| 11:AE:46:GLN:NE2   | 11:AE:47:LYS:N    | 2.45                     | 0.65              |
| 14:AH:8:LYS:HB3    | 14:AH:14:SER:HA   | 1.79                     | 0.65              |
| 14:AH:9:VAL:O      | 14:AH:11:ASN:N    | 2.28                     | 0.65              |
| 16:AJ:42:ALA:C     | 23:AQ:63:ARG:HH12 | 2.00                     | 0.65              |
| 18:AL:55:MET:N     | 18:AL:56:PRO:CD   | 2.60                     | 0.65              |
| 19:AM:71:LYS:CE    | 19:AM:93:VAL:HG12 | 2.27                     | 0.65              |
| 33:BA:32:A:N6      | 33:BA:553:A:N1    | 2.45                     | 0.65              |
| 33:BA:375:U:H4'    | 48:BP:17:TYR:CE2  | 2.32                     | 0.65              |
| 33:BA:571:U:H5'    | 33:BA:572:A:OP2   | 1.96                     | 0.65              |
| 33:BA:794:A:C5     | 33:BA:795:C:C5    | 2.85                     | 0.65              |
| 33:BA:1107:C:OP1   | 35:BC:171:ARG:HB2 | 1.97                     | 0.65              |
| 33:BA:1237:C:H5''  | 33:BA:1238:A:H1'  | 1.78                     | 0.65              |
| 33:BA:1335:U:H5''  | 33:BA:1336:C:OP1  | 1.95                     | 0.65              |
| 34:BB:172:ILE:HA   | 34:BB:175:ALA:HB3 | 1.79                     | 0.65              |
| 37:BE:43:GLY:O     | 37:BE:73:VAL:HG23 | 1.97                     | 0.65              |
| 42:BJ:49:PHE:HB2   | 42:BJ:65:TYR:O    | 1.96                     | 0.65              |
| 43:BK:18:GLY:HA2   | 43:BK:36:ARG:H    | 1.61                     | 0.65              |
| 7:CA:48:U:OP2      | 21:CO:97:PHE:CE2  | 2.50                     | 0.65              |
| 7:CA:56:G:H21      | 7:CA:58:A:N6      | 1.95                     | 0.65              |
| 8:CB:141:G:C3'     | 8:CB:142:A:O4'    | 2.44                     | 0.65              |
| 8:CB:683:U:C2'     | 8:CB:684:G:O5'    | 2.45                     | 0.65              |
| 8:CB:1024:G:O6     | 8:CB:1025:G:C6    | 2.50                     | 0.65              |
| 8:CB:1093:G:H21    | 8:CB:1098:A:H62   | 1.45                     | 0.65              |
| 8:CB:1720:U:H2'    | 8:CB:1721:G:H5'   | 1.78                     | 0.65              |
| 8:CB:2027:G:C6     | 8:CB:2028:U:C4    | 2.85                     | 0.65              |
| 8:CB:2261:C:C2     | 8:CB:2280:G:N2    | 2.65                     | 0.65              |
| 8:CB:2308:G:H3'    | 8:CB:2308:G:N3    | 2.11                     | 0.65              |
| 8:CB:2455:G:C2     | 8:CB:2456:C:C4    | 2.85                     | 0.65              |
| 10:CD:33:ARG:HH21  | 10:CD:87:GLY:N    | 1.95                     | 0.65              |
| 10:CD:106:LYS:O    | 10:CD:206:ALA:HA  | 1.97                     | 0.65              |
| 16:CJ:19:ASP:O     | 16:CJ:20:ALA:HB3  | 1.96                     | 0.65              |
| 33:DA:934:C:C5     | 33:DA:1344:C:C2   | 2.85                     | 0.65              |
| 33:DA:1435:G:C6    | 33:DA:1436:U:O4   | 2.50                     | 0.65              |
| 35:DC:190:THR:HG22 | 35:DC:191:THR:N   | 2.11                     | 0.65              |
| 40:DH:37:ASN:O     | 40:DH:40:LYS:HB3  | 1.96                     | 0.65              |
| 53:DU:18:PHE:HA    | 53:DU:21:SER:HB3  | 1.78                     | 0.65              |
| 3:A2:25:LYS:HD3    | 8:AB:1368:G:O5'   | 1.96                     | 0.64              |
| 5:A4:30:GLU:HG3    | 5:A4:31:PRO:N     | 2.11                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:AA:6:G:H5'      | 7:AA:6:G:C8        | 2.31                     | 0.64              |
| 8:AB:215:G:H4'    | 8:AB:216:A:H4'     | 1.79                     | 0.64              |
| 8:AB:508:A:H2     | 25:AS:9:HIS:NE2    | 1.86                     | 0.64              |
| 8:AB:697:G:H1     | 8:AB:765:C:H42     | 1.42                     | 0.64              |
| 8:AB:843:G:C6     | 8:AB:844:A:C5      | 2.84                     | 0.64              |
| 8:AB:978:G:C5     | 8:AB:979:A:N7      | 2.65                     | 0.64              |
| 8:AB:1239:G:C5    | 8:AB:1240:U:C5     | 2.85                     | 0.64              |
| 8:AB:1334:G:H2'   | 8:AB:1335:C:H5'    | 1.78                     | 0.64              |
| 8:AB:1435:G:H2'   | 8:AB:1436:G:C8     | 2.27                     | 0.64              |
| 8:AB:1640:A:H2'   | 8:AB:1641:A:C8     | 2.31                     | 0.64              |
| 8:AB:1701:A:H2'   | 8:AB:1702:G:H5'    | 1.79                     | 0.64              |
| 8:AB:1816:C:H6    | 9:AC:62:ARG:NH1    | 1.94                     | 0.64              |
| 8:AB:1823:G:H5'   | 8:AB:1823:G:C8     | 2.29                     | 0.64              |
| 8:AB:1861:G:H5''  | 8:AB:1861:G:H8     | 1.61                     | 0.64              |
| 8:AB:2484:G:C1'   | 19:AM:119:LEU:HD12 | 2.19                     | 0.64              |
| 8:AB:2528:U:C2'   | 8:AB:2529:G:H5''   | 2.27                     | 0.64              |
| 10:AD:61:THR:H    | 10:AD:62:LYS:NZ    | 1.94                     | 0.64              |
| 27:AU:3:LYS:HD2   | 27:AU:81:ARG:HH11  | 1.62                     | 0.64              |
| 32:AZ:9:TYR:CG    | 32:AZ:10:GLU:N     | 2.65                     | 0.64              |
| 33:BA:1050:G:O2'  | 33:BA:1051:C:H5'   | 1.97                     | 0.64              |
| 47:BO:52:ARG:O    | 47:BO:55:LEU:HB3   | 1.97                     | 0.64              |
| 8:CB:79:C:H42     | 8:CB:107:G:H1      | 1.42                     | 0.64              |
| 8:CB:226:A:O2'    | 8:CB:227:A:H5'     | 1.96                     | 0.64              |
| 8:CB:307:G:H1'    | 8:CB:309:A:N7      | 2.11                     | 0.64              |
| 8:CB:446:G:OP2    | 23:CQ:2:ARG:NE     | 2.30                     | 0.64              |
| 8:CB:985:C:H2'    | 8:CB:986:C:C6      | 2.32                     | 0.64              |
| 8:CB:2048:G:C2    | 8:CB:2621:G:C2     | 2.85                     | 0.64              |
| 8:CB:2293:G:H5''  | 21:CO:9:ARG:NH1    | 2.12                     | 0.64              |
| 8:CB:2304:G:H5'   | 12:CF:128:SER:OG   | 1.98                     | 0.64              |
| 8:CB:2391:G:N1    | 8:CB:2424:C:H3'    | 2.13                     | 0.64              |
| 8:CB:2735:G:H2'   | 8:CB:2736:A:H8     | 1.62                     | 0.64              |
| 8:CB:2764:A:N6    | 8:CB:2766:A:C6     | 2.65                     | 0.64              |
| 10:CD:33:ARG:HH21 | 10:CD:87:GLY:CA    | 2.09                     | 0.64              |
| 11:CE:6:LYS:CG    | 11:CE:119:ILE:HB   | 2.28                     | 0.64              |
| 11:CE:154:ASP:OD1 | 11:CE:155:GLU:N    | 2.29                     | 0.64              |
| 16:CJ:59:ALA:C    | 16:CJ:61:LYS:H     | 2.00                     | 0.64              |
| 18:CL:92:LEU:CD1  | 18:CL:96:LYS:HB3   | 2.24                     | 0.64              |
| 25:CS:27:LYS:HB2  | 25:CS:28:LYS:HD2   | 1.79                     | 0.64              |
| 26:CT:6:ARG:O     | 26:CT:7:LEU:C      | 2.35                     | 0.64              |
| 26:CT:30:ILE:HG22 | 26:CT:85:VAL:CG2   | 2.27                     | 0.64              |
| 32:CZ:56:ARG:HH11 | 32:CZ:56:ARG:CB    | 2.09                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:25:C:H2'    | 33:DA:26:A:H8      | 1.62                     | 0.64              |
| 33:DA:58:C:H2'    | 33:DA:59:A:H5''    | 1.79                     | 0.64              |
| 33:DA:411:A:N3    | 33:DA:429:U:O4     | 2.31                     | 0.64              |
| 33:DA:524:G:H2'   | 33:DA:525:C:C6     | 2.32                     | 0.64              |
| 33:DA:1258:G:H22  | 33:DA:1278:G:H21   | 1.45                     | 0.64              |
| 33:DA:1410:A:H5'  | 33:DA:1411:C:OP2   | 1.97                     | 0.64              |
| 33:DA:1472:U:O2'  | 33:DA:1473:G:H5'   | 1.97                     | 0.64              |
| 37:DE:81:GLN:OE1  | 37:DE:148:SER:HA   | 1.97                     | 0.64              |
| 43:DK:19:VAL:HG12 | 43:DK:82:GLU:CB    | 2.27                     | 0.64              |
| 49:DQ:30:HIS:CE1  | 49:DQ:32:ILE:HG22  | 2.32                     | 0.64              |
| 1:A0:23:ALA:HB2   | 25:AS:23:LEU:HD13  | 1.80                     | 0.64              |
| 7:AA:73:A:H2'     | 7:AA:74:U:H5'      | 1.79                     | 0.64              |
| 7:AA:104:A:H1'    | 28:AV:31:TYR:HD1   | 1.61                     | 0.64              |
| 8:AB:190:A:C8     | 8:AB:207:A:C6      | 2.85                     | 0.64              |
| 8:AB:260:G:C2     | 8:AB:261:G:H1'     | 2.32                     | 0.64              |
| 8:AB:784:G:N2     | 8:AB:792:A:C5      | 2.65                     | 0.64              |
| 8:AB:810:U:OP1    | 55:AB:4385:HOH:O   | 2.14                     | 0.64              |
| 8:AB:1132:U:H6    | 8:AB:1132:U:H5''   | 1.63                     | 0.64              |
| 8:AB:2743:U:H3'   | 8:AB:2744:G:H5''   | 1.79                     | 0.64              |
| 8:AB:2886:A:C2    | 8:AB:2887:A:N7     | 2.65                     | 0.64              |
| 9:AC:197:ALA:C    | 9:AC:199:HIS:H     | 1.99                     | 0.64              |
| 11:AE:37:ALA:HA   | 11:AE:40:ARG:HE    | 1.61                     | 0.64              |
| 19:AM:68:PHE:HB3  | 19:AM:69:PRO:HD2   | 1.78                     | 0.64              |
| 19:AM:110:GLU:CB  | 19:AM:126:ILE:HG21 | 2.25                     | 0.64              |
| 21:AO:76:LYS:NZ   | 21:AO:80:GLU:H     | 1.95                     | 0.64              |
| 33:BA:275:G:N1    | 33:BA:276:G:C5     | 2.65                     | 0.64              |
| 33:BA:321:A:H4'   | 33:BA:1435:G:O2'   | 1.96                     | 0.64              |
| 33:BA:1087:G:C2   | 33:BA:1088:G:N7    | 2.66                     | 0.64              |
| 33:BA:1098:C:C2'  | 33:BA:1099:G:H5'   | 2.27                     | 0.64              |
| 34:BB:26:MET:HE2  | 34:BB:188:THR:HG22 | 1.79                     | 0.64              |
| 34:BB:214:GLY:HA2 | 34:BB:217:ALA:HB3  | 1.78                     | 0.64              |
| 45:BM:79:LEU:HB3  | 45:BM:86:ARG:HH12  | 1.61                     | 0.64              |
| 52:BT:28:ARG:O    | 52:BT:31:ILE:HG13  | 1.97                     | 0.64              |
| 2:C1:19:PHE:HD2   | 2:C1:40:PRO:HA     | 1.60                     | 0.64              |
| 8:CB:483:A:H1'    | 27:CU:43:LYS:CB    | 2.27                     | 0.64              |
| 8:CB:990:A:H8     | 8:CB:990:A:H5'     | 1.61                     | 0.64              |
| 8:CB:1068:G:N2    | 8:CB:1096:A:H5'    | 2.12                     | 0.64              |
| 8:CB:1450:G:H5''  | 8:CB:1450:G:C8     | 2.32                     | 0.64              |
| 8:CB:1764:C:C2    | 8:CB:1765:U:C5     | 2.83                     | 0.64              |
| 8:CB:1945:G:C2    | 8:CB:1946:U:C6     | 2.85                     | 0.64              |
| 8:CB:2023:C:H5''  | 8:CB:2023:C:H6     | 1.62                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2027:G:C2     | 8:CB:2037:A:C2     | 2.85                     | 0.64              |
| 8:CB:2469:A:O4'    | 19:CM:55:ARG:HD3   | 1.96                     | 0.64              |
| 8:CB:2562:U:H2'    | 8:CB:2563:U:H5'    | 1.78                     | 0.64              |
| 8:CB:2850:A:HO2'   | 8:CB:2851:A:H5'    | 1.62                     | 0.64              |
| 10:CD:37:VAL:HB    | 10:CD:46:ARG:HB2   | 1.78                     | 0.64              |
| 10:CD:62:LYS:O     | 10:CD:66:GLY:N     | 2.30                     | 0.64              |
| 10:CD:186:LEU:HD21 | 22:CP:5:LYS:HE2    | 1.79                     | 0.64              |
| 10:CD:189:VAL:O    | 10:CD:190:LYS:HB2  | 1.97                     | 0.64              |
| 14:CH:121:VAL:O    | 14:CH:122:LEU:HB2  | 1.97                     | 0.64              |
| 23:CQ:99:VAL:HG13  | 23:CQ:100:PHE:CD1  | 2.32                     | 0.64              |
| 25:CS:30:SER:C     | 25:CS:32:ALA:H     | 2.00                     | 0.64              |
| 29:CW:44:PHE:CE2   | 29:CW:60:ALA:HB3   | 2.31                     | 0.64              |
| 31:CY:2:LYS:CB     | 31:CY:37:ARG:HB2   | 2.27                     | 0.64              |
| 31:CY:11:SER:O     | 31:CY:12:ALA:HB2   | 1.97                     | 0.64              |
| 33:DA:33:A:H2'     | 33:DA:34:C:C6      | 2.32                     | 0.64              |
| 33:DA:605:U:O2'    | 33:DA:606:G:H5'    | 1.97                     | 0.64              |
| 33:DA:857:C:H2'    | 33:DA:858:G:C8     | 2.32                     | 0.64              |
| 33:DA:876:C:C1'    | 40:DH:11:THR:HG21  | 2.26                     | 0.64              |
| 34:DB:95:TRP:HH2   | 34:DB:100:LEU:HD13 | 1.62                     | 0.64              |
| 48:DP:39:PHE:CD2   | 48:DP:39:PHE:C     | 2.70                     | 0.64              |
| 2:A1:26:LYS:HE3    | 8:AB:2285:C:OP1    | 1.97                     | 0.64              |
| 2:A1:41:VAL:HB     | 2:A1:43:ARG:NH2    | 2.12                     | 0.64              |
| 8:AB:162:U:H4'     | 8:AB:163:C:OP1     | 1.97                     | 0.64              |
| 8:AB:197:A:C6      | 8:AB:2430:A:C2     | 2.85                     | 0.64              |
| 8:AB:230:G:C8      | 55:AB:4276:HOH:O   | 2.50                     | 0.64              |
| 8:AB:367:G:H3'     | 8:AB:368:A:H8      | 1.63                     | 0.64              |
| 8:AB:496:G:OP1     | 25:AS:1:MET:HE2    | 1.98                     | 0.64              |
| 8:AB:563:A:N1      | 8:AB:2018:G:C4     | 2.65                     | 0.64              |
| 8:AB:826:U:H5''    | 8:AB:827:U:OP2     | 1.98                     | 0.64              |
| 8:AB:831:G:N1      | 8:AB:832:U:C2      | 2.65                     | 0.64              |
| 8:AB:1672:A:C6     | 8:AB:1673:G:C5     | 2.85                     | 0.64              |
| 8:AB:2016:U:H2'    | 8:AB:2017:U:O4'    | 1.97                     | 0.64              |
| 8:AB:2199:A:O2'    | 32:AZ:32:LEU:HD23  | 1.97                     | 0.64              |
| 8:AB:2452:C:C5     | 8:AB:2453:A:C6     | 2.84                     | 0.64              |
| 8:AB:2525:G:N2     | 8:AB:2526:G:C5     | 2.66                     | 0.64              |
| 8:AB:2561:U:C2'    | 8:AB:2562:U:H5''   | 2.24                     | 0.64              |
| 16:AJ:34:ARG:HG3   | 16:AJ:39:LYS:HB2   | 1.79                     | 0.64              |
| 18:AL:37:GLY:CA    | 18:AL:41:ARG:HD3   | 2.28                     | 0.64              |
| 21:AO:58:ILE:HD11  | 21:AO:63:LYS:O     | 1.96                     | 0.64              |
| 24:AR:2:TYR:HB2    | 24:AR:45:GLU:HB3   | 1.80                     | 0.64              |
| 25:AS:4:ILE:HG22   | 25:AS:5:ALA:N      | 2.11                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:AS:92:ARG:HG3  | 25:AS:93:ALA:H     | 1.63                     | 0.64              |
| 26:AT:1:MET:C     | 26:AT:2:ILE:HD13   | 2.17                     | 0.64              |
| 27:AU:95:PHE:CD1  | 27:AU:102:ILE:HD12 | 2.32                     | 0.64              |
| 33:BA:411:A:OP2   | 36:BD:25:ARG:NH2   | 2.30                     | 0.64              |
| 33:BA:430:A:OP2   | 36:BD:6:PRO:HA     | 1.97                     | 0.64              |
| 33:BA:805:C:H2'   | 33:BA:806:C:C5     | 2.32                     | 0.64              |
| 33:BA:1073:U:O2'  | 33:BA:1074:G:O5'   | 2.15                     | 0.64              |
| 33:BA:1413:A:C2   | 33:BA:1414:U:H1'   | 2.32                     | 0.64              |
| 34:BB:68:PHE:HB2  | 34:BB:90:PHE:CB    | 2.23                     | 0.64              |
| 41:BI:44:ARG:O    | 41:BI:47:VAL:HG22  | 1.98                     | 0.64              |
| 2:C1:44:GLN:HB3   | 8:CB:2371:G:H4'    | 1.78                     | 0.64              |
| 7:CA:75:G:H2'     | 7:CA:76:G:H8       | 1.63                     | 0.64              |
| 8:CB:372:G:N7     | 32:CZ:53:THR:HG23  | 2.12                     | 0.64              |
| 8:CB:464:U:C3'    | 8:CB:465:G:H5''    | 2.27                     | 0.64              |
| 8:CB:574:A:H4'    | 8:CB:575:A:C5'     | 2.28                     | 0.64              |
| 8:CB:806:C:C2'    | 8:CB:807:U:H5'     | 2.27                     | 0.64              |
| 8:CB:1052:C:H2'   | 8:CB:1053:C:C5     | 2.33                     | 0.64              |
| 8:CB:1228:G:H2'   | 8:CB:1229:C:H6     | 1.62                     | 0.64              |
| 8:CB:1761:C:H2'   | 8:CB:1762:A:H5'    | 1.80                     | 0.64              |
| 8:CB:2082:A:C5    | 8:CB:2239:G:C2     | 2.86                     | 0.64              |
| 10:CD:81:GLU:HG3  | 10:CD:82:PHE:H     | 1.61                     | 0.64              |
| 11:CE:132:LYS:C   | 11:CE:134:LEU:H    | 2.00                     | 0.64              |
| 17:CK:20:MET:O    | 17:CK:41:ILE:HD12  | 1.97                     | 0.64              |
| 21:CO:27:VAL:HG22 | 21:CO:38:GLN:O     | 1.97                     | 0.64              |
| 22:CP:71:ARG:NH2  | 22:CP:102:ARG:HB3  | 2.13                     | 0.64              |
| 23:CQ:44:TYR:CD1  | 23:CQ:48:ASP:CG    | 2.70                     | 0.64              |
| 24:CR:33:VAL:HG22 | 24:CR:34:GLU:N     | 2.05                     | 0.64              |
| 26:CT:30:ILE:HG22 | 26:CT:85:VAL:HG22  | 1.80                     | 0.64              |
| 27:CU:25:LYS:O    | 27:CU:34:ILE:HG13  | 1.98                     | 0.64              |
| 33:DA:666:G:H5'   | 33:DA:726:C:H1'    | 1.78                     | 0.64              |
| 33:DA:1254:A:O4'  | 33:DA:1356:G:H5''  | 1.97                     | 0.64              |
| 44:DL:122:LYS:H   | 44:DL:122:LYS:HZ3  | 1.45                     | 0.64              |
| 1:A0:40:HIS:HB2   | 20:AN:99:LYS:O     | 1.98                     | 0.64              |
| 8:AB:18:U:H4'     | 23:AQ:22:GLY:HA3   | 1.79                     | 0.64              |
| 8:AB:85:G:OP2     | 27:AU:5:ARG:HG3    | 1.96                     | 0.64              |
| 8:AB:115:C:H3'    | 8:AB:115:C:C6      | 2.32                     | 0.64              |
| 8:AB:126:A:H2'    | 8:AB:126:A:N3      | 2.12                     | 0.64              |
| 8:AB:1796:U:O2'   | 8:AB:1797:G:H5'    | 1.97                     | 0.64              |
| 8:AB:1844:C:H5'   | 9:AC:251:THR:HB    | 1.78                     | 0.64              |
| 8:AB:2014:A:C2'   | 8:AB:2015:A:C8     | 2.72                     | 0.64              |
| 8:AB:2505:G:O2'   | 8:AB:2506:U:H5'    | 1.96                     | 0.64              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2679:A:H2'    | 8:AB:2680:U:C6    | 2.33                     | 0.64              |
| 8:AB:2692:G:H21    | 8:AB:2693:G:H1'   | 1.61                     | 0.64              |
| 8:AB:2863:C:O2'    | 8:AB:2864:G:H5'   | 1.97                     | 0.64              |
| 9:AC:220:ARG:HA    | 9:AC:220:ARG:CZ   | 2.28                     | 0.64              |
| 18:AL:27:LEU:HD12  | 18:AL:27:LEU:H    | 1.62                     | 0.64              |
| 18:AL:53:GLY:O     | 18:AL:54:GLN:O    | 2.15                     | 0.64              |
| 18:AL:86:GLU:N     | 18:AL:86:GLU:CD   | 2.48                     | 0.64              |
| 27:AU:61:GLU:HG2   | 27:AU:62:ALA:N    | 2.12                     | 0.64              |
| 31:AY:11:SER:O     | 31:AY:12:ALA:HB2  | 1.98                     | 0.64              |
| 32:AZ:56:ARG:HH11  | 32:AZ:56:ARG:HG3  | 1.63                     | 0.64              |
| 33:BA:71:A:OP2     | 33:BA:71:A:H2'    | 1.98                     | 0.64              |
| 33:BA:377:G:N2     | 33:BA:378:G:C4    | 2.65                     | 0.64              |
| 33:BA:407:U:O2'    | 36:BD:112:GLU:HA  | 1.98                     | 0.64              |
| 33:BA:1290:G:H2'   | 33:BA:1291:U:O4'  | 1.98                     | 0.64              |
| 34:BB:125:PHE:HD2  | 34:BB:125:PHE:H   | 1.44                     | 0.64              |
| 48:BP:61:VAL:CA    | 48:BP:65:ALA:HB3  | 2.18                     | 0.64              |
| 8:CB:271:G:H1'     | 8:CB:272:A:H8     | 1.57                     | 0.64              |
| 8:CB:332:A:C8      | 8:CB:335:C:N4     | 2.66                     | 0.64              |
| 8:CB:687:C:N4      | 8:CB:688:U:N3     | 2.46                     | 0.64              |
| 8:CB:969:G:C4      | 8:CB:970:U:C5     | 2.84                     | 0.64              |
| 8:CB:1068:G:H21    | 8:CB:1096:A:H5'   | 1.63                     | 0.64              |
| 8:CB:1153:C:OP2    | 55:CB:5207:HOH:O  | 2.15                     | 0.64              |
| 8:CB:1385:A:C4     | 8:CB:1403:A:C2    | 2.86                     | 0.64              |
| 8:CB:2544:G:H2'    | 8:CB:2545:G:C8    | 2.32                     | 0.64              |
| 8:CB:2766:A:N3     | 8:CB:2766:A:H2'   | 2.11                     | 0.64              |
| 9:CC:68:ARG:HH22   | 9:CC:190:THR:HG23 | 1.61                     | 0.64              |
| 9:CC:181:ARG:HB2   | 9:CC:263:ASP:OD2  | 1.97                     | 0.64              |
| 10:CD:65:ALA:C     | 10:CD:67:HIS:H    | 2.01                     | 0.64              |
| 10:CD:107:VAL:HG23 | 10:CD:204:LYS:O   | 1.97                     | 0.64              |
| 11:CE:40:ARG:NH2   | 11:CE:92:HIS:ND1  | 2.46                     | 0.64              |
| 14:CH:8:LYS:C      | 14:CH:9:VAL:HG22  | 2.17                     | 0.64              |
| 21:CO:25:ARG:HB3   | 21:CO:94:ARG:NH1  | 2.09                     | 0.64              |
| 22:CP:18:SER:HA    | 22:CP:87:ARG:NH2  | 2.13                     | 0.64              |
| 24:CR:47:VAL:HG22  | 24:CR:48:LYS:N    | 2.12                     | 0.64              |
| 33:DA:152:A:N6     | 33:DA:170:U:N3    | 2.45                     | 0.64              |
| 33:DA:323:U:H4'    | 52:DT:16:ALA:HB1  | 1.80                     | 0.64              |
| 33:DA:415:A:N6     | 33:DA:416:G:N2    | 2.45                     | 0.64              |
| 33:DA:806:C:O2     | 33:DA:807:A:N7    | 2.30                     | 0.64              |
| 33:DA:1019:A:H2'   | 33:DA:1020:G:C8   | 2.33                     | 0.64              |
| 33:DA:1416:G:C2    | 33:DA:1417:G:H1'  | 2.31                     | 0.64              |
| 36:DD:116:LEU:HD11 | 36:DD:153:ARG:HD2 | 1.78                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:A3:42:HIS:O     | 4:A3:43:LEU:HB2    | 1.97                     | 0.64              |
| 8:AB:79:C:C2'     | 8:AB:346:A:H8      | 2.11                     | 0.64              |
| 8:AB:615:U:H3'    | 8:AB:616:A:H5'     | 1.79                     | 0.64              |
| 8:AB:1307:A:C2    | 8:AB:1622:G:C2     | 2.85                     | 0.64              |
| 8:AB:1420:A:C2    | 8:AB:2211:A:C8     | 2.84                     | 0.64              |
| 8:AB:2282:G:C5    | 8:AB:2425:A:N1     | 2.65                     | 0.64              |
| 8:AB:2287:A:C2    | 8:AB:2289:G:C6     | 2.86                     | 0.64              |
| 8:AB:2358:A:C2'   | 8:AB:2359:C:H5'    | 2.27                     | 0.64              |
| 8:AB:2456:C:C4    | 8:AB:2457:U:H5     | 2.15                     | 0.64              |
| 8:AB:2461:A:C5    | 8:AB:2462:C:C5     | 2.86                     | 0.64              |
| 8:AB:2589:A:O2'   | 8:AB:2590:A:H5'    | 1.97                     | 0.64              |
| 8:AB:2727:A:C5    | 8:AB:2728:U:C5     | 2.86                     | 0.64              |
| 9:AC:141:HIS:O    | 9:AC:143:VAL:N     | 2.30                     | 0.64              |
| 9:AC:254:LYS:HZ3  | 9:AC:254:LYS:H     | 1.46                     | 0.64              |
| 14:AH:14:SER:O    | 14:AH:16:GLY:N     | 2.30                     | 0.64              |
| 14:AH:44:ILE:HG23 | 14:AH:47:PHE:HE2   | 1.63                     | 0.64              |
| 17:AK:78:ARG:HH22 | 22:AP:102:ARG:HH12 | 1.45                     | 0.64              |
| 23:AQ:24:TYR:HD1  | 23:AQ:25:GLY:N     | 1.96                     | 0.64              |
| 31:AY:9:THR:HB    | 31:AY:53:MET:C     | 2.17                     | 0.64              |
| 33:BA:60:A:P      | 33:BA:60:A:C8      | 2.87                     | 0.64              |
| 33:BA:483:C:N3    | 33:BA:484:G:C6     | 2.65                     | 0.64              |
| 33:BA:521:G:H1    | 33:BA:528:C:H42    | 1.45                     | 0.64              |
| 33:BA:1015:G:H2'  | 33:BA:1016:A:H8    | 1.61                     | 0.64              |
| 33:BA:1270:G:O5'  | 33:BA:1270:G:H8    | 1.79                     | 0.64              |
| 41:BI:10:ARG:HG3  | 41:BI:105:ARG:NE   | 2.11                     | 0.64              |
| 42:BJ:18:ILE:HA   | 42:BJ:21:ALA:HB3   | 1.78                     | 0.64              |
| 1:C0:40:HIS:CG    | 1:C0:41:HIS:N      | 2.65                     | 0.64              |
| 4:C3:12:ARG:HD2   | 18:CL:62:PRO:HG2   | 1.79                     | 0.64              |
| 8:CB:72:U:OP2     | 30:CX:54:LYS:HE2   | 1.97                     | 0.64              |
| 8:CB:98:G:H5''    | 8:CB:98:G:C8       | 2.32                     | 0.64              |
| 8:CB:204:A:O5'    | 8:CB:204:A:H2'     | 1.98                     | 0.64              |
| 8:CB:323:C:C5     | 8:CB:333:G:C8      | 2.86                     | 0.64              |
| 8:CB:745:G:N2     | 8:CB:753:A:N6      | 2.45                     | 0.64              |
| 8:CB:863:A:H2'    | 8:CB:864:G:O4'     | 1.98                     | 0.64              |
| 8:CB:1196:C:H2'   | 8:CB:1197:G:C8     | 2.32                     | 0.64              |
| 8:CB:1819:A:OP2   | 9:CC:153:LEU:HB2   | 1.98                     | 0.64              |
| 8:CB:2250:G:O6    | 19:CM:82:MET:CG    | 2.46                     | 0.64              |
| 8:CB:2352:A:H5'   | 8:CB:2352:A:C8     | 2.31                     | 0.64              |
| 8:CB:2840:C:H5''  | 20:CN:53:THR:CG2   | 2.24                     | 0.64              |
| 9:CC:141:HIS:O    | 9:CC:143:VAL:N     | 2.31                     | 0.64              |
| 9:CC:204:LEU:CD1  | 9:CC:210:ALA:HB1   | 2.28                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:CE:60:TRP:CZ3  | 11:CE:67:ARG:HB2  | 2.32                     | 0.64              |
| 15:CI:7:TYR:HA    | 15:CI:59:THR:HA   | 1.77                     | 0.64              |
| 19:CM:127:LYS:HD3 | 19:CM:127:LYS:C   | 2.17                     | 0.64              |
| 28:CV:73:LYS:HB3  | 28:CV:92:VAL:HG13 | 1.78                     | 0.64              |
| 33:DA:451:A:C1'   | 33:DA:452:A:N7    | 2.60                     | 0.64              |
| 33:DA:684:U:C4    | 33:DA:685:G:C2    | 2.86                     | 0.64              |
| 33:DA:712:A:N1    | 33:DA:713:G:C2    | 2.66                     | 0.64              |
| 33:DA:728:A:C6    | 33:DA:729:A:C6    | 2.86                     | 0.64              |
| 33:DA:1290:G:H8   | 33:DA:1290:G:O5'  | 1.80                     | 0.64              |
| 33:DA:1459:G:N1   | 33:DA:1460:C:C4   | 2.66                     | 0.64              |
| 33:DA:1525:G:P    | 53:DU:34:ARG:HH12 | 2.19                     | 0.64              |
| 4:A3:48:MET:HG2   | 8:AB:2360:G:OP1   | 1.98                     | 0.64              |
| 8:AB:2086:U:O2    | 8:AB:2234:G:C4    | 2.50                     | 0.64              |
| 8:AB:2383:G:C2    | 8:AB:2384:U:H5    | 2.14                     | 0.64              |
| 8:AB:2636:C:H2'   | 8:AB:2637:U:C6    | 2.32                     | 0.64              |
| 9:AC:243:PRO:HB3  | 9:AC:248:GLY:CA   | 2.26                     | 0.64              |
| 13:AG:91:VAL:O    | 13:AG:93:TYR:N    | 2.27                     | 0.64              |
| 16:AJ:37:ARG:HG3  | 16:AJ:118:MET:CE  | 2.27                     | 0.64              |
| 23:AQ:35:PHE:O    | 23:AQ:37:ALA:N    | 2.31                     | 0.64              |
| 26:AT:29:THR:HG22 | 26:AT:86:THR:CG2  | 2.28                     | 0.64              |
| 26:AT:68:LYS:NZ   | 26:AT:73:ARG:HA   | 2.13                     | 0.64              |
| 30:AX:22:LEU:HD21 | 30:AX:25:GLN:NE2  | 2.13                     | 0.64              |
| 33:BA:32:A:C2     | 33:BA:33:A:C5     | 2.85                     | 0.64              |
| 33:BA:50:A:H62    | 33:BA:361:G:H4'   | 1.63                     | 0.64              |
| 33:BA:509:A:N7    | 33:BA:510:A:C5    | 2.65                     | 0.64              |
| 33:BA:568:G:N2    | 33:BA:883:C:N1    | 2.45                     | 0.64              |
| 33:BA:602:A:H2    | 33:BA:637:C:N3    | 1.95                     | 0.64              |
| 33:BA:1527:U:O2'  | 33:BA:1528:U:H5'' | 1.97                     | 0.64              |
| 36:BD:63:ILE:HG22 | 36:BD:64:TYR:CD1  | 2.33                     | 0.64              |
| 44:BL:35:ARG:NH2  | 44:BL:36:VAL:HG22 | 2.04                     | 0.64              |
| 8:CB:37:C:O2'     | 11:CE:45:ALA:O    | 2.15                     | 0.64              |
| 8:CB:473:G:H2'    | 8:CB:474:G:H5'    | 1.79                     | 0.64              |
| 8:CB:690:G:H4'    | 9:CC:216:ARG:HH22 | 1.62                     | 0.64              |
| 8:CB:720:U:H2'    | 8:CB:721:A:C8     | 2.32                     | 0.64              |
| 8:CB:1069:A:H5'   | 8:CB:1070:A:H8    | 1.62                     | 0.64              |
| 8:CB:1195:G:C2    | 8:CB:1196:C:C5    | 2.84                     | 0.64              |
| 8:CB:1439:A:C2    | 8:CB:1553:A:C6    | 2.85                     | 0.64              |
| 8:CB:1527:G:N2    | 8:CB:1545:A:H62   | 1.96                     | 0.64              |
| 8:CB:1599:U:H2'   | 8:CB:1600:C:C6    | 2.33                     | 0.64              |
| 8:CB:1767:G:O2'   | 8:CB:1768:C:H5'   | 1.96                     | 0.64              |
| 8:CB:2104:C:C6    | 8:CB:2104:C:H3'   | 2.32                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2143:C:O5'    | 8:CB:2143:C:C6     | 2.50                     | 0.64              |
| 11:CE:130:LYS:C    | 11:CE:132:LYS:HE2  | 2.18                     | 0.64              |
| 14:CH:50:ARG:HG3   | 14:CH:51:ARG:N     | 2.11                     | 0.64              |
| 17:CK:32:TYR:N     | 17:CK:32:TYR:HD1   | 1.95                     | 0.64              |
| 18:CL:17:LYS:HG3   | 18:CL:18:ARG:N     | 2.10                     | 0.64              |
| 23:CQ:68:ALA:HB1   | 23:CQ:73:ILE:HG22  | 1.80                     | 0.64              |
| 29:CW:32:ALA:O     | 29:CW:66:VAL:HG21  | 1.97                     | 0.64              |
| 30:CX:2:LYS:H      | 30:CX:6:LEU:HD23   | 1.62                     | 0.64              |
| 30:CX:44:LYS:O     | 30:CX:44:LYS:HG3   | 1.96                     | 0.64              |
| 32:CZ:36:VAL:HA    | 32:CZ:42:PRO:HB3   | 1.80                     | 0.64              |
| 33:DA:453:G:C2'    | 33:DA:454:G:H8     | 2.11                     | 0.64              |
| 33:DA:639:G:C6     | 33:DA:640:A:N7     | 2.65                     | 0.64              |
| 33:DA:739:C:H2'    | 33:DA:740:U:O4'    | 1.96                     | 0.64              |
| 33:DA:1408:A:H1'   | 33:DA:1494:G:H22   | 1.63                     | 0.64              |
| 44:DL:20:VAL:HG13  | 44:DL:94:TYR:HE2   | 1.63                     | 0.64              |
| 8:AB:46:G:C2       | 8:AB:47:C:C5       | 2.85                     | 0.64              |
| 8:AB:107:G:C6      | 8:AB:108:G:N7      | 2.65                     | 0.64              |
| 8:AB:324:A:N7      | 8:AB:325:G:C5      | 2.65                     | 0.64              |
| 8:AB:501:A:N6      | 8:AB:502:A:N1      | 2.45                     | 0.64              |
| 8:AB:963:U:C4      | 8:AB:964:C:N4      | 2.65                     | 0.64              |
| 8:AB:1123:C:O2'    | 8:AB:1124:G:H5'    | 1.97                     | 0.64              |
| 8:AB:1217:U:O2     | 8:AB:1218:G:C8     | 2.50                     | 0.64              |
| 8:AB:1814:G:OP2    | 8:AB:1815:A:H2'    | 1.97                     | 0.64              |
| 8:AB:2090:A:C2     | 8:AB:2091:C:C4     | 2.86                     | 0.64              |
| 8:AB:2539:C:C5     | 8:AB:2540:C:C5     | 2.85                     | 0.64              |
| 10:AD:22:ILE:HG23  | 10:AD:22:ILE:O     | 1.98                     | 0.64              |
| 10:AD:107:VAL:HG23 | 10:AD:204:LYS:O    | 1.97                     | 0.64              |
| 11:AE:122:GLU:C    | 11:AE:123:LYS:HD2  | 2.18                     | 0.64              |
| 21:AO:9:ARG:HA     | 21:AO:12:THR:CG2   | 2.27                     | 0.64              |
| 22:AP:100:ARG:HG2  | 22:AP:102:ARG:HH21 | 1.63                     | 0.64              |
| 28:AV:30:ILE:HG22  | 28:AV:93:ARG:NH2   | 2.11                     | 0.64              |
| 33:BA:939:G:H1     | 33:BA:1344:C:H42   | 1.45                     | 0.64              |
| 37:BE:80:LEU:HB2   | 37:BE:97:PRO:HD3   | 1.79                     | 0.64              |
| 44:BL:33:CYS:HA    | 44:BL:54:VAL:HA    | 1.80                     | 0.64              |
| 45:BM:80:MET:O     | 45:BM:82:LEU:N     | 2.30                     | 0.64              |
| 5:C4:25:VAL:O      | 5:C4:26:ILE:HB     | 1.98                     | 0.64              |
| 7:CA:42:C:O2'      | 12:CF:62:GLN:HB3   | 1.98                     | 0.64              |
| 8:CB:13:A:C2       | 8:CB:526:A:N7      | 2.66                     | 0.64              |
| 8:CB:284:U:H2'     | 8:CB:285:G:C8      | 2.33                     | 0.64              |
| 8:CB:729:G:H2'     | 8:CB:729:G:N3      | 2.11                     | 0.64              |
| 8:CB:993:G:N2      | 8:CB:1162:G:C4     | 2.66                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1285:A:H2'   | 8:CB:1286:A:C5'    | 2.28                     | 0.64              |
| 8:CB:1816:C:C6    | 9:CC:62:ARG:NH1    | 2.65                     | 0.64              |
| 8:CB:1837:C:N3    | 8:CB:1899:A:N6     | 2.46                     | 0.64              |
| 8:CB:1877:A:H8    | 8:CB:1877:A:O5'    | 1.80                     | 0.64              |
| 8:CB:1984:G:C5    | 8:CB:1985:C:C5     | 2.86                     | 0.64              |
| 11:CE:138:LEU:HB3 | 11:CE:143:LEU:HD12 | 1.79                     | 0.64              |
| 14:CH:111:ALA:O   | 14:CH:113:SER:N    | 2.31                     | 0.64              |
| 17:CK:31:ARG:HB3  | 17:CK:32:TYR:CE1   | 2.32                     | 0.64              |
| 18:CL:79:LEU:H    | 18:CL:113:ALA:HB3  | 1.62                     | 0.64              |
| 19:CM:43:ALA:HB2  | 19:CM:91:TYR:O     | 1.97                     | 0.64              |
| 21:CO:39:VAL:O    | 21:CO:39:VAL:CG2   | 2.45                     | 0.64              |
| 23:CQ:44:TYR:O    | 23:CQ:48:ASP:N     | 2.30                     | 0.64              |
| 25:CS:86:MET:HG2  | 25:CS:87:PRO:HD2   | 1.78                     | 0.64              |
| 33:DA:107:G:H1    | 52:DT:6:ALA:HB1    | 1.63                     | 0.64              |
| 33:DA:232:G:H8    | 33:DA:232:G:C5'    | 2.11                     | 0.64              |
| 33:DA:390:U:H2'   | 33:DA:391:G:H8     | 1.61                     | 0.64              |
| 33:DA:522:C:H42   | 33:DA:528:C:N4     | 1.95                     | 0.64              |
| 33:DA:545:C:H5'   | 36:DD:68:GLU:HG2   | 1.78                     | 0.64              |
| 33:DA:794:A:H2'   | 33:DA:795:C:H6     | 1.62                     | 0.64              |
| 33:DA:899:C:C5    | 33:DA:900:A:C5     | 2.85                     | 0.64              |
| 33:DA:1322:C:H4'  | 33:DA:1323:G:OP1   | 1.97                     | 0.64              |
| 33:DA:1494:G:H8   | 33:DA:1494:G:H5'   | 1.62                     | 0.64              |
| 40:DH:76:ARG:HG3  | 40:DH:77:VAL:H     | 1.62                     | 0.64              |
| 46:DN:90:GLY:C    | 46:DN:92:ILE:H     | 1.99                     | 0.64              |
| 52:DT:38:ILE:C    | 52:DT:40:ALA:H     | 1.99                     | 0.64              |
| 53:DU:40:PRO:HB3  | 53:DU:44:ARG:HH21  | 1.63                     | 0.64              |
| 7:AA:28:C:H5'     | 7:AA:29:A:OP2      | 1.98                     | 0.64              |
| 7:AA:87:U:O2'     | 7:AA:88:C:H2'      | 1.98                     | 0.64              |
| 8:AB:28:A:C2'     | 8:AB:29:U:H5'      | 2.27                     | 0.64              |
| 8:AB:223:A:C5     | 8:AB:422:A:C8      | 2.86                     | 0.64              |
| 8:AB:299:A:H2'    | 8:AB:300:A:N7      | 2.13                     | 0.64              |
| 8:AB:647:G:H5''   | 8:AB:647:G:H8      | 1.63                     | 0.64              |
| 8:AB:994:C:N4     | 8:AB:1160:G:N1     | 2.45                     | 0.64              |
| 8:AB:1205:A:O2'   | 11:AE:164:LEU:HD11 | 1.98                     | 0.64              |
| 8:AB:1227:G:H5''  | 8:AB:1227:G:H8     | 1.63                     | 0.64              |
| 8:AB:1251:C:O2'   | 55:AB:4447:HOH:O   | 2.13                     | 0.64              |
| 8:AB:1343:G:N2    | 8:AB:1405:U:C4     | 2.66                     | 0.64              |
| 8:AB:1385:A:C4    | 8:AB:1403:A:C2     | 2.86                     | 0.64              |
| 8:AB:1771:C:H2'   | 8:AB:1772:A:C8     | 2.33                     | 0.64              |
| 8:AB:1998:A:C6    | 8:AB:1999:C:C4     | 2.86                     | 0.64              |
| 8:AB:2886:A:H2'   | 8:AB:2887:A:H8     | 1.62                     | 0.64              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AC:155:ARG:HD3   | 9:AC:155:ARG:C    | 2.18                     | 0.64              |
| 10:AD:52:THR:C     | 10:AD:75:ALA:HB1  | 2.19                     | 0.64              |
| 10:AD:109:VAL:HG12 | 10:AD:110:THR:H   | 1.62                     | 0.64              |
| 10:AD:178:VAL:HG23 | 10:AD:179:ARG:N   | 2.13                     | 0.64              |
| 11:AE:171:ASP:HA   | 11:AE:201:ALA:OXT | 1.98                     | 0.64              |
| 16:AJ:100:VAL:O    | 16:AJ:102:GLU:N   | 2.27                     | 0.64              |
| 19:AM:13:HIS:C     | 19:AM:14:LYS:HD2  | 2.19                     | 0.64              |
| 20:AN:25:ALA:CB    | 20:AN:44:LEU:HD11 | 2.24                     | 0.64              |
| 22:AP:27:VAL:HG13  | 22:AP:47:ILE:CD1  | 2.28                     | 0.64              |
| 22:AP:77:SER:H     | 22:AP:78:PRO:CD   | 2.11                     | 0.64              |
| 33:BA:1064:G:H4'   | 33:BA:1065:U:H4'  | 1.80                     | 0.64              |
| 37:BE:17:VAL:HB    | 37:BE:34:ALA:HB2  | 1.79                     | 0.64              |
| 40:BH:32:LYS:HA    | 40:BH:35:ILE:HD12 | 1.80                     | 0.64              |
| 45:BM:92:ARG:HB3   | 45:BM:92:ARG:NH1  | 2.12                     | 0.64              |
| 49:BQ:46:HIS:HE1   | 49:BQ:48:GLU:HB2  | 1.60                     | 0.64              |
| 8:CB:800:A:C4'     | 8:CB:801:G:H5'    | 2.28                     | 0.64              |
| 8:CB:836:G:C5      | 8:CB:837:C:C4     | 2.86                     | 0.64              |
| 8:CB:911:A:C6      | 19:CM:13:HIS:HD2  | 2.16                     | 0.64              |
| 8:CB:928:A:H1'     | 31:CY:1:ALA:HA    | 1.80                     | 0.64              |
| 8:CB:966:G:H1'     | 8:CB:2267:A:N6    | 2.12                     | 0.64              |
| 8:CB:1069:A:C5'    | 8:CB:1070:A:H8    | 2.11                     | 0.64              |
| 8:CB:1120:G:H2'    | 8:CB:1121:C:C6    | 2.33                     | 0.64              |
| 8:CB:2014:A:C2'    | 8:CB:2015:A:H8    | 2.01                     | 0.64              |
| 8:CB:2024:G:H5''   | 10:CD:154:LYS:NZ  | 2.12                     | 0.64              |
| 8:CB:2431:U:H2'    | 8:CB:2432:A:H5''  | 1.78                     | 0.64              |
| 8:CB:2886:A:H2'    | 8:CB:2887:A:H8    | 1.63                     | 0.64              |
| 11:CE:149:ILE:CG1  | 11:CE:186:VAL:HA  | 2.25                     | 0.64              |
| 11:CE:172:ALA:C    | 11:CE:174:GLY:H   | 1.99                     | 0.64              |
| 16:CJ:73:VAL:HA    | 16:CJ:88:THR:O    | 1.98                     | 0.64              |
| 19:CM:9:PHE:CZ     | 19:CM:12:MET:HB2  | 2.33                     | 0.64              |
| 24:CR:76:LYS:HD3   | 24:CR:90:ARG:HD2  | 1.78                     | 0.64              |
| 25:CS:1:MET:HE3    | 25:CS:4:ILE:HG13  | 1.78                     | 0.64              |
| 27:CU:49:PRO:HD2   | 27:CU:52:ASN:OD1  | 1.98                     | 0.64              |
| 33:DA:25:C:C5      | 33:DA:558:G:N2    | 2.65                     | 0.64              |
| 33:DA:403:C:H2'    | 33:DA:404:G:H8    | 1.62                     | 0.64              |
| 33:DA:895:G:N2     | 33:DA:896:C:C2    | 2.66                     | 0.64              |
| 33:DA:1130:A:H8    | 33:DA:1130:A:O5'  | 1.79                     | 0.64              |
| 33:DA:1169:A:C4    | 33:DA:1170:A:N7   | 2.66                     | 0.64              |
| 33:DA:1288:A:H2    | 33:DA:1352:C:O2   | 1.81                     | 0.64              |
| 35:DC:99:GLN:O     | 35:DC:100:ILE:HB  | 1.98                     | 0.64              |
| 36:DD:185:PRO:HB2  | 36:DD:190:LEU:CD1 | 2.27                     | 0.64              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:DE:36:THR:HG21  | 37:DE:63:MET:CA   | 2.28                     | 0.64              |
| 44:DL:35:ARG:O     | 44:DL:52:CYS:HB2  | 1.98                     | 0.64              |
| 46:DN:20:PHE:C     | 46:DN:24:ALA:HB2  | 2.18                     | 0.64              |
| 53:DU:34:ARG:HH21  | 53:DU:36:PHE:CA   | 2.11                     | 0.64              |
| 4:A3:35:LYS:HD3    | 4:A3:35:LYS:N     | 2.12                     | 0.64              |
| 5:A4:19:ARG:O      | 5:A4:20:ASP:HB3   | 1.98                     | 0.64              |
| 8:AB:204:A:C8      | 8:AB:206:U:C2     | 2.85                     | 0.64              |
| 8:AB:580:U:O3'     | 23:AQ:30:VAL:HG11 | 1.98                     | 0.64              |
| 8:AB:907:G:H1'     | 19:AM:68:PHE:HE2  | 1.60                     | 0.64              |
| 8:AB:1003:G:H5''   | 8:AB:1003:G:C8    | 2.31                     | 0.64              |
| 8:AB:1422:G:N2     | 8:AB:1423:G:C4    | 2.66                     | 0.64              |
| 8:AB:1440:U:H2'    | 8:AB:1441:G:C8    | 2.33                     | 0.64              |
| 8:AB:1451:C:H2'    | 8:AB:1458:U:O2    | 1.97                     | 0.64              |
| 8:AB:2748:A:N6     | 8:AB:2757:A:C8    | 2.66                     | 0.64              |
| 10:AD:31:ALA:HA    | 10:AD:49:GLN:NE2  | 2.13                     | 0.64              |
| 11:AE:141:MET:C    | 11:AE:143:LEU:N   | 2.47                     | 0.64              |
| 16:AJ:135:GLN:CG   | 16:AJ:137:PRO:HG2 | 2.24                     | 0.64              |
| 19:AM:41:LEU:CD1   | 19:AM:95:LEU:HD13 | 2.27                     | 0.64              |
| 19:AM:81:ARG:C     | 19:AM:83:GLY:N    | 2.47                     | 0.64              |
| 20:AN:96:ARG:HG2   | 20:AN:98:LEU:HD21 | 1.80                     | 0.64              |
| 24:AR:54:VAL:HG12  | 24:AR:55:ASP:N    | 2.12                     | 0.64              |
| 33:BA:161:A:H2'    | 33:BA:162:A:C8    | 2.32                     | 0.64              |
| 33:BA:555:U:H2'    | 33:BA:556:C:C6    | 2.30                     | 0.64              |
| 33:BA:895:G:C2     | 33:BA:896:C:C2    | 2.86                     | 0.64              |
| 33:BA:1132:C:H2'   | 33:BA:1133:G:H8   | 1.63                     | 0.64              |
| 35:BC:24:ASN:HB2   | 35:BC:27:GLU:OE1  | 1.98                     | 0.64              |
| 37:BE:46:GLY:HA3   | 37:BE:70:MET:HG2  | 1.80                     | 0.64              |
| 43:BK:30:ILE:HG22  | 43:BK:45:THR:CB   | 2.27                     | 0.64              |
| 43:BK:109:ILE:HD12 | 53:BU:16:ARG:HG2  | 1.79                     | 0.64              |
| 47:BO:54:GLY:O     | 47:BO:58:MET:HB2  | 1.98                     | 0.64              |
| 1:C0:22:THR:HG22   | 1:C0:23:ALA:N     | 2.13                     | 0.64              |
| 8:CB:538:A:H4'     | 16:CJ:8:PRO:O     | 1.98                     | 0.64              |
| 8:CB:688:U:H3'     | 8:CB:688:U:C6     | 2.31                     | 0.64              |
| 8:CB:797:G:C6      | 8:CB:798:G:N7     | 2.66                     | 0.64              |
| 8:CB:836:G:C5      | 8:CB:837:C:C5     | 2.85                     | 0.64              |
| 8:CB:910:A:C2      | 8:CB:911:A:N1     | 2.66                     | 0.64              |
| 8:CB:1438:U:O2'    | 8:CB:1439:A:O4'   | 2.16                     | 0.64              |
| 8:CB:1528:A:C4     | 8:CB:1544:A:C6    | 2.86                     | 0.64              |
| 8:CB:2821:A:H5''   | 10:CD:167:ASN:ND2 | 2.13                     | 0.64              |
| 9:CC:27:LYS:N      | 9:CC:28:PRO:HD3   | 2.13                     | 0.64              |
| 9:CC:254:LYS:HZ1   | 9:CC:254:LYS:N    | 1.96                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:CD:61:THR:HG23 | 10:CD:62:LYS:HD3   | 1.80                     | 0.64              |
| 10:CD:200:ASP:O   | 10:CD:201:LEU:HB2  | 1.97                     | 0.64              |
| 14:CH:31:VAL:HG12 | 14:CH:36:ALA:HA    | 1.80                     | 0.64              |
| 16:CJ:102:GLU:OE1 | 16:CJ:124:VAL:HG22 | 1.97                     | 0.64              |
| 16:CJ:130:HIS:C   | 16:CJ:132:HIS:N    | 2.50                     | 0.64              |
| 19:CM:90:GLU:HA   | 19:CM:91:TYR:CZ    | 2.33                     | 0.64              |
| 20:CN:47:VAL:O    | 20:CN:51:LEU:HD13  | 1.96                     | 0.64              |
| 22:CP:8:GLU:HA    | 22:CP:11:GLN:HG3   | 1.80                     | 0.64              |
| 23:CQ:14:LYS:HA   | 23:CQ:17:LEU:HB3   | 1.79                     | 0.64              |
| 24:CR:80:ARG:CG   | 24:CR:86:GLN:H     | 2.10                     | 0.64              |
| 27:CU:48:VAL:HG13 | 27:CU:51:LEU:CA    | 2.28                     | 0.64              |
| 30:CX:26:PHE:HD1  | 30:CX:26:PHE:N     | 1.96                     | 0.64              |
| 31:CY:1:ALA:HB1   | 31:CY:37:ARG:HB3   | 1.79                     | 0.64              |
| 33:DA:15:G:C2     | 33:DA:16:A:C5      | 2.86                     | 0.64              |
| 33:DA:124:C:C4    | 33:DA:125:U:H5     | 2.16                     | 0.64              |
| 33:DA:158:G:C6    | 33:DA:159:G:N7     | 2.66                     | 0.64              |
| 33:DA:185:U:H6    | 33:DA:185:U:H3'    | 1.63                     | 0.64              |
| 33:DA:617:G:N2    | 33:DA:624:C:C4     | 2.66                     | 0.64              |
| 33:DA:1068:G:O2'  | 33:DA:1069:C:H5'   | 1.96                     | 0.64              |
| 33:DA:1434:A:C8   | 33:DA:1435:G:N7    | 2.66                     | 0.64              |
| 35:DC:163:ARG:O   | 35:DC:164:THR:HG23 | 1.98                     | 0.64              |
| 35:DC:198:LYS:HB3 | 35:DC:200:TRP:HZ3  | 1.63                     | 0.64              |
| 38:DF:93:LYS:O    | 38:DF:94:HIS:HB2   | 1.96                     | 0.64              |
| 41:DI:28:VAL:HG13 | 41:DI:32:ARG:O     | 1.97                     | 0.64              |
| 45:DM:39:ALA:O    | 45:DM:42:VAL:HG22  | 1.98                     | 0.64              |
| 1:A0:39:ARG:HD3   | 8:AB:2816:G:H5'    | 1.79                     | 0.64              |
| 2:A1:45:HIS:O     | 2:A1:46:VAL:HG12   | 1.98                     | 0.64              |
| 4:A3:43:LEU:O     | 4:A3:44:ARG:HG3    | 1.98                     | 0.64              |
| 5:A4:2:LYS:HB3    | 5:A4:2:LYS:NZ      | 2.12                     | 0.64              |
| 5:A4:24:ARG:HH22  | 5:A4:36:ARG:CG     | 2.11                     | 0.64              |
| 5:A4:36:ARG:HG2   | 5:A4:38:GLY:O      | 1.98                     | 0.64              |
| 8:AB:675:A:C6     | 8:AB:676:A:N1      | 2.66                     | 0.64              |
| 8:AB:768:G:C6     | 8:AB:769:U:N3      | 2.60                     | 0.64              |
| 8:AB:979:A:H3'    | 8:AB:980:A:H5''    | 1.80                     | 0.64              |
| 8:AB:1456:G:H2'   | 8:AB:1457:U:H5'    | 1.79                     | 0.64              |
| 8:AB:1615:C:C2    | 8:AB:1617:C:H6     | 2.15                     | 0.64              |
| 8:AB:1936:A:H2    | 8:AB:1943:U:O4     | 1.81                     | 0.64              |
| 8:AB:2408:U:H2'   | 8:AB:2409:G:C8     | 2.33                     | 0.64              |
| 13:AG:63:GLN:O    | 13:AG:67:ALA:HB2   | 1.98                     | 0.64              |
| 16:AJ:7:LYS:HD3   | 16:AJ:7:LYS:H      | 1.62                     | 0.64              |
| 16:AJ:127:GLY:C   | 16:AJ:128:ASN:HD22 | 2.00                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:AL:94:THR:O     | 18:AL:96:LYS:N     | 2.31                     | 0.64              |
| 25:AS:86:MET:HG2   | 25:AS:87:PRO:HD2   | 1.80                     | 0.64              |
| 26:AT:10:VAL:O     | 26:AT:34:VAL:HG13  | 1.97                     | 0.64              |
| 29:AW:21:GLY:HA2   | 29:AW:25:PHE:CE1   | 2.32                     | 0.64              |
| 32:AZ:17:SER:OG    | 32:AZ:18:CYS:N     | 2.31                     | 0.64              |
| 33:BA:158:G:C5     | 33:BA:159:G:N7     | 2.65                     | 0.64              |
| 33:BA:570:G:C6     | 33:BA:873:A:C2     | 2.86                     | 0.64              |
| 33:BA:785:G:C6     | 33:BA:786:G:N7     | 2.66                     | 0.64              |
| 33:BA:1430:A:N6    | 33:BA:1431:A:C2    | 2.66                     | 0.64              |
| 36:BD:60:VAL:O     | 36:BD:64:TYR:HD1   | 1.81                     | 0.64              |
| 36:BD:202:LEU:C    | 36:BD:203:TYR:HD2  | 2.02                     | 0.64              |
| 49:BQ:9:GLY:HA3    | 49:BQ:24:ILE:HG13  | 1.79                     | 0.64              |
| 53:BU:20:ARG:HA    | 53:BU:24:LYS:HE3   | 1.78                     | 0.64              |
| 8:CB:379:G:N2      | 8:CB:396:G:C5      | 2.66                     | 0.64              |
| 8:CB:673:C:H2'     | 8:CB:674:G:H5'     | 1.79                     | 0.64              |
| 8:CB:697:G:H1      | 8:CB:765:C:H42     | 1.45                     | 0.64              |
| 8:CB:749:A:O2'     | 8:CB:1617:C:O2'    | 2.12                     | 0.64              |
| 8:CB:870:U:H3      | 8:CB:907:G:H1      | 1.44                     | 0.64              |
| 8:CB:1191:G:C2'    | 8:CB:1192:G:H5'    | 2.28                     | 0.64              |
| 8:CB:1335:C:H2'    | 8:CB:1336:A:C8     | 2.28                     | 0.64              |
| 8:CB:2270:A:H2'    | 8:CB:2271:G:C5'    | 2.28                     | 0.64              |
| 8:CB:2722:G:O4'    | 20:CN:4:ARG:HG3    | 1.98                     | 0.64              |
| 8:CB:2764:A:H2'    | 8:CB:2765:A:C5'    | 2.27                     | 0.64              |
| 9:CC:84:PRO:C      | 9:CC:86:ARG:H      | 2.02                     | 0.64              |
| 12:CF:3:LEU:O      | 12:CF:3:LEU:HD23   | 1.97                     | 0.64              |
| 17:CK:98:ARG:C     | 17:CK:99:ILE:HD12  | 2.19                     | 0.64              |
| 18:CL:85:VAL:HG13  | 18:CL:86:GLU:N     | 2.12                     | 0.64              |
| 19:CM:91:TYR:N     | 19:CM:91:TYR:CD2   | 2.66                     | 0.64              |
| 20:CN:25:ALA:CB    | 20:CN:44:LEU:HD11  | 2.24                     | 0.64              |
| 22:CP:29:VAL:CG2   | 22:CP:47:ILE:HD11  | 2.28                     | 0.64              |
| 25:CS:75:PHE:HD1   | 25:CS:75:PHE:N     | 1.96                     | 0.64              |
| 29:CW:36:ILE:HD12  | 29:CW:36:ILE:C     | 2.19                     | 0.64              |
| 30:CX:15:ASN:OD1   | 30:CX:18:LEU:HD21  | 1.98                     | 0.64              |
| 33:DA:204:G:N3     | 33:DA:466:A:N6     | 2.45                     | 0.64              |
| 33:DA:350:G:H5'    | 33:DA:350:G:C8     | 2.28                     | 0.64              |
| 33:DA:439:U:C6     | 33:DA:440:C:C5     | 2.85                     | 0.64              |
| 33:DA:541:G:H2'    | 33:DA:542:G:H8     | 1.60                     | 0.64              |
| 33:DA:1387:G:C2    | 33:DA:1388:C:C2    | 2.86                     | 0.64              |
| 34:DB:101:THR:C    | 34:DB:103:TRP:H    | 2.01                     | 0.64              |
| 36:DD:84:ASN:HD21  | 36:DD:87:GLU:HB2   | 1.60                     | 0.64              |
| 37:DE:114:LEU:HD23 | 37:DE:119:VAL:HG21 | 1.79                     | 0.64              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:DH:53:ASP:OD2   | 40:DH:54:THR:N     | 2.31                     | 0.64              |
| 43:DK:83:VAL:HB    | 43:DK:109:ILE:HG22 | 1.80                     | 0.64              |
| 1:A0:19:ASP:O      | 1:A0:20:ALA:C      | 2.35                     | 0.63              |
| 5:A4:18:LYS:O      | 5:A4:18:LYS:HD2    | 1.97                     | 0.63              |
| 7:AA:44:G:N2       | 7:AA:46:A:H61      | 1.91                     | 0.63              |
| 7:AA:87:U:H2'      | 7:AA:88:C:O5'      | 1.98                     | 0.63              |
| 8:AB:78:U:H2'      | 8:AB:79:C:O4'      | 1.96                     | 0.63              |
| 8:AB:80:G:H5'      | 8:AB:346:A:H1'     | 1.80                     | 0.63              |
| 8:AB:692:C:H5''    | 9:AC:42:ARG:H      | 1.64                     | 0.63              |
| 8:AB:777:G:C2      | 8:AB:778:G:C8      | 2.86                     | 0.63              |
| 8:AB:799:G:C6      | 8:AB:800:A:C6      | 2.86                     | 0.63              |
| 8:AB:1359:A:C2     | 8:AB:1360:G:C1'    | 2.70                     | 0.63              |
| 8:AB:1805:A:C2     | 8:AB:1813:G:C2     | 2.86                     | 0.63              |
| 8:AB:2512:C:H2'    | 8:AB:2513:A:O4'    | 1.98                     | 0.63              |
| 9:AC:30:ALA:H      | 9:AC:31:PRO:HD2    | 1.63                     | 0.63              |
| 9:AC:62:ARG:HH11   | 9:AC:62:ARG:HG2    | 1.62                     | 0.63              |
| 14:AH:144:VAL:HG12 | 14:AH:145:ASN:H    | 1.63                     | 0.63              |
| 19:AM:8:LYS:O      | 19:AM:8:LYS:HG2    | 1.98                     | 0.63              |
| 21:AO:76:LYS:HG3   | 21:AO:77:ALA:N     | 2.12                     | 0.63              |
| 22:AP:45:VAL:HG13  | 22:AP:65:ASN:HD21  | 1.61                     | 0.63              |
| 25:AS:86:MET:O     | 25:AS:94:ASP:OD2   | 2.15                     | 0.63              |
| 26:AT:25:GLU:O     | 26:AT:26:LYS:C     | 2.36                     | 0.63              |
| 33:BA:410:G:H5''   | 33:BA:411:A:OP2    | 1.98                     | 0.63              |
| 33:BA:512:U:C2     | 33:BA:513:C:C5     | 2.86                     | 0.63              |
| 33:BA:560:A:C8     | 33:BA:566:G:C4     | 2.86                     | 0.63              |
| 33:BA:936:C:H2'    | 33:BA:937:A:C8     | 2.33                     | 0.63              |
| 33:BA:1049:U:H2'   | 46:BN:2:LYS:HE3    | 1.79                     | 0.63              |
| 33:BA:1181:G:H2'   | 33:BA:1182:G:N7    | 2.13                     | 0.63              |
| 33:BA:1258:G:H1    | 33:BA:1277:C:H42   | 1.43                     | 0.63              |
| 33:BA:1473:G:O2'   | 33:BA:1474:U:H5'   | 1.97                     | 0.63              |
| 34:BB:19:THR:HG23  | 34:BB:20:ARG:H     | 1.63                     | 0.63              |
| 35:BC:41:TYR:HA    | 35:BC:44:LYS:HD3   | 1.79                     | 0.63              |
| 36:BD:155:LYS:HA   | 36:BD:158:LEU:HD12 | 1.79                     | 0.63              |
| 37:BE:20:VAL:HB    | 37:BE:31:SER:O     | 1.98                     | 0.63              |
| 39:BG:2:ARG:HG2    | 39:BG:2:ARG:O      | 1.97                     | 0.63              |
| 7:CA:74:U:H2'      | 7:CA:75:G:C8       | 2.32                     | 0.63              |
| 8:CB:187:G:H3'     | 8:CB:187:G:C8      | 2.33                     | 0.63              |
| 8:CB:298:G:N2      | 8:CB:339:U:H5      | 1.93                     | 0.63              |
| 8:CB:322:A:OP2     | 11:CE:162:ARG:HB3  | 1.97                     | 0.63              |
| 8:CB:585:G:C5      | 8:CB:1251:C:C4     | 2.87                     | 0.63              |
| 8:CB:1707:G:H8     | 8:CB:1707:G:H5'    | 1.64                     | 0.63              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2201:G:C6     | 8:CB:2202:U:O2     | 2.51                     | 0.63              |
| 8:CB:2525:G:N2     | 8:CB:2526:G:C5     | 2.67                     | 0.63              |
| 8:CB:2650:U:C2     | 8:CB:2671:G:N2     | 2.66                     | 0.63              |
| 8:CB:2821:A:OP2    | 10:CD:115:GLY:HA3  | 1.98                     | 0.63              |
| 9:CC:125:PRO:O     | 9:CC:192:GLY:HA3   | 1.98                     | 0.63              |
| 11:CE:114:ARG:O    | 11:CE:115:GLN:C    | 2.36                     | 0.63              |
| 13:CG:32:LEU:HD21  | 13:CG:135:ALA:CB   | 2.27                     | 0.63              |
| 18:CL:92:LEU:N     | 18:CL:96:LYS:HD3   | 2.13                     | 0.63              |
| 20:CN:29:VAL:CG2   | 20:CN:75:ILE:HD11  | 2.28                     | 0.63              |
| 28:CV:51:GLN:HA    | 28:CV:56:PHE:CD1   | 2.33                     | 0.63              |
| 29:CW:44:PHE:CZ    | 29:CW:60:ALA:CB    | 2.81                     | 0.63              |
| 29:CW:44:PHE:HE2   | 29:CW:80:SER:HA    | 1.63                     | 0.63              |
| 29:CW:74:LYS:HG3   | 29:CW:75:ASN:N     | 2.11                     | 0.63              |
| 30:CX:51:ALA:C     | 30:CX:52:ARG:HG3   | 2.17                     | 0.63              |
| 33:DA:186:C:H42    | 33:DA:191:G:H1     | 1.45                     | 0.63              |
| 33:DA:453:G:N3     | 33:DA:454:G:C8     | 2.66                     | 0.63              |
| 33:DA:781:A:H3'    | 33:DA:781:A:C8     | 2.33                     | 0.63              |
| 33:DA:1064:G:OP1   | 33:DA:1386:G:H4'   | 1.97                     | 0.63              |
| 33:DA:1078:U:H4'   | 37:DE:137:ARG:NH1  | 2.13                     | 0.63              |
| 33:DA:1178:G:H5''  | 33:DA:1178:G:C8    | 2.27                     | 0.63              |
| 38:DF:88:MET:HG2   | 38:DF:89:VAL:H     | 1.63                     | 0.63              |
| 8:AB:750:A:H2'     | 8:AB:751:A:H5''    | 1.80                     | 0.63              |
| 8:AB:1090:A:O2'    | 8:AB:1091:G:H8     | 1.81                     | 0.63              |
| 8:AB:1091:G:N2     | 8:AB:1092:C:C2     | 2.66                     | 0.63              |
| 8:AB:1965:C:C4     | 8:AB:1966:A:C5     | 2.86                     | 0.63              |
| 8:AB:2027:G:C6     | 8:AB:2028:U:C4     | 2.85                     | 0.63              |
| 8:AB:2070:A:H2'    | 8:AB:2071:A:O4'    | 1.97                     | 0.63              |
| 8:AB:2749:A:H5''   | 8:AB:2750:A:H2'    | 1.79                     | 0.63              |
| 9:AC:204:LEU:HB3   | 9:AC:210:ALA:HB1   | 1.79                     | 0.63              |
| 11:AE:18:THR:O     | 11:AE:18:THR:HG22  | 1.99                     | 0.63              |
| 14:AH:35:LYS:HD2   | 14:AH:35:LYS:N     | 2.12                     | 0.63              |
| 15:AI:100:ILE:HD11 | 15:AI:137:LEU:HD22 | 1.80                     | 0.63              |
| 18:AL:94:THR:H     | 18:AL:96:LYS:HZ2   | 1.44                     | 0.63              |
| 19:AM:42:THR:HG1   | 19:AM:45:GLN:HB2   | 1.60                     | 0.63              |
| 24:AR:24:LYS:HZ3   | 24:AR:66:HIS:CE1   | 2.16                     | 0.63              |
| 26:AT:34:VAL:HG11  | 26:AT:43:ILE:CD1   | 2.28                     | 0.63              |
| 31:AY:26:LEU:HB2   | 31:AY:28:LEU:HD13  | 1.80                     | 0.63              |
| 33:BA:555:U:C4     | 33:BA:556:C:N4     | 2.67                     | 0.63              |
| 33:BA:604:G:C5     | 33:BA:605:U:C4     | 2.86                     | 0.63              |
| 33:BA:1253:G:C5'   | 33:BA:1253:G:C8    | 2.81                     | 0.63              |
| 33:BA:1255:G:H22   | 33:BA:1276:G:H22   | 1.47                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BD:58:GLN:O    | 36:BD:62:ARG:HG2   | 1.97                     | 0.63              |
| 39:BG:112:ASP:HB2 | 39:BG:118:ARG:HG3  | 1.81                     | 0.63              |
| 1:C0:29:VAL:CG1   | 1:C0:30:ASP:N      | 2.62                     | 0.63              |
| 8:CB:527:C:H5''   | 8:CB:2779:U:O2     | 1.98                     | 0.63              |
| 8:CB:843:G:H5'    | 8:CB:844:A:OP2     | 1.98                     | 0.63              |
| 8:CB:871:U:H4'    | 19:CM:68:PHE:CZ    | 2.34                     | 0.63              |
| 8:CB:1189:A:C2    | 8:CB:1190:G:HI'    | 2.33                     | 0.63              |
| 8:CB:1283:G:H3'   | 8:CB:1283:G:C8     | 2.33                     | 0.63              |
| 8:CB:1334:G:H2'   | 8:CB:1335:C:H5'    | 1.79                     | 0.63              |
| 8:CB:1831:G:C5    | 8:CB:1832:C:C5     | 2.86                     | 0.63              |
| 8:CB:1939:U:H3'   | 8:CB:1940:U:H5'    | 1.80                     | 0.63              |
| 8:CB:2394:C:OP1   | 18:CL:63:LYS:HG3   | 1.99                     | 0.63              |
| 8:CB:2466:C:HI'   | 19:CM:118:LYS:NZ   | 2.12                     | 0.63              |
| 8:CB:2715:C:C2'   | 8:CB:2716:C:H5'    | 2.29                     | 0.63              |
| 8:CB:2733:A:C8    | 8:CB:2733:A:C3'    | 2.77                     | 0.63              |
| 8:CB:2885:G:C6    | 8:CB:2886:A:C8     | 2.86                     | 0.63              |
| 19:CM:43:ALA:C    | 19:CM:45:GLN:N     | 2.52                     | 0.63              |
| 21:CO:29:HIS:C    | 21:CO:30:ARG:HD3   | 2.18                     | 0.63              |
| 22:CP:25:VAL:HG13 | 22:CP:87:ARG:HA    | 1.80                     | 0.63              |
| 23:CQ:37:ALA:HA   | 23:CQ:39:ILE:HG22  | 1.80                     | 0.63              |
| 24:CR:6:GLN:HA    | 24:CR:10:LYS:HB2   | 1.80                     | 0.63              |
| 24:CR:39:LEU:H    | 24:CR:61:ALA:HB2   | 1.63                     | 0.63              |
| 25:CS:7:HIS:CD2   | 25:CS:10:ALA:HB2   | 2.33                     | 0.63              |
| 33:DA:123:U:H2'   | 33:DA:124:C:C6     | 2.33                     | 0.63              |
| 33:DA:161:A:C2    | 33:DA:162:A:C4     | 2.86                     | 0.63              |
| 33:DA:445:G:C2    | 33:DA:490:C:N3     | 2.66                     | 0.63              |
| 33:DA:452:A:H62   | 33:DA:480:U:H3     | 1.46                     | 0.63              |
| 33:DA:872:A:N7    | 33:DA:874:G:C8     | 2.67                     | 0.63              |
| 33:DA:1176:A:H2'  | 33:DA:1177:G:O4'   | 1.97                     | 0.63              |
| 36:DD:2:ARG:HG2   | 36:DD:2:ARG:NH1    | 2.14                     | 0.63              |
| 36:DD:26:ALA:C    | 36:DD:28:ASP:H     | 2.01                     | 0.63              |
| 36:DD:130:ASN:H   | 36:DD:130:ASN:HD22 | 1.47                     | 0.63              |
| 37:DE:15:ILE:HD11 | 37:DE:37:VAL:HG23  | 1.79                     | 0.63              |
| 38:DF:38:ARG:HB2  | 38:DF:96:VAL:O     | 1.99                     | 0.63              |
| 38:DF:43:GLY:HA2  | 38:DF:58:HIS:CD2   | 2.33                     | 0.63              |
| 41:DI:70:GLY:O    | 41:DI:74:GLN:HG2   | 1.99                     | 0.63              |
| 46:DN:11:LYS:O    | 46:DN:15:LEU:HB2   | 1.98                     | 0.63              |
| 47:DO:14:PHE:HE2  | 47:DO:83:ARG:NH2   | 1.96                     | 0.63              |
| 7:AA:73:A:C8      | 7:AA:74:U:C5       | 2.86                     | 0.63              |
| 8:AB:115:C:C4     | 8:AB:116:C:C5      | 2.79                     | 0.63              |
| 8:AB:538:A:H2'    | 8:AB:539:G:C8      | 2.31                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:990:A:H8     | 8:AB:990:A:H5'     | 1.64                     | 0.63              |
| 8:AB:1026:G:O2'   | 8:AB:1027:A:H8     | 1.76                     | 0.63              |
| 8:AB:1216:G:C2    | 8:AB:1217:U:H6     | 2.15                     | 0.63              |
| 8:AB:1381:G:C2'   | 8:AB:1382:G:H5'    | 2.27                     | 0.63              |
| 8:AB:1687:G:H1'   | 8:AB:1702:G:N2     | 2.12                     | 0.63              |
| 8:AB:1823:G:H2'   | 8:AB:1824:G:O4'    | 1.97                     | 0.63              |
| 8:AB:1853:A:H2'   | 8:AB:1854:A:C8     | 2.34                     | 0.63              |
| 8:AB:1897:G:O2'   | 8:AB:1898:U:H5'    | 1.98                     | 0.63              |
| 8:AB:1945:G:C2    | 8:AB:1946:U:C6     | 2.86                     | 0.63              |
| 8:AB:2359:C:H1'   | 8:AB:2360:G:H5'    | 1.79                     | 0.63              |
| 8:AB:2572:A:OP2   | 10:AD:151:THR:HA   | 1.98                     | 0.63              |
| 12:AF:33:ILE:HD11 | 12:AF:90:LEU:HD13  | 1.80                     | 0.63              |
| 18:AL:103:ILE:O   | 18:AL:103:ILE:HG22 | 1.97                     | 0.63              |
| 19:AM:11:LYS:CG   | 19:AM:12:MET:H     | 2.10                     | 0.63              |
| 23:AQ:111:LYS:CD  | 24:AR:52:PRO:HB3   | 2.25                     | 0.63              |
| 24:AR:77:PHE:O    | 24:AR:78:ARG:HG3   | 1.99                     | 0.63              |
| 33:BA:101:A:C5    | 33:BA:102:G:C8     | 2.86                     | 0.63              |
| 33:BA:124:C:C4    | 33:BA:125:U:H5     | 2.16                     | 0.63              |
| 33:BA:858:G:N1    | 33:BA:869:G:H2'    | 2.13                     | 0.63              |
| 33:BA:945:G:C6    | 33:BA:946:A:C8     | 2.87                     | 0.63              |
| 33:BA:1080:A:C8   | 33:BA:1081:A:H1'   | 2.33                     | 0.63              |
| 33:BA:1412:C:H2'  | 33:BA:1413:A:C8    | 2.32                     | 0.63              |
| 43:BK:86:LYS:HB2  | 43:BK:112:VAL:HG23 | 1.79                     | 0.63              |
| 53:BU:20:ARG:HA   | 53:BU:24:LYS:CG    | 2.27                     | 0.63              |
| 7:CA:51:G:N1      | 21:CO:33:ARG:NH2   | 2.47                     | 0.63              |
| 8:CB:763:G:H3'    | 8:CB:763:G:C8      | 2.34                     | 0.63              |
| 8:CB:1047:G:H1'   | 8:CB:1110:G:N2     | 2.14                     | 0.63              |
| 8:CB:1566:A:C2    | 9:CC:213:ARG:CZ    | 2.81                     | 0.63              |
| 8:CB:1771:C:N4    | 8:CB:1772:A:N6     | 2.46                     | 0.63              |
| 8:CB:1796:U:C2    | 8:CB:1797:G:C8     | 2.86                     | 0.63              |
| 8:CB:2052:A:H4'   | 10:CD:148:GLN:O    | 1.98                     | 0.63              |
| 8:CB:2136:G:C6    | 8:CB:2156:G:O2'    | 2.51                     | 0.63              |
| 8:CB:2144:G:N2    | 8:CB:2148:G:H21    | 1.93                     | 0.63              |
| 8:CB:2728:U:H2'   | 8:CB:2729:G:H8     | 1.61                     | 0.63              |
| 8:CB:2798:U:H4'   | 8:CB:2800:A:C2     | 2.34                     | 0.63              |
| 9:CC:155:ARG:HD3  | 9:CC:155:ARG:O     | 1.97                     | 0.63              |
| 13:CG:79:THR:CG2  | 13:CG:80:GLU:N     | 2.54                     | 0.63              |
| 14:CH:3:VAL:N     | 14:CH:21:VAL:HG11  | 2.13                     | 0.63              |
| 18:CL:123:ARG:HB2 | 18:CL:143:GLU:H    | 1.63                     | 0.63              |
| 19:CM:86:LYS:CG   | 19:CM:87:GLY:H     | 2.04                     | 0.63              |
| 22:CP:25:VAL:O    | 22:CP:27:VAL:N     | 2.30                     | 0.63              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:CP:61:ARG:HB3   | 22:CP:61:ARG:NH1  | 2.13                     | 0.63              |
| 27:CU:10:VAL:HG12  | 27:CU:70:ALA:HA   | 1.80                     | 0.63              |
| 30:CX:9:LYS:HE2    | 30:CX:11:VAL:HG11 | 1.80                     | 0.63              |
| 33:DA:71:A:OP2     | 33:DA:71:A:H2'    | 1.97                     | 0.63              |
| 33:DA:433:G:C2     | 33:DA:434:U:H1'   | 2.34                     | 0.63              |
| 33:DA:499:A:C2     | 33:DA:546:A:N3    | 2.66                     | 0.63              |
| 33:DA:1079:G:C4    | 33:DA:1080:A:C2   | 2.87                     | 0.63              |
| 33:DA:1349:A:N6    | 33:DA:1373:G:H1'  | 2.14                     | 0.63              |
| 33:DA:1403:C:O5'   | 33:DA:1403:C:H6   | 1.82                     | 0.63              |
| 33:DA:1409:C:C6    | 33:DA:1409:C:C3'  | 2.81                     | 0.63              |
| 35:DC:17:TRP:CZ3   | 46:DN:93:PRO:HA   | 2.33                     | 0.63              |
| 39:DG:8:GLN:HG2    | 39:DG:10:LYS:HD2  | 1.79                     | 0.63              |
| 7:AA:26:C:C6       | 7:AA:26:C:H5'     | 2.33                     | 0.63              |
| 8:AB:948:C:O4'     | 8:AB:984:A:C2     | 2.50                     | 0.63              |
| 8:AB:1061:U:O4'    | 8:AB:1070:A:H1'   | 1.98                     | 0.63              |
| 8:AB:1204:A:C2     | 8:AB:1241:A:N1    | 2.67                     | 0.63              |
| 8:AB:1283:G:H3'    | 8:AB:1283:G:C8    | 2.33                     | 0.63              |
| 8:AB:1799:G:OP1    | 9:AC:255:LYS:HE3  | 1.99                     | 0.63              |
| 8:AB:2425:A:O4'    | 8:AB:2427:C:C5    | 2.51                     | 0.63              |
| 8:AB:2544:G:H2'    | 8:AB:2545:G:C8    | 2.33                     | 0.63              |
| 8:AB:2794:C:H2'    | 8:AB:2795:C:C6    | 2.34                     | 0.63              |
| 8:AB:2885:G:C5     | 8:AB:2886:A:H8    | 2.16                     | 0.63              |
| 9:AC:152:GLN:OE1   | 9:AC:153:LEU:HB3  | 1.99                     | 0.63              |
| 10:AD:3:GLY:C      | 10:AD:4:LEU:HD22  | 2.18                     | 0.63              |
| 10:AD:33:ARG:NH2   | 10:AD:91:THR:HG21 | 2.13                     | 0.63              |
| 13:AG:106:LEU:HD12 | 13:AG:106:LEU:N   | 2.14                     | 0.63              |
| 16:AJ:17:VAL:HG13  | 16:AJ:57:LEU:HD21 | 1.80                     | 0.63              |
| 18:AL:135:ILE:HG22 | 18:AL:138:ALA:HB3 | 1.78                     | 0.63              |
| 19:AM:134:THR:HA   | 28:AV:79:ARG:NH1  | 2.12                     | 0.63              |
| 20:AN:1:MET:SD     | 20:AN:2:ARG:HB2   | 2.39                     | 0.63              |
| 26:AT:30:ILE:HG22  | 26:AT:85:VAL:HG22 | 1.81                     | 0.63              |
| 30:AX:27:ASN:O     | 30:AX:29:ARG:N    | 2.32                     | 0.63              |
| 30:AX:48:ARG:O     | 30:AX:50:VAL:HG23 | 1.98                     | 0.63              |
| 33:BA:161:A:H2'    | 33:BA:162:A:H8    | 1.62                     | 0.63              |
| 33:BA:186:C:H42    | 33:BA:191:G:H1    | 1.44                     | 0.63              |
| 33:BA:868:C:C2'    | 33:BA:869:G:H5'   | 2.27                     | 0.63              |
| 33:BA:1389:C:H2'   | 33:BA:1390:U:C6   | 2.33                     | 0.63              |
| 51:BS:35:ARG:HB2   | 51:BS:35:ARG:HH11 | 1.63                     | 0.63              |
| 3:C2:24:THR:O      | 3:C2:28:ARG:HB2   | 1.98                     | 0.63              |
| 5:C4:31:PRO:HG2    | 13:CG:169:ARG:NH2 | 2.13                     | 0.63              |
| 8:CB:409:G:H2'     | 8:CB:410:G:C8     | 2.34                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:585:G:C4     | 8:CB:1251:C:N4     | 2.66                     | 0.63              |
| 8:CB:668:A:C2     | 8:CB:670:A:C2      | 2.87                     | 0.63              |
| 8:CB:1842:G:N2    | 8:CB:1901:A:C4     | 2.66                     | 0.63              |
| 8:CB:2233:U:H2'   | 8:CB:2234:G:H8     | 1.63                     | 0.63              |
| 8:CB:2380:C:H2'   | 8:CB:2381:A:C8     | 2.33                     | 0.63              |
| 8:CB:2682:A:C2    | 8:CB:2683:C:N3     | 2.66                     | 0.63              |
| 9:CC:243:PRO:CA   | 9:CC:249:VAL:HG23  | 2.27                     | 0.63              |
| 10:CD:60:VAL:C    | 10:CD:63:PRO:HD2   | 2.19                     | 0.63              |
| 16:CJ:98:GLU:HG2  | 16:CJ:126:ALA:HB2  | 1.80                     | 0.63              |
| 19:CM:40:ARG:NH2  | 19:CM:92:TRP:CZ3   | 2.66                     | 0.63              |
| 21:CO:36:TYR:HA   | 21:CO:52:SER:CB    | 2.29                     | 0.63              |
| 21:CO:52:SER:HA   | 21:CO:74:VAL:HG11  | 1.80                     | 0.63              |
| 23:CQ:88:GLU:HA   | 24:CR:53:PHE:CD1   | 2.32                     | 0.63              |
| 24:CR:86:GLN:HB3  | 24:CR:87:GLN:HG2   | 1.79                     | 0.63              |
| 28:CV:59:GLU:HG2  | 28:CV:60:VAL:N     | 2.12                     | 0.63              |
| 33:DA:130:A:N1    | 33:DA:233:C:HI'    | 2.13                     | 0.63              |
| 33:DA:231:U:H2'   | 33:DA:232:G:H5''   | 1.81                     | 0.63              |
| 33:DA:543:U:H2'   | 33:DA:544:G:C8     | 2.32                     | 0.63              |
| 33:DA:705:G:N7    | 33:DA:706:A:C8     | 2.66                     | 0.63              |
| 33:DA:968:A:H4'   | 33:DA:969:A:OP2    | 1.96                     | 0.63              |
| 33:DA:1183:U:H3'  | 33:DA:1184:G:H5''  | 1.81                     | 0.63              |
| 33:DA:1339:A:H8   | 33:DA:1339:A:O5'   | 1.82                     | 0.63              |
| 33:DA:1353:G:H2'  | 33:DA:1354:U:H5''  | 1.80                     | 0.63              |
| 36:DD:59:LYS:HE2  | 36:DD:60:VAL:HG22  | 1.79                     | 0.63              |
| 36:DD:154:VAL:O   | 36:DD:158:LEU:HG   | 1.98                     | 0.63              |
| 38:DF:67:PRO:O    | 38:DF:70:VAL:HG22  | 1.98                     | 0.63              |
| 38:DF:68:GLN:O    | 38:DF:72:ASP:HB2   | 1.98                     | 0.63              |
| 38:DF:74:LEU:HD21 | 38:DF:78:PHE:CE1   | 2.33                     | 0.63              |
| 39:DG:70:PRO:CD   | 39:DG:102:TRP:HZ3  | 2.11                     | 0.63              |
| 39:DG:115:MET:HE1 | 39:DG:119:LEU:HD13 | 1.80                     | 0.63              |
| 46:DN:42:ASN:HB3  | 46:DN:46:LYS:CE    | 2.28                     | 0.63              |
| 6:A5:148:PRO:O    | 6:A5:152:GLN:HG3   | 1.98                     | 0.63              |
| 8:AB:150:U:H2'    | 8:AB:151:C:O4'     | 1.98                     | 0.63              |
| 8:AB:539:G:H2'    | 8:AB:540:C:C6      | 2.33                     | 0.63              |
| 8:AB:860:U:C1'    | 8:AB:2268:A:H5'    | 2.27                     | 0.63              |
| 8:AB:947:A:H8     | 8:AB:947:A:O5'     | 1.81                     | 0.63              |
| 8:AB:1478:G:H8    | 8:AB:1478:G:O5'    | 1.80                     | 0.63              |
| 8:AB:1663:G:O2'   | 8:AB:1664:A:H8     | 1.81                     | 0.63              |
| 8:AB:1809:A:H5''  | 8:AB:1810:A:OP2    | 1.98                     | 0.63              |
| 8:AB:2023:C:H2'   | 8:AB:2024:G:H8     | 1.62                     | 0.63              |
| 8:AB:2839:G:C2    | 8:AB:2840:C:C2     | 2.86                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2861:U:H2'   | 8:AB:2862:G:H8     | 1.63                     | 0.63              |
| 10:AD:137:SER:OG  | 10:AD:138:LEU:HD23 | 1.99                     | 0.63              |
| 17:AK:12:ASP:HB3  | 17:AK:85:VAL:HG22  | 1.80                     | 0.63              |
| 18:AL:25:SER:C    | 18:AL:27:LEU:N     | 2.50                     | 0.63              |
| 19:AM:76:LYS:NZ   | 19:AM:81:ARG:HA    | 2.13                     | 0.63              |
| 22:AP:18:SER:HA   | 22:AP:87:ARG:NH2   | 2.13                     | 0.63              |
| 24:AR:18:GLN:HA   | 24:AR:98:ILE:O     | 1.99                     | 0.63              |
| 24:AR:23:GLU:HB2  | 24:AR:96:VAL:HG13  | 1.79                     | 0.63              |
| 24:AR:72:VAL:HG12 | 24:AR:92:TRP:HE1   | 1.62                     | 0.63              |
| 27:AU:9:GLU:HB2   | 27:AU:71:ILE:HG13  | 1.80                     | 0.63              |
| 32:AZ:15:SER:HB3  | 32:AZ:23:LYS:HD3   | 1.80                     | 0.63              |
| 33:BA:527:G:N1    | 33:BA:528:C:C4     | 2.65                     | 0.63              |
| 33:BA:577:G:O2'   | 33:BA:578:C:H5'    | 1.98                     | 0.63              |
| 33:BA:737:C:H3'   | 33:BA:737:C:C6     | 2.33                     | 0.63              |
| 33:BA:889:A:H5'   | 33:BA:891:U:H1'    | 1.81                     | 0.63              |
| 33:BA:972:C:OP2   | 33:BA:1366:C:H5'   | 1.98                     | 0.63              |
| 33:BA:1484:C:O2'  | 33:BA:1485:U:H5'   | 1.98                     | 0.63              |
| 33:BA:1489:G:H2'  | 33:BA:1490:U:H5''  | 1.80                     | 0.63              |
| 34:BB:65:LYS:HB3  | 34:BB:89:PHE:HE1   | 1.63                     | 0.63              |
| 36:BD:64:TYR:HB3  | 36:BD:66:VAL:HG23  | 1.81                     | 0.63              |
| 36:BD:97:LEU:HD13 | 36:BD:136:VAL:CG2  | 2.29                     | 0.63              |
| 38:BF:71:ILE:O    | 38:BF:75:GLU:HB2   | 1.98                     | 0.63              |
| 44:BL:117:GLY:O   | 44:BL:118:VAL:HG13 | 1.99                     | 0.63              |
| 48:BP:76:LYS:HA   | 48:BP:80:LYS:HB2   | 1.79                     | 0.63              |
| 51:BS:31:ARG:HA   | 51:BS:49:ALA:HB3   | 1.79                     | 0.63              |
| 1:C0:6:LYS:HD3    | 1:C0:7:PRO:HD2     | 1.79                     | 0.63              |
| 2:C1:46:VAL:HG22  | 2:C1:47:ILE:HG13   | 1.80                     | 0.63              |
| 7:CA:34:A:H1'     | 7:CA:36:C:N4       | 2.13                     | 0.63              |
| 7:CA:42:C:HO2'    | 12:CF:62:GLN:HB3   | 1.63                     | 0.63              |
| 8:CB:1:G:H2'      | 8:CB:2:G:C8        | 2.33                     | 0.63              |
| 8:CB:104:A:H3'    | 8:CB:104:A:C8      | 2.34                     | 0.63              |
| 8:CB:173:A:H2'    | 8:CB:174:U:H6      | 1.64                     | 0.63              |
| 8:CB:738:G:N1     | 8:CB:739:A:C2      | 2.67                     | 0.63              |
| 8:CB:1010:A:H2'   | 8:CB:1011:G:O5'    | 1.99                     | 0.63              |
| 8:CB:1217:U:O2    | 8:CB:1218:G:C8     | 2.52                     | 0.63              |
| 8:CB:1550:C:H2'   | 8:CB:1551:A:H8     | 1.64                     | 0.63              |
| 8:CB:1663:G:O2'   | 8:CB:1664:A:H8     | 1.81                     | 0.63              |
| 8:CB:2059:A:C6    | 8:CB:2503:A:C2     | 2.87                     | 0.63              |
| 8:CB:2282:G:C5    | 8:CB:2425:A:N1     | 2.66                     | 0.63              |
| 8:CB:2758:A:C2    | 8:CB:2759:G:H1'    | 2.32                     | 0.63              |
| 8:CB:2891:U:H3'   | 8:CB:2891:U:C6     | 2.29                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:CC:134:ILE:HD13 | 9:CC:135:PRO:HD2   | 1.79                     | 0.63              |
| 9:CC:243:PRO:HB3  | 9:CC:248:GLY:CA    | 2.27                     | 0.63              |
| 13:CG:10:VAL:HG13 | 13:CG:14:VAL:CB    | 2.20                     | 0.63              |
| 16:CJ:128:ASN:O   | 16:CJ:130:HIS:N    | 2.31                     | 0.63              |
| 19:CM:31:PHE:CE1  | 19:CM:126:ILE:O    | 2.51                     | 0.63              |
| 22:CP:25:VAL:O    | 22:CP:47:ILE:HB    | 1.98                     | 0.63              |
| 22:CP:51:ASN:HD21 | 22:CP:97:TYR:HD2   | 1.45                     | 0.63              |
| 24:CR:86:GLN:CG   | 24:CR:87:GLN:HE21  | 2.10                     | 0.63              |
| 31:CY:1:ALA:HB3   | 31:CY:38:GLU:H     | 1.62                     | 0.63              |
| 33:DA:474:G:H2'   | 33:DA:475:C:O4'    | 1.98                     | 0.63              |
| 33:DA:611:C:C5    | 33:DA:612:C:C5     | 2.87                     | 0.63              |
| 33:DA:620:C:O2    | 36:DD:131:ILE:HG21 | 1.98                     | 0.63              |
| 33:DA:697:U:O2    | 33:DA:798:U:H1'    | 1.98                     | 0.63              |
| 33:DA:763:G:H2'   | 33:DA:764:C:C6     | 2.31                     | 0.63              |
| 33:DA:882:C:H42   | 44:DL:1:ALA:HB2    | 1.64                     | 0.63              |
| 33:DA:1206:G:O4'  | 35:DC:193:GLY:HA2  | 1.98                     | 0.63              |
| 33:DA:1223:C:OP1  | 33:DA:1224:U:H3'   | 1.98                     | 0.63              |
| 34:DB:80:LYS:O    | 34:DB:84:LEU:HD22  | 1.99                     | 0.63              |
| 37:DE:11:GLN:HG2  | 37:DE:39:GLY:O     | 1.99                     | 0.63              |
| 41:DI:20:ILE:HG12 | 41:DI:62:LEU:HD12  | 1.80                     | 0.63              |
| 4:A3:2:LYS:HE2    | 4:A3:2:LYS:O       | 1.99                     | 0.63              |
| 4:A3:24:LYS:HB2   | 18:AL:64:PHE:HD1   | 1.63                     | 0.63              |
| 8:AB:150:U:O5'    | 8:AB:150:U:H6      | 1.81                     | 0.63              |
| 8:AB:959:A:H4'    | 8:AB:959:A:OP2     | 1.97                     | 0.63              |
| 8:AB:1216:G:C2'   | 8:AB:1217:U:H5'    | 2.28                     | 0.63              |
| 8:AB:1447:C:H2'   | 8:AB:1448:G:C8     | 2.33                     | 0.63              |
| 8:AB:1854:A:H2    | 8:AB:2087:G:N3     | 1.97                     | 0.63              |
| 8:AB:2095:A:H8    | 8:AB:2095:A:C5'    | 2.05                     | 0.63              |
| 8:AB:2247:A:C8    | 55:AB:4607:HOH:O   | 2.50                     | 0.63              |
| 8:AB:2357:G:C5    | 8:AB:2359:C:OP2    | 2.52                     | 0.63              |
| 8:AB:2478:A:C8    | 8:AB:2478:A:C5'    | 2.81                     | 0.63              |
| 8:AB:2500:U:O2    | 8:AB:2504:U:C5     | 2.52                     | 0.63              |
| 11:AE:170:ARG:CZ  | 11:AE:170:ARG:HB3  | 2.28                     | 0.63              |
| 12:AF:133:GLU:CG  | 12:AF:134:GLN:N    | 2.54                     | 0.63              |
| 18:AL:94:THR:HA   | 18:AL:96:LYS:HZ3   | 1.64                     | 0.63              |
| 18:AL:102:GLY:O   | 18:AL:105:ILE:HG23 | 1.97                     | 0.63              |
| 21:AO:111:ARG:HD3 | 21:AO:117:PHE:CD2  | 2.34                     | 0.63              |
| 24:AR:85:LYS:O    | 24:AR:87:GLN:N     | 2.31                     | 0.63              |
| 32:AZ:9:TYR:CE2   | 32:AZ:26:SER:C     | 2.72                     | 0.63              |
| 32:AZ:36:VAL:HG22 | 32:AZ:42:PRO:HB3   | 1.80                     | 0.63              |
| 33:BA:108:G:C6    | 52:BT:9:ARG:HG2    | 2.34                     | 0.63              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:565:U:H2'    | 33:BA:566:G:C8    | 2.34                     | 0.63              |
| 33:BA:1102:A:H8    | 33:BA:1102:A:C5'  | 2.11                     | 0.63              |
| 33:BA:1332:A:N1    | 33:BA:1333:A:C5   | 2.66                     | 0.63              |
| 35:BC:185:THR:HG22 | 35:BC:186:SER:H   | 1.63                     | 0.63              |
| 36:BD:10:LEU:HD21  | 36:BD:62:ARG:CD   | 2.28                     | 0.63              |
| 39:BG:67:ASN:N     | 39:BG:67:ASN:HD22 | 1.96                     | 0.63              |
| 8:CB:42:A:C6       | 8:CB:43:G:N7      | 2.67                     | 0.63              |
| 8:CB:215:G:H4'     | 8:CB:216:A:H4'    | 1.81                     | 0.63              |
| 8:CB:396:G:C2      | 8:CB:397:U:C2     | 2.86                     | 0.63              |
| 8:CB:1088:A:H4'    | 8:CB:1089:A:H8    | 1.63                     | 0.63              |
| 8:CB:1274:A:N3     | 8:CB:1297:C:H1'   | 2.14                     | 0.63              |
| 8:CB:1393:A:O2'    | 8:CB:1394:U:H5'   | 1.97                     | 0.63              |
| 8:CB:1435:G:H2'    | 8:CB:1436:G:C8    | 2.28                     | 0.63              |
| 8:CB:1595:C:H2'    | 8:CB:1596:A:C8    | 2.33                     | 0.63              |
| 8:CB:2276:G:P      | 19:CM:82:MET:HB3  | 2.38                     | 0.63              |
| 8:CB:2306:C:N3     | 12:CF:39:VAL:HB   | 2.13                     | 0.63              |
| 9:CC:103:ILE:HG23  | 9:CC:104:LEU:O    | 1.99                     | 0.63              |
| 13:CG:10:VAL:O     | 13:CG:10:VAL:HG12 | 1.97                     | 0.63              |
| 15:CI:32:VAL:HG22  | 15:CI:60:VAL:CG2  | 2.28                     | 0.63              |
| 19:CM:43:ALA:C     | 19:CM:45:GLN:H    | 2.00                     | 0.63              |
| 32:CZ:48:GLN:HE22  | 32:CZ:49:ARG:CD   | 2.11                     | 0.63              |
| 33:DA:425:G:O2'    | 33:DA:426:U:H5'   | 1.99                     | 0.63              |
| 33:DA:612:C:C2     | 33:DA:629:A:H2    | 2.15                     | 0.63              |
| 33:DA:669:G:H2'    | 33:DA:670:G:O4'   | 1.99                     | 0.63              |
| 33:DA:1158:C:C2    | 33:DA:1160:G:C8   | 2.86                     | 0.63              |
| 33:DA:1466:C:H2'   | 33:DA:1467:C:C6   | 2.33                     | 0.63              |
| 35:DC:52:SER:O     | 35:DC:53:ARG:HG3  | 1.98                     | 0.63              |
| 36:DD:84:ASN:HD21  | 36:DD:87:GLU:H    | 1.44                     | 0.63              |
| 38:DF:38:ARG:O     | 38:DF:39:LEU:HB3  | 1.98                     | 0.63              |
| 1:A0:16:ARG:O      | 1:A0:17:SER:C     | 2.37                     | 0.63              |
| 7:AA:2:G:N1        | 7:AA:118:C:C4     | 2.66                     | 0.63              |
| 8:AB:225:C:C2      | 8:AB:226:A:C8     | 2.86                     | 0.63              |
| 8:AB:328:U:O3'     | 27:AU:65:GLN:HG3  | 1.99                     | 0.63              |
| 8:AB:371:A:H61     | 8:AB:401:A:H3'    | 1.64                     | 0.63              |
| 8:AB:419:U:H2'     | 8:AB:420:C:C6     | 2.34                     | 0.63              |
| 8:AB:599:A:H1'     | 8:AB:659:G:N2     | 2.14                     | 0.63              |
| 8:AB:666:A:H2'     | 8:AB:667:U:H5''   | 1.80                     | 0.63              |
| 8:AB:778:G:C5      | 8:AB:779:U:C5     | 2.87                     | 0.63              |
| 8:AB:1087:G:C2     | 8:AB:1103:A:C2    | 2.86                     | 0.63              |
| 8:AB:1150:C:N3     | 8:AB:1151:A:N7    | 2.47                     | 0.63              |
| 8:AB:1203:U:C5     | 8:AB:1204:A:C6    | 2.87                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1431:A:O2'   | 8:AB:1432:G:H5'   | 1.99                     | 0.63              |
| 8:AB:1771:C:N4    | 8:AB:1772:A:H62   | 1.97                     | 0.63              |
| 8:AB:2035:G:H4'   | 8:AB:2036:C:OP2   | 1.99                     | 0.63              |
| 8:AB:2277:G:OP1   | 19:AM:84:LYS:HA   | 1.99                     | 0.63              |
| 8:AB:2358:A:N6    | 8:AB:2428:G:N1    | 2.47                     | 0.63              |
| 8:AB:2727:A:C4    | 8:AB:2728:U:C5    | 2.87                     | 0.63              |
| 9:AC:103:ILE:HG23 | 9:AC:104:LEU:O    | 1.98                     | 0.63              |
| 9:AC:235:GLU:CG   | 9:AC:236:GLY:N    | 2.61                     | 0.63              |
| 11:AE:18:THR:O    | 11:AE:19:PHE:CB   | 2.46                     | 0.63              |
| 22:AP:8:GLU:HA    | 22:AP:11:GLN:HG3  | 1.80                     | 0.63              |
| 22:AP:77:SER:N    | 22:AP:78:PRO:CD   | 2.61                     | 0.63              |
| 24:AR:65:ALA:HB3  | 24:AR:98:ILE:HG23 | 1.79                     | 0.63              |
| 24:AR:67:GLY:H    | 24:AR:98:ILE:HA   | 1.64                     | 0.63              |
| 29:AW:6:GLY:O     | 29:AW:8:SER:N     | 2.31                     | 0.63              |
| 33:BA:71:A:O2'    | 33:BA:72:A:OP2    | 2.16                     | 0.63              |
| 33:BA:523:A:C2    | 33:BA:527:G:O6    | 2.52                     | 0.63              |
| 33:BA:568:G:N2    | 33:BA:883:C:C2    | 2.66                     | 0.63              |
| 33:BA:932:C:H2'   | 33:BA:933:G:C8    | 2.34                     | 0.63              |
| 35:BC:63:ILE:HD12 | 35:BC:98:ALA:HB2  | 1.79                     | 0.63              |
| 36:BD:183:ARG:HB2 | 36:BD:183:ARG:NH1 | 2.13                     | 0.63              |
| 51:BS:35:ARG:HG2  | 51:BS:50:VAL:HG13 | 1.81                     | 0.63              |
| 52:BT:38:ILE:C    | 52:BT:40:ALA:H    | 2.00                     | 0.63              |
| 8:CB:544:C:C2     | 8:CB:545:U:C2     | 2.87                     | 0.63              |
| 8:CB:665:U:H2'    | 8:CB:666:A:H8     | 1.59                     | 0.63              |
| 8:CB:862:G:H2'    | 8:CB:863:A:H8     | 1.63                     | 0.63              |
| 8:CB:978:G:C5     | 8:CB:979:A:N7     | 2.67                     | 0.63              |
| 8:CB:1028:A:N3    | 8:CB:1029:A:N7    | 2.46                     | 0.63              |
| 8:CB:1440:U:H2'   | 8:CB:1441:G:C8    | 2.32                     | 0.63              |
| 8:CB:1829:A:C8    | 8:CB:1829:A:H5'   | 2.34                     | 0.63              |
| 8:CB:2035:G:H4'   | 8:CB:2036:C:OP2   | 1.99                     | 0.63              |
| 8:CB:2056:G:N3    | 8:CB:2577:A:C2    | 2.67                     | 0.63              |
| 11:CE:193:VAL:HA  | 11:CE:199:MET:HB2 | 1.80                     | 0.63              |
| 13:CG:3:VAL:O     | 13:CG:4:ALA:HB2   | 1.99                     | 0.63              |
| 16:CJ:47:HIS:ND1  | 16:CJ:47:HIS:C    | 2.51                     | 0.63              |
| 21:CO:30:ARG:HD3  | 21:CO:30:ARG:N    | 2.14                     | 0.63              |
| 23:CQ:87:VAL:CB   | 24:CR:54:VAL:HB   | 2.20                     | 0.63              |
| 24:CR:72:VAL:HG22 | 24:CR:73:LYS:H    | 1.64                     | 0.63              |
| 30:CX:17:GLU:HA   | 30:CX:21:LEU:CB   | 2.29                     | 0.63              |
| 33:DA:393:A:C2    | 33:DA:394:G:H1'   | 2.33                     | 0.63              |
| 33:DA:417:G:H21   | 33:DA:540:G:H4'   | 1.64                     | 0.63              |
| 33:DA:454:G:C4    | 33:DA:455:G:C8    | 2.86                     | 0.63              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:797:C:H2'    | 33:DA:798:U:C6     | 2.34                     | 0.63              |
| 33:DA:853:C:H2'    | 33:DA:854:U:O4'    | 1.98                     | 0.63              |
| 33:DA:894:G:N3     | 33:DA:895:G:N7     | 2.46                     | 0.63              |
| 33:DA:894:G:C2     | 33:DA:895:G:C5     | 2.86                     | 0.63              |
| 33:DA:965:U:H5''   | 33:DA:966:G:OP1    | 1.97                     | 0.63              |
| 35:DC:11:LEU:HD22  | 35:DC:17:TRP:HD1   | 1.63                     | 0.63              |
| 35:DC:115:VAL:HG12 | 35:DC:136:ALA:HB1  | 1.80                     | 0.63              |
| 37:DE:28:ARG:NH2   | 37:DE:30:PHE:HA    | 2.14                     | 0.63              |
| 39:DG:61:PHE:HE2   | 39:DG:100:MET:HE2  | 1.64                     | 0.63              |
| 42:DJ:52:LEU:CA    | 42:DJ:62:ARG:HG2   | 2.27                     | 0.63              |
| 49:DQ:20:ILE:HD11  | 49:DQ:47:ASP:HB3   | 1.81                     | 0.63              |
| 5:A4:24:ARG:CG     | 5:A4:26:ILE:HG23   | 2.28                     | 0.63              |
| 8:AB:83:A:H61      | 8:AB:101:A:C4'     | 2.12                     | 0.63              |
| 8:AB:86:G:OP1      | 27:AU:29:SER:HB2   | 1.98                     | 0.63              |
| 8:AB:252:G:C2      | 8:AB:253:C:C5      | 2.87                     | 0.63              |
| 8:AB:609:A:C6      | 8:AB:610:C:O2      | 2.52                     | 0.63              |
| 8:AB:665:U:H2'     | 8:AB:666:A:H8      | 1.63                     | 0.63              |
| 8:AB:736:C:C2      | 8:AB:737:C:C5      | 2.86                     | 0.63              |
| 8:AB:1049:C:H2'    | 8:AB:1050:A:C8     | 2.34                     | 0.63              |
| 8:AB:1258:U:C6     | 8:AB:1259:G:N7     | 2.67                     | 0.63              |
| 8:AB:1360:G:C6     | 8:AB:1372:U:C2     | 2.87                     | 0.63              |
| 8:AB:1785:A:C8     | 8:AB:1787:A:N7     | 2.67                     | 0.63              |
| 8:AB:2284:A:H8     | 8:AB:2284:A:O5'    | 1.81                     | 0.63              |
| 8:AB:2469:A:C5'    | 19:AM:55:ARG:HD2   | 2.28                     | 0.63              |
| 8:AB:2572:A:OP1    | 10:AD:151:THR:HG22 | 1.98                     | 0.63              |
| 8:AB:2784:U:H4'    | 10:AD:41:ALA:O     | 1.99                     | 0.63              |
| 10:AD:134:HIS:CD2  | 10:AD:134:HIS:O    | 2.52                     | 0.63              |
| 10:AD:186:LEU:O    | 10:AD:188:LEU:HD13 | 1.98                     | 0.63              |
| 16:AJ:34:ARG:HD2   | 16:AJ:39:LYS:HB2   | 1.81                     | 0.63              |
| 16:AJ:81:ILE:HG23  | 16:AJ:82:GLY:N     | 2.10                     | 0.63              |
| 17:AK:78:ARG:HH22  | 22:AP:102:ARG:NH1  | 1.97                     | 0.63              |
| 25:AS:21:ALA:HA    | 25:AS:24:ILE:HG12  | 1.80                     | 0.63              |
| 25:AS:71:VAL:O     | 25:AS:71:VAL:HG12  | 1.98                     | 0.63              |
| 26:AT:3:ARG:HH22   | 26:AT:8:LEU:HD23   | 1.64                     | 0.63              |
| 29:AW:42:THR:HB    | 29:AW:66:VAL:H     | 1.63                     | 0.63              |
| 32:AZ:56:ARG:HG3   | 32:AZ:56:ARG:NH1   | 2.14                     | 0.63              |
| 33:BA:552:U:H5'    | 44:BL:82:ARG:NE    | 2.14                     | 0.63              |
| 33:BA:555:U:C2     | 33:BA:556:C:C5     | 2.87                     | 0.63              |
| 33:BA:783:C:N4     | 33:BA:800:G:N2     | 2.47                     | 0.63              |
| 34:BB:143:LEU:HB3  | 34:BB:147:LEU:HD12 | 1.81                     | 0.63              |
| 36:BD:90:LEU:HA    | 36:BD:93:LEU:HD11  | 1.80                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BJ:53:ILE:HG22 | 42:BJ:54:SER:N    | 2.13                     | 0.63              |
| 43:BK:23:HIS:HB3  | 43:BK:30:ILE:HD11 | 1.80                     | 0.63              |
| 49:BQ:20:ILE:HD12 | 49:BQ:20:ILE:N    | 2.14                     | 0.63              |
| 3:C2:1:MET:O      | 8:CB:1620:G:H1'   | 1.98                     | 0.63              |
| 8:CB:23:G:H5''    | 8:CB:23:G:H8      | 1.63                     | 0.63              |
| 8:CB:252:G:C2     | 8:CB:253:C:C5     | 2.86                     | 0.63              |
| 8:CB:905:A:H2'    | 8:CB:906:U:H5''   | 1.80                     | 0.63              |
| 8:CB:979:A:H3'    | 8:CB:980:A:H5''   | 1.80                     | 0.63              |
| 8:CB:988:A:C2     | 8:CB:989:G:N2     | 2.66                     | 0.63              |
| 8:CB:1034:G:C6    | 8:CB:1035:U:C4    | 2.87                     | 0.63              |
| 8:CB:1055:G:P     | 8:CB:1055:G:H8    | 2.21                     | 0.63              |
| 8:CB:1225:G:OP1   | 24:CR:90:ARG:CD   | 2.47                     | 0.63              |
| 8:CB:1279:G:N2    | 8:CB:1292:G:C4    | 2.67                     | 0.63              |
| 8:CB:1611:C:H2'   | 8:CB:1611:C:O2    | 1.97                     | 0.63              |
| 8:CB:1647:U:OP2   | 55:CB:5272:HOH:O  | 2.15                     | 0.63              |
| 8:CB:1897:G:O2'   | 8:CB:1898:U:H5'   | 1.98                     | 0.63              |
| 8:CB:2355:G:C6    | 8:CB:2356:U:C2    | 2.87                     | 0.63              |
| 8:CB:2358:A:H2'   | 8:CB:2359:C:H5'   | 1.81                     | 0.63              |
| 8:CB:2420:C:C3'   | 8:CB:2421:G:H5''  | 2.29                     | 0.63              |
| 8:CB:2569:G:C2    | 8:CB:2570:G:N7    | 2.67                     | 0.63              |
| 8:CB:2764:A:N6    | 8:CB:2766:A:N1    | 2.46                     | 0.63              |
| 8:CB:2810:A:H61   | 8:CB:2890:G:H1'   | 1.63                     | 0.63              |
| 9:CC:53:ILE:HG12  | 9:CC:218:THR:HA   | 1.78                     | 0.63              |
| 16:CJ:45:THR:H    | 23:CQ:63:ARG:NH2  | 1.96                     | 0.63              |
| 20:CN:63:ARG:HG3  | 20:CN:80:PHE:CE1  | 2.33                     | 0.63              |
| 21:CO:2:ASP:HB2   | 21:CO:4:LYS:HB2   | 1.80                     | 0.63              |
| 23:CQ:12:ARG:HH11 | 23:CQ:12:ARG:HG2  | 1.62                     | 0.63              |
| 23:CQ:60:TRP:CE2  | 23:CQ:93:ILE:HG22 | 2.33                     | 0.63              |
| 24:CR:37:GLU:O    | 24:CR:37:GLU:HG3  | 1.98                     | 0.63              |
| 25:CS:7:HIS:HB2   | 25:CS:103:ILE:HB  | 1.79                     | 0.63              |
| 28:CV:36:ALA:CB   | 28:CV:37:PRO:CD   | 2.75                     | 0.63              |
| 29:CW:21:GLY:HA2  | 29:CW:25:PHE:CE1  | 2.32                     | 0.63              |
| 29:CW:40:ARG:HG3  | 29:CW:41:GLY:H    | 1.63                     | 0.63              |
| 33:DA:104:G:C2    | 33:DA:105:G:C5    | 2.86                     | 0.63              |
| 33:DA:485:U:H2'   | 33:DA:485:U:O2    | 1.99                     | 0.63              |
| 33:DA:562:U:C4    | 33:DA:884:U:C5    | 2.86                     | 0.63              |
| 33:DA:613:C:H2'   | 33:DA:614:C:O4'   | 1.99                     | 0.63              |
| 33:DA:856:C:N3    | 33:DA:857:C:H5    | 1.97                     | 0.63              |
| 33:DA:934:C:H5    | 33:DA:1344:C:H2'  | 1.64                     | 0.63              |
| 33:DA:1138:G:H2'  | 33:DA:1140:C:C5'  | 2.28                     | 0.63              |
| 33:DA:1177:G:O6   | 33:DA:1178:G:C2   | 2.52                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:1399:C:C4   | 33:DA:1502:A:C2    | 2.87                     | 0.63              |
| 33:DA:1466:C:O2'  | 33:DA:1467:C:H5'   | 1.99                     | 0.63              |
| 33:DA:1503:A:H5'  | 33:DA:1531:A:H1'   | 1.80                     | 0.63              |
| 34:DB:136:ARG:O   | 34:DB:139:GLU:HB3  | 1.99                     | 0.63              |
| 35:DC:61:LYS:O    | 35:DC:96:VAL:HG21  | 1.99                     | 0.63              |
| 36:DD:56:GLU:HG2  | 36:DD:195:ASN:HB2  | 1.79                     | 0.63              |
| 48:DP:7:ALA:O     | 48:DP:17:TYR:HA    | 1.98                     | 0.63              |
| 53:DU:34:ARG:HH21 | 53:DU:36:PHE:HA    | 1.64                     | 0.63              |
| 1:A0:10:SER:HB3   | 23:AQ:24:TYR:OH    | 1.98                     | 0.63              |
| 7:AA:40:U:H1'     | 7:AA:43:C:C5       | 2.34                     | 0.63              |
| 8:AB:219:A:C6     | 8:AB:220:G:C6      | 2.87                     | 0.63              |
| 8:AB:585:G:C4     | 8:AB:1251:C:N4     | 2.67                     | 0.63              |
| 8:AB:790:U:H5     | 8:AB:791:C:C5      | 2.17                     | 0.63              |
| 8:AB:989:G:OP2    | 31:AY:12:ALA:CB    | 2.46                     | 0.63              |
| 8:AB:1026:G:C5    | 8:AB:1134:A:C5     | 2.87                     | 0.63              |
| 8:AB:1516:G:H2'   | 8:AB:1517:G:C8     | 2.33                     | 0.63              |
| 8:AB:2195:U:H2'   | 8:AB:2196:C:C6     | 2.29                     | 0.63              |
| 8:AB:2320:U:C6    | 8:AB:2320:U:C3'    | 2.81                     | 0.63              |
| 8:AB:2588:G:H2'   | 8:AB:2589:A:H5'    | 1.80                     | 0.63              |
| 8:AB:2889:C:O2'   | 8:AB:2890:G:H5'    | 1.98                     | 0.63              |
| 9:AC:92:LEU:O     | 9:AC:93:VAL:HB     | 1.97                     | 0.63              |
| 10:AD:170:VAL:O   | 10:AD:171:THR:HB   | 1.99                     | 0.63              |
| 11:AE:181:ILE:O   | 11:AE:181:ILE:HG22 | 1.98                     | 0.63              |
| 18:AL:110:VAL:O   | 18:AL:111:ILE:HG23 | 1.99                     | 0.63              |
| 24:AR:2:TYR:HB2   | 24:AR:45:GLU:CB    | 2.29                     | 0.63              |
| 24:AR:36:ALA:HA   | 24:AR:63:VAL:HA    | 1.80                     | 0.63              |
| 24:AR:65:ALA:HB1  | 24:AR:99:THR:CG2   | 2.29                     | 0.63              |
| 28:AV:36:ALA:CB   | 28:AV:37:PRO:CD    | 2.74                     | 0.63              |
| 29:AW:23:LYS:HE3  | 29:AW:24:ARG:CB    | 2.25                     | 0.63              |
| 31:AY:1:ALA:HA    | 31:AY:44:ARG:CD    | 2.27                     | 0.63              |
| 33:BA:499:A:N1    | 33:BA:546:A:H1'    | 2.14                     | 0.63              |
| 33:BA:507:C:H3'   | 33:BA:508:U:C5'    | 2.27                     | 0.63              |
| 33:BA:803:G:C8    | 33:BA:804:U:C5     | 2.84                     | 0.63              |
| 33:BA:815:A:N6    | 33:BA:1509:C:H1'   | 2.14                     | 0.63              |
| 33:BA:939:G:H4'   | 39:BG:101:ARG:NH1  | 2.13                     | 0.63              |
| 33:BA:1219:A:O2'  | 51:BS:33:TRP:HB3   | 1.98                     | 0.63              |
| 36:BD:13:ARG:HD2  | 36:BD:55:ARG:NH1   | 2.14                     | 0.63              |
| 41:BI:25:GLY:HA3  | 41:BI:57:VAL:O     | 1.98                     | 0.63              |
| 3:C2:34:ARG:O     | 3:C2:35:ARG:C      | 2.37                     | 0.63              |
| 4:C3:12:ARG:NE    | 4:C3:23:HIS:ND1    | 2.46                     | 0.63              |
| 7:CA:10:G:H2'     | 7:CA:11:C:O4'      | 1.98                     | 0.63              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:911:A:C5      | 19:CM:13:HIS:CD2   | 2.86                     | 0.63              |
| 8:CB:1172:C:H2'    | 8:CB:1173:U:C1'    | 2.29                     | 0.63              |
| 8:CB:1419:A:C8     | 8:CB:1421:G:C6     | 2.86                     | 0.63              |
| 8:CB:1670:C:H5''   | 8:CB:1671:U:OP2    | 1.99                     | 0.63              |
| 8:CB:1768:C:C6     | 8:CB:1768:C:C3'    | 2.81                     | 0.63              |
| 8:CB:1797:G:N3     | 8:CB:1823:G:C2     | 2.66                     | 0.63              |
| 8:CB:2661:G:H2'    | 8:CB:2662:A:H8     | 1.63                     | 0.63              |
| 8:CB:2679:A:H2'    | 8:CB:2680:U:C6     | 2.34                     | 0.63              |
| 8:CB:2727:A:C4     | 8:CB:2728:U:C5     | 2.86                     | 0.63              |
| 8:CB:2755:C:O2'    | 8:CB:2756:U:H2'    | 1.99                     | 0.63              |
| 9:CC:241:LYS:NZ    | 9:CC:241:LYS:CB    | 2.61                     | 0.63              |
| 10:CD:116:LYS:O    | 20:CN:1:MET:HA     | 1.99                     | 0.63              |
| 14:CH:25:TYR:O     | 14:CH:31:VAL:HG22  | 1.98                     | 0.63              |
| 15:CI:108:ILE:HG22 | 15:CI:128:ILE:HD13 | 1.79                     | 0.63              |
| 18:CL:111:ILE:HD11 | 18:CL:113:ALA:HB2  | 1.80                     | 0.63              |
| 19:CM:18:ARG:NH1   | 19:CM:92:TRP:HZ3   | 1.97                     | 0.63              |
| 20:CN:67:PHE:HE1   | 20:CN:72:ASP:N     | 1.92                     | 0.63              |
| 25:CS:4:ILE:HG22   | 25:CS:5:ALA:N      | 2.13                     | 0.63              |
| 26:CT:16:VAL:O     | 26:CT:17:SER:HB3   | 1.99                     | 0.63              |
| 27:CU:66:VAL:O     | 27:CU:67:SER:C     | 2.36                     | 0.63              |
| 33:DA:65:A:H2      | 33:DA:382:A:N7     | 1.97                     | 0.63              |
| 33:DA:774:G:C6     | 33:DA:775:G:C8     | 2.86                     | 0.63              |
| 33:DA:888:G:C4     | 33:DA:889:A:C8     | 2.86                     | 0.63              |
| 33:DA:895:G:C2     | 33:DA:896:C:C2     | 2.86                     | 0.63              |
| 33:DA:1068:G:N2    | 33:DA:1069:C:O2    | 2.32                     | 0.63              |
| 33:DA:1291:U:OP1   | 39:DG:36:SER:HB2   | 1.98                     | 0.63              |
| 33:DA:1394:A:N7    | 33:DA:1501:C:C4'   | 2.62                     | 0.63              |
| 4:A3:15:LYS:HE2    | 4:A3:21:PHE:CE1    | 2.34                     | 0.62              |
| 8:AB:13:A:C2       | 8:AB:526:A:N7      | 2.67                     | 0.62              |
| 8:AB:496:G:H5''    | 8:AB:496:G:C8      | 2.34                     | 0.62              |
| 8:AB:983:A:H2'     | 8:AB:984:A:C8      | 2.34                     | 0.62              |
| 8:AB:1063:G:H1     | 8:AB:1075:C:N4     | 1.96                     | 0.62              |
| 8:AB:2589:A:C2     | 8:AB:2590:A:C5     | 2.86                     | 0.62              |
| 9:AC:68:ARG:HH22   | 9:AC:190:THR:HG23  | 1.64                     | 0.62              |
| 12:AF:147:ARG:O    | 12:AF:147:ARG:HD2  | 1.99                     | 0.62              |
| 17:AK:34:GLY:O     | 17:AK:36:GLY:N     | 2.32                     | 0.62              |
| 18:AL:47:ARG:O     | 18:AL:47:ARG:CG    | 2.46                     | 0.62              |
| 22:AP:2:ASN:N      | 22:AP:2:ASN:ND2    | 2.47                     | 0.62              |
| 24:AR:26:ASP:O     | 24:AR:27:ILE:HB    | 1.98                     | 0.62              |
| 25:AS:90:LYS:HE3   | 25:AS:90:LYS:N     | 2.13                     | 0.62              |
| 29:AW:44:PHE:H     | 29:AW:76:ARG:HB2   | 1.64                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:224:U:H2'    | 33:BA:225:C:O4'    | 1.98                     | 0.62              |
| 33:BA:673:A:H4'    | 38:BF:86:ARG:HD2   | 1.81                     | 0.62              |
| 33:BA:858:G:H1     | 33:BA:869:G:H3'    | 1.64                     | 0.62              |
| 33:BA:925:G:H1'    | 33:BA:1502:A:C4    | 2.34                     | 0.62              |
| 33:BA:1386:G:C2    | 33:BA:1387:G:C8    | 2.87                     | 0.62              |
| 33:BA:1439:G:H2'   | 33:BA:1440:U:O4'   | 1.98                     | 0.62              |
| 35:BC:34:SER:O     | 35:BC:38:VAL:HG22  | 1.99                     | 0.62              |
| 36:BD:2:ARG:H      | 36:BD:4:LEU:CD2    | 2.11                     | 0.62              |
| 39:BG:22:LEU:HD12  | 39:BG:25:PHE:HB3   | 1.80                     | 0.62              |
| 43:BK:108:ASN:HB3  | 53:BU:6:ARG:CB     | 2.25                     | 0.62              |
| 45:BM:78:ARG:HG2   | 45:BM:78:ARG:NH1   | 2.01                     | 0.62              |
| 47:BO:16:ARG:NH1   | 47:BO:76:ARG:HD3   | 2.14                     | 0.62              |
| 49:BQ:46:HIS:CG    | 49:BQ:47:ASP:N     | 2.66                     | 0.62              |
| 8:CB:493:G:O2'     | 25:CS:7:HIS:O      | 2.08                     | 0.62              |
| 8:CB:631:A:H8      | 8:CB:631:A:O5'     | 1.82                     | 0.62              |
| 8:CB:768:G:C6      | 8:CB:769:U:N3      | 2.63                     | 0.62              |
| 8:CB:997:G:OP1     | 23:CQ:92:LYS:HD2   | 1.98                     | 0.62              |
| 8:CB:1070:A:O2'    | 8:CB:1097:U:H4'    | 1.99                     | 0.62              |
| 8:CB:1108:U:C2     | 8:CB:1109:C:C5     | 2.87                     | 0.62              |
| 8:CB:1337:G:H5''   | 8:CB:1337:G:C8     | 2.33                     | 0.62              |
| 8:CB:1453:A:N1     | 20:CN:74:GLU:HA    | 2.14                     | 0.62              |
| 8:CB:1814:G:OP2    | 8:CB:1815:A:H2'    | 1.99                     | 0.62              |
| 8:CB:1970:A:H5''   | 8:CB:1970:A:H8     | 1.63                     | 0.62              |
| 8:CB:2226:C:H2'    | 8:CB:2227:A:O4'    | 1.98                     | 0.62              |
| 8:CB:2529:G:H5'    | 8:CB:2530:A:H5''   | 1.79                     | 0.62              |
| 8:CB:2761:A:C5     | 8:CB:2762:C:C5     | 2.87                     | 0.62              |
| 8:CB:2784:U:H2'    | 8:CB:2785:C:C6     | 2.32                     | 0.62              |
| 10:CD:116:LYS:HB2  | 10:CD:165:MET:HB3  | 1.80                     | 0.62              |
| 10:CD:186:LEU:O    | 10:CD:188:LEU:HD13 | 1.98                     | 0.62              |
| 10:CD:186:LEU:HD11 | 22:CP:5:LYS:HE2    | 1.80                     | 0.62              |
| 18:CL:58:TYR:CE2   | 18:CL:61:LEU:HD22  | 2.34                     | 0.62              |
| 19:CM:5:LYS:HZ2    | 19:CM:6:ARG:CA     | 2.12                     | 0.62              |
| 20:CN:4:ARG:NE     | 20:CN:4:ARG:N      | 2.47                     | 0.62              |
| 24:CR:57:GLY:O     | 24:CR:61:ALA:HB2   | 1.99                     | 0.62              |
| 33:DA:382:A:C4     | 33:DA:383:A:N7     | 2.67                     | 0.62              |
| 33:DA:939:G:N1     | 33:DA:1344:C:O2    | 2.32                     | 0.62              |
| 33:DA:976:G:H1'    | 33:DA:1363:A:N6    | 2.14                     | 0.62              |
| 33:DA:1020:G:C8    | 33:DA:1020:G:H5''  | 2.33                     | 0.62              |
| 33:DA:1078:U:H4'   | 37:DE:137:ARG:NH2  | 2.13                     | 0.62              |
| 33:DA:1277:C:C2'   | 33:DA:1279:G:H8    | 2.11                     | 0.62              |
| 33:DA:1321:U:H5''  | 45:DM:85:TYR:CE2   | 2.34                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DC:67:ILE:HG13 | 35:DC:68:HIS:N    | 2.13                     | 0.62              |
| 40:DH:91:LEU:HD23 | 40:DH:92:PRO:CD   | 2.29                     | 0.62              |
| 42:DJ:27:GLU:O    | 42:DJ:31:ARG:HD3  | 1.99                     | 0.62              |
| 43:DK:75:GLU:CD   | 43:DK:75:GLU:H    | 2.00                     | 0.62              |
| 49:DQ:64:ARG:HG2  | 49:DQ:64:ARG:NH1  | 2.09                     | 0.62              |
| 1:A0:38:LEU:HD23  | 8:AB:2815:C:H4'   | 1.81                     | 0.62              |
| 2:A1:29:LYS:O     | 2:A1:31:GLU:N     | 2.31                     | 0.62              |
| 4:A3:44:ARG:HH12  | 8:AB:649:G:H1'    | 1.64                     | 0.62              |
| 8:AB:959:A:H5''   | 8:AB:959:A:H8     | 1.64                     | 0.62              |
| 8:AB:993:G:C2     | 8:AB:994:C:C5     | 2.76                     | 0.62              |
| 8:AB:1203:U:HO2'  | 18:AL:14:LYS:HZ1  | 1.44                     | 0.62              |
| 8:AB:1380:G:C2    | 8:AB:1381:G:N7    | 2.67                     | 0.62              |
| 8:AB:1687:G:C2    | 8:AB:1688:U:C5    | 2.87                     | 0.62              |
| 8:AB:1763:G:H2'   | 8:AB:1764:C:H5'   | 1.81                     | 0.62              |
| 8:AB:2308:G:H3'   | 8:AB:2308:G:N3    | 2.14                     | 0.62              |
| 8:AB:2420:C:C3'   | 8:AB:2421:G:H5''  | 2.29                     | 0.62              |
| 8:AB:2638:G:H22   | 8:AB:2775:G:H2'   | 1.64                     | 0.62              |
| 8:AB:2749:A:H5'   | 13:AG:3:VAL:HG12  | 1.79                     | 0.62              |
| 9:AC:53:ILE:HG12  | 9:AC:218:THR:HA   | 1.80                     | 0.62              |
| 9:AC:82:TYR:CD1   | 9:AC:83:ASP:N     | 2.67                     | 0.62              |
| 9:AC:107:LYS:N    | 9:AC:194:VAL:HG21 | 2.10                     | 0.62              |
| 9:AC:155:ARG:HD3  | 9:AC:155:ARG:O    | 1.99                     | 0.62              |
| 20:AN:12:ARG:CD   | 20:AN:16:HIS:CD2  | 2.78                     | 0.62              |
| 21:AO:35:ILE:HG12 | 21:AO:36:TYR:N    | 2.11                     | 0.62              |
| 23:AQ:24:TYR:CD1  | 23:AQ:25:GLY:N    | 2.67                     | 0.62              |
| 33:BA:37:U:OP1    | 44:BL:119:LYS:HE3 | 1.99                     | 0.62              |
| 33:BA:130:A:N1    | 33:BA:233:C:H1'   | 2.13                     | 0.62              |
| 33:BA:665:A:C2    | 33:BA:732:C:N3    | 2.66                     | 0.62              |
| 33:BA:792:A:C4    | 33:BA:794:A:C6    | 2.87                     | 0.62              |
| 33:BA:1219:A:H2   | 51:BS:51:HIS:CE1  | 2.17                     | 0.62              |
| 42:BJ:70:HIS:CD2  | 42:BJ:70:HIS:N    | 2.67                     | 0.62              |
| 43:BK:44:ALA:HB1  | 43:BK:68:ARG:HD2  | 1.80                     | 0.62              |
| 44:BL:85:ARG:HG3  | 44:BL:86:VAL:N    | 2.13                     | 0.62              |
| 8:CB:78:U:H2'     | 8:CB:79:C:C6      | 2.35                     | 0.62              |
| 8:CB:78:U:H2'     | 8:CB:79:C:O4'     | 1.99                     | 0.62              |
| 8:CB:262:A:H2'    | 8:CB:263:G:O5'    | 1.99                     | 0.62              |
| 8:CB:300:A:N6     | 8:CB:334:C:H5'    | 2.14                     | 0.62              |
| 8:CB:445:C:OP1    | 23:CQ:1:ALA:HB1   | 1.98                     | 0.62              |
| 8:CB:543:G:C2     | 8:CB:551:G:C2     | 2.87                     | 0.62              |
| 8:CB:650:C:N3     | 8:CB:651:G:C8     | 2.67                     | 0.62              |
| 8:CB:1178:C:H2'   | 8:CB:1179:G:H8    | 1.63                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1575:C:H2'   | 8:CB:1576:U:C6     | 2.34                     | 0.62              |
| 8:CB:1853:A:N6    | 8:CB:1889:A:C4     | 2.67                     | 0.62              |
| 8:CB:2093:G:H1'   | 8:CB:2198:A:N1     | 2.14                     | 0.62              |
| 8:CB:2195:U:H2'   | 8:CB:2196:C:C6     | 2.27                     | 0.62              |
| 8:CB:2408:U:H2'   | 8:CB:2409:G:C8     | 2.34                     | 0.62              |
| 8:CB:2889:C:O2'   | 8:CB:2890:G:H5'    | 2.00                     | 0.62              |
| 9:CC:35:LYS:HE2   | 9:CC:64:VAL:HG23   | 1.81                     | 0.62              |
| 9:CC:153:LEU:O    | 9:CC:153:LEU:CG    | 2.47                     | 0.62              |
| 9:CC:178:GLY:O    | 9:CC:266:ILE:HG22  | 1.99                     | 0.62              |
| 10:CD:125:TRP:O   | 10:CD:127:PHE:N    | 2.28                     | 0.62              |
| 10:CD:208:LYS:HE3 | 10:CD:208:LYS:C    | 2.19                     | 0.62              |
| 16:CJ:20:ALA:HB2  | 16:CJ:56:VAL:HG12  | 1.81                     | 0.62              |
| 16:CJ:25:LEU:HG   | 16:CJ:64:VAL:HA    | 1.81                     | 0.62              |
| 16:CJ:98:GLU:HB3  | 16:CJ:124:VAL:HG11 | 1.79                     | 0.62              |
| 21:CO:35:ILE:HG12 | 21:CO:71:ALA:CB    | 2.28                     | 0.62              |
| 21:CO:83:LEU:O    | 21:CO:84:GLU:O     | 2.17                     | 0.62              |
| 22:CP:77:SER:HB2  | 22:CP:78:PRO:HD3   | 1.80                     | 0.62              |
| 24:CR:77:PHE:CB   | 24:CR:89:HIS:CE1   | 2.81                     | 0.62              |
| 25:CS:28:LYS:C    | 25:CS:30:SER:H     | 2.01                     | 0.62              |
| 25:CS:32:ALA:HA   | 25:CS:35:ILE:CG2   | 2.29                     | 0.62              |
| 25:CS:75:PHE:N    | 25:CS:75:PHE:CD1   | 2.67                     | 0.62              |
| 33:DA:46:G:N2     | 33:DA:396:C:C2     | 2.68                     | 0.62              |
| 33:DA:668:G:O2'   | 47:DO:45:HIS:CD2   | 2.52                     | 0.62              |
| 33:DA:908:A:C2    | 33:DA:909:A:N9     | 2.68                     | 0.62              |
| 33:DA:929:G:C6    | 33:DA:930:C:C4     | 2.87                     | 0.62              |
| 33:DA:1315:U:C5   | 33:DA:1316:G:N7    | 2.67                     | 0.62              |
| 34:DB:90:PHE:CE2  | 34:DB:149:GLY:HA3  | 2.34                     | 0.62              |
| 35:DC:60:ALA:O    | 35:DC:61:LYS:HB2   | 1.98                     | 0.62              |
| 8:AB:384:A:O5'    | 8:AB:384:A:C8      | 2.50                     | 0.62              |
| 8:AB:592:A:H2'    | 8:AB:593:U:H6      | 1.63                     | 0.62              |
| 8:AB:690:G:C5     | 8:AB:691:C:C5      | 2.87                     | 0.62              |
| 8:AB:729:G:H2'    | 8:AB:729:G:N3      | 2.13                     | 0.62              |
| 8:AB:771:G:C6     | 8:AB:772:C:N4      | 2.67                     | 0.62              |
| 8:AB:772:C:C2     | 8:AB:773:U:C5      | 2.88                     | 0.62              |
| 8:AB:811:U:H5     | 18:AL:29:LYS:CD    | 2.13                     | 0.62              |
| 8:AB:1034:G:C6    | 8:AB:1035:U:C4     | 2.86                     | 0.62              |
| 8:AB:1257:C:O2    | 8:AB:1257:C:H2'    | 1.98                     | 0.62              |
| 8:AB:1486:U:H3    | 8:AB:1503:A:N6     | 1.97                     | 0.62              |
| 8:AB:2751:G:C2    | 13:AG:1:SER:HB3    | 2.33                     | 0.62              |
| 9:AC:204:LEU:HB3  | 9:AC:210:ALA:CB    | 2.29                     | 0.62              |
| 11:AE:3:LEU:HD11  | 11:AE:13:THR:HG22  | 1.80                     | 0.62              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 11:AE:79:ARG:O   | 11:AE:80:SER:HB3   | 1.98                     | 0.62              |
| 13:AG:5:LYS:O    | 13:AG:6:ALA:HB2    | 2.00                     | 0.62              |
| 16:AJ:34:ARG:HD2 | 16:AJ:39:LYS:CA    | 2.29                     | 0.62              |
| 16:AJ:84:ILE:H   | 16:AJ:84:ILE:CD1   | 2.06                     | 0.62              |
| 23:AQ:39:ILE:CD1 | 24:AR:80:ARG:HH12  | 2.05                     | 0.62              |
| 26:AT:16:VAL:O   | 26:AT:17:SER:HB3   | 2.00                     | 0.62              |
| 29:AW:16:GLU:C   | 29:AW:18:LYS:HD2   | 2.20                     | 0.62              |
| 33:BA:662:U:H2'  | 33:BA:663:A:H8     | 1.60                     | 0.62              |
| 33:BA:797:C:H2'  | 33:BA:798:U:H5'    | 1.81                     | 0.62              |
| 33:BA:945:G:N1   | 33:BA:946:A:C8     | 2.67                     | 0.62              |
| 33:BA:1103:C:C5  | 33:BA:1104:G:N7    | 2.66                     | 0.62              |
| 33:BA:1281:C:H5' | 33:BA:1282:C:C6    | 2.34                     | 0.62              |
| 33:BA:1446:A:C2  | 33:BA:1447:A:N7    | 2.67                     | 0.62              |
| 36:BD:94:GLU:HA  | 36:BD:99:ASN:HD22  | 1.64                     | 0.62              |
| 43:BK:74:LYS:HE2 | 43:BK:104:PHE:CE1  | 2.33                     | 0.62              |
| 51:BS:58:PRO:HB2 | 51:BS:60:PHE:CZ    | 2.35                     | 0.62              |
| 4:C3:15:LYS:HE2  | 4:C3:21:PHE:CE1    | 2.34                     | 0.62              |
| 8:CB:540:C:N3    | 8:CB:541:A:N7      | 2.46                     | 0.62              |
| 8:CB:790:U:H5    | 8:CB:791:C:C5      | 2.16                     | 0.62              |
| 8:CB:948:C:O4'   | 8:CB:984:A:H2      | 1.82                     | 0.62              |
| 8:CB:1153:C:P    | 55:CB:5207:HOH:O   | 2.57                     | 0.62              |
| 8:CB:1291:C:H6   | 8:CB:1291:C:C5'    | 2.07                     | 0.62              |
| 8:CB:1451:C:H2'  | 8:CB:1458:U:C2     | 2.34                     | 0.62              |
| 8:CB:2137:U:H3'  | 8:CB:2137:U:C6     | 2.34                     | 0.62              |
| 8:CB:2618:G:H21  | 10:CD:155:VAL:HG21 | 1.64                     | 0.62              |
| 9:CC:11:GLY:O    | 9:CC:12:ARG:HB2    | 1.97                     | 0.62              |
| 9:CC:257:ARG:HB3 | 9:CC:261:ARG:NH2   | 2.15                     | 0.62              |
| 10:CD:7:LYS:HB3  | 10:CD:201:LEU:CD2  | 2.28                     | 0.62              |
| 10:CD:46:ARG:O   | 10:CD:47:ALA:HB2   | 1.98                     | 0.62              |
| 11:CE:15:SER:HB3 | 11:CE:196:VAL:CG2  | 2.29                     | 0.62              |
| 19:CM:5:LYS:HZ1  | 19:CM:8:LYS:HB3    | 1.64                     | 0.62              |
| 23:CQ:44:TYR:CE1 | 23:CQ:48:ASP:CG    | 2.73                     | 0.62              |
| 27:CU:22:GLY:HA2 | 27:CU:35:VAL:HG21  | 1.79                     | 0.62              |
| 33:DA:293:G:H2'  | 33:DA:294:U:H6     | 1.64                     | 0.62              |
| 33:DA:687:A:C2   | 33:DA:704:A:C5     | 2.87                     | 0.62              |
| 33:DA:770:C:H1'  | 33:DA:900:A:C2     | 2.34                     | 0.62              |
| 33:DA:1193:G:O2' | 33:DA:1194:U:H5'   | 1.99                     | 0.62              |
| 33:DA:1319:A:C2  | 33:DA:1323:G:H1'   | 2.35                     | 0.62              |
| 33:DA:1409:C:H6  | 33:DA:1409:C:C3'   | 2.12                     | 0.62              |
| 33:DA:1481:U:H2' | 33:DA:1482:G:C8    | 2.34                     | 0.62              |
| 34:DB:224:ARG:O  | 34:DB:225:SER:HB2  | 2.00                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DD:56:GLU:OE2  | 36:DD:56:GLU:HA    | 1.99                     | 0.62              |
| 36:DD:139:ASN:H   | 36:DD:181:PHE:HB3  | 1.64                     | 0.62              |
| 39:DG:70:PRO:HG3  | 39:DG:102:TRP:CZ3  | 2.34                     | 0.62              |
| 41:DI:88:GLU:OE2  | 41:DI:89:TYR:HB2   | 1.99                     | 0.62              |
| 44:DL:35:ARG:NH2  | 44:DL:36:VAL:HG22  | 2.06                     | 0.62              |
| 44:DL:65:TYR:HB3  | 44:DL:95:HIS:CD2   | 2.26                     | 0.62              |
| 45:DM:100:ARG:CZ  | 45:DM:102:LYS:HE3  | 2.29                     | 0.62              |
| 50:DR:26:ALA:HA   | 50:DR:29:LYS:HE2   | 1.80                     | 0.62              |
| 52:DT:28:ARG:O    | 52:DT:31:ILE:HG13  | 1.99                     | 0.62              |
| 4:A3:58:ILE:HG13  | 4:A3:59:ALA:N      | 2.12                     | 0.62              |
| 8:AB:215:G:C4'    | 8:AB:216:A:H4'     | 2.29                     | 0.62              |
| 8:AB:584:C:OP2    | 23:AQ:5:ARG:HD3    | 1.99                     | 0.62              |
| 8:AB:843:G:H5'    | 8:AB:844:A:OP2     | 1.97                     | 0.62              |
| 8:AB:985:C:H2'    | 8:AB:986:C:C6      | 2.33                     | 0.62              |
| 8:AB:1300:G:H1'   | 8:AB:1626:A:N1     | 2.15                     | 0.62              |
| 8:AB:1361:G:N3    | 8:AB:1362:C:C5     | 2.68                     | 0.62              |
| 8:AB:2284:A:O2'   | 8:AB:2288:A:N6     | 2.32                     | 0.62              |
| 8:AB:2380:C:H2'   | 8:AB:2381:A:C8     | 2.33                     | 0.62              |
| 10:AD:106:LYS:O   | 10:AD:206:ALA:HA   | 2.00                     | 0.62              |
| 12:AF:2:LYS:O     | 12:AF:3:LEU:HB2    | 1.99                     | 0.62              |
| 15:AI:122:GLU:HB3 | 15:AI:126:ARG:HH21 | 1.64                     | 0.62              |
| 16:AJ:20:ALA:HB2  | 16:AJ:56:VAL:HG12  | 1.82                     | 0.62              |
| 18:AL:25:SER:C    | 18:AL:27:LEU:H     | 2.03                     | 0.62              |
| 19:AM:33:LEU:HD22 | 19:AM:124:LEU:HD12 | 1.81                     | 0.62              |
| 20:AN:32:GLU:CG   | 20:AN:33:ILE:HG13  | 2.27                     | 0.62              |
| 21:AO:45:SER:HB3  | 21:AO:47:VAL:CG2   | 2.29                     | 0.62              |
| 21:AO:49:VAL:O    | 21:AO:83:LEU:HD11  | 2.00                     | 0.62              |
| 22:AP:31:VAL:HG13 | 22:AP:81:ASP:HB3   | 1.82                     | 0.62              |
| 23:AQ:40:LYS:O    | 23:AQ:43:GLN:N     | 2.33                     | 0.62              |
| 26:AT:74:ILE:HG22 | 26:AT:75:GLY:N     | 2.15                     | 0.62              |
| 33:BA:821:G:C6    | 33:BA:822:U:C4     | 2.88                     | 0.62              |
| 33:BA:1035:A:H2'  | 33:BA:1036:A:C8    | 2.32                     | 0.62              |
| 33:BA:1079:G:C5   | 33:BA:1080:A:N1    | 2.67                     | 0.62              |
| 33:BA:1499:A:H5'  | 33:BA:1499:A:C8    | 2.26                     | 0.62              |
| 34:BB:17:HIS:HD2  | 34:BB:18:GLN:CD    | 2.03                     | 0.62              |
| 45:BM:1:ALA:C     | 45:BM:8:ILE:HG22   | 2.19                     | 0.62              |
| 47:BO:16:ARG:CZ   | 47:BO:76:ARG:HD3   | 2.30                     | 0.62              |
| 52:BT:65:LEU:HB3  | 52:BT:66:ILE:HD12  | 1.79                     | 0.62              |
| 8:CB:465:G:H2'    | 8:CB:466:A:N7      | 2.13                     | 0.62              |
| 8:CB:636:G:N7     | 18:CL:109:LYS:NZ   | 2.39                     | 0.62              |
| 8:CB:1109:C:O2    | 8:CB:1109:C:H2'    | 1.97                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1432:G:H2'   | 8:CB:1433:A:C8    | 2.34                     | 0.62              |
| 8:CB:1454:C:H4'   | 8:CB:1455:G:OP1   | 1.99                     | 0.62              |
| 8:CB:1702:G:C5    | 8:CB:1703:G:N7    | 2.68                     | 0.62              |
| 8:CB:2184:A:H2'   | 8:CB:2185:U:C6    | 2.34                     | 0.62              |
| 8:CB:2201:G:H5''  | 8:CB:2201:G:C8    | 2.32                     | 0.62              |
| 8:CB:2453:A:C8    | 8:CB:2453:A:C3'   | 2.80                     | 0.62              |
| 8:CB:2485:G:H2'   | 8:CB:2486:C:H5'   | 1.81                     | 0.62              |
| 8:CB:2507:C:H2'   | 8:CB:2508:G:H8    | 1.64                     | 0.62              |
| 8:CB:2617:U:H2'   | 8:CB:2618:G:O4'   | 1.98                     | 0.62              |
| 8:CB:2683:C:H6    | 8:CB:2683:C:H5''  | 1.65                     | 0.62              |
| 10:CD:116:LYS:HB2 | 10:CD:165:MET:CB  | 2.29                     | 0.62              |
| 11:CE:190:ALA:HB3 | 11:CE:194:LYS:HE2 | 1.82                     | 0.62              |
| 12:CF:147:ARG:O   | 12:CF:147:ARG:HD2 | 1.99                     | 0.62              |
| 20:CN:2:ARG:NE    | 20:CN:2:ARG:O     | 2.32                     | 0.62              |
| 23:CQ:91:ARG:O    | 23:CQ:94:LEU:HG   | 2.00                     | 0.62              |
| 26:CT:62:VAL:CG2  | 26:CT:63:VAL:H    | 2.09                     | 0.62              |
| 29:CW:31:LEU:HD11 | 29:CW:39:GLN:HE21 | 1.62                     | 0.62              |
| 31:CY:9:THR:OG1   | 31:CY:10:ARG:N    | 2.31                     | 0.62              |
| 33:DA:293:G:C4    | 33:DA:294:U:C5    | 2.88                     | 0.62              |
| 33:DA:461:A:H3'   | 33:DA:462:G:H4'   | 1.81                     | 0.62              |
| 33:DA:496:A:H2'   | 33:DA:496:A:N3    | 2.14                     | 0.62              |
| 33:DA:637:C:O2'   | 33:DA:638:U:H5'   | 1.99                     | 0.62              |
| 33:DA:767:A:H1'   | 33:DA:1525:G:H1'  | 1.80                     | 0.62              |
| 33:DA:1132:C:N4   | 33:DA:1143:G:H21  | 1.97                     | 0.62              |
| 33:DA:1308:U:OP1  | 45:DM:96:VAL:HG23 | 1.99                     | 0.62              |
| 35:DC:59:PRO:HD3  | 35:DC:64:ARG:HB2  | 1.82                     | 0.62              |
| 35:DC:155:ARG:CZ  | 35:DC:192:TYR:HB3 | 2.29                     | 0.62              |
| 42:DJ:42:LEU:CB   | 42:DJ:43:PRO:HD2  | 2.29                     | 0.62              |
| 1:A0:21:LEU:HD12  | 1:A0:21:LEU:N     | 2.11                     | 0.62              |
| 2:A1:11:VAL:CG1   | 2:A1:51:ALA:HB2   | 2.28                     | 0.62              |
| 5:A4:18:LYS:HZ1   | 8:AB:2757:A:H8    | 1.48                     | 0.62              |
| 8:AB:56:A:H2'     | 8:AB:57:C:C6      | 2.34                     | 0.62              |
| 8:AB:244:A:H2'    | 8:AB:245:G:O5'    | 1.99                     | 0.62              |
| 8:AB:592:A:C4     | 8:AB:593:U:C5     | 2.88                     | 0.62              |
| 8:AB:630:G:C6     | 8:AB:632:A:OP2    | 2.52                     | 0.62              |
| 8:AB:854:C:H2'    | 8:AB:855:G:C8     | 2.33                     | 0.62              |
| 8:AB:1371:G:O5'   | 8:AB:1371:G:H8    | 1.82                     | 0.62              |
| 8:AB:1451:C:H2'   | 8:AB:1458:U:C2    | 2.35                     | 0.62              |
| 8:AB:2051:A:H5''  | 8:AB:2051:A:H8    | 1.65                     | 0.62              |
| 8:AB:2233:U:H2'   | 8:AB:2234:G:H8    | 1.64                     | 0.62              |
| 8:AB:2453:A:H3'   | 8:AB:2453:A:C8    | 2.34                     | 0.62              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2798:U:H4'    | 8:AB:2800:A:C2    | 2.34                     | 0.62              |
| 8:AB:2810:A:H61    | 8:AB:2890:G:H1'   | 1.63                     | 0.62              |
| 9:AC:21:PRO:O      | 9:AC:22:GLU:HB2   | 1.99                     | 0.62              |
| 9:AC:107:LYS:HB2   | 9:AC:194:VAL:HG21 | 1.82                     | 0.62              |
| 10:AD:83:ARG:HD3   | 10:AD:84:LEU:CA   | 2.29                     | 0.62              |
| 13:AG:85:LYS:CG    | 13:AG:131:VAL:HB  | 2.29                     | 0.62              |
| 17:AK:20:MET:O     | 17:AK:41:ILE:HD12 | 1.99                     | 0.62              |
| 18:AL:111:ILE:HG12 | 18:AL:112:LEU:N   | 2.15                     | 0.62              |
| 26:AT:1:MET:CG     | 26:AT:2:ILE:N     | 2.59                     | 0.62              |
| 33:BA:58:C:H2'     | 33:BA:59:A:H5''   | 1.82                     | 0.62              |
| 33:BA:66:A:C2      | 33:BA:104:G:H1'   | 2.34                     | 0.62              |
| 33:BA:516:U:C4     | 33:BA:517:G:N1    | 2.68                     | 0.62              |
| 33:BA:679:C:N3     | 33:BA:712:A:N1    | 2.48                     | 0.62              |
| 33:BA:687:A:C2     | 33:BA:704:A:C5    | 2.88                     | 0.62              |
| 36:BD:102:TYR:HB2  | 36:BD:110:ARG:HG2 | 1.80                     | 0.62              |
| 45:BM:22:TYR:HB2   | 45:BM:65:GLU:OE2  | 1.99                     | 0.62              |
| 7:CA:100:G:N3      | 8:CB:863:A:O2'    | 2.31                     | 0.62              |
| 7:CA:105:G:O2'     | 7:CA:106:G:H5'    | 1.99                     | 0.62              |
| 8:CB:181:A:H1'     | 8:CB:435:C:H5''   | 1.81                     | 0.62              |
| 8:CB:265:A:O2'     | 8:CB:266:G:H4'    | 1.99                     | 0.62              |
| 8:CB:413:C:H4'     | 8:CB:1880:U:O2'   | 2.00                     | 0.62              |
| 8:CB:638:G:C6      | 8:CB:639:U:N3     | 2.68                     | 0.62              |
| 8:CB:699:A:C2      | 8:CB:734:A:H1'    | 2.34                     | 0.62              |
| 8:CB:1256:G:C2     | 8:CB:1257:C:C5    | 2.88                     | 0.62              |
| 8:CB:1353:A:C2     | 8:CB:1354:A:N7    | 2.67                     | 0.62              |
| 8:CB:1431:A:O2'    | 8:CB:1432:G:H5'   | 1.99                     | 0.62              |
| 8:CB:1567:G:C5     | 9:CC:82:TYR:HD2   | 2.18                     | 0.62              |
| 8:CB:1612:C:N1     | 8:CB:1620:G:N2    | 2.46                     | 0.62              |
| 8:CB:1823:G:H2'    | 8:CB:1824:G:O4'   | 1.98                     | 0.62              |
| 8:CB:2284:A:O2'    | 8:CB:2288:A:N6    | 2.32                     | 0.62              |
| 8:CB:2438:U:O3'    | 8:CB:2439:A:H3'   | 1.99                     | 0.62              |
| 8:CB:2507:C:H2'    | 8:CB:2508:G:C8    | 2.35                     | 0.62              |
| 8:CB:2845:U:O3'    | 22:CP:54:LEU:HG   | 2.00                     | 0.62              |
| 9:CC:21:PRO:O      | 9:CC:22:GLU:HB2   | 2.00                     | 0.62              |
| 10:CD:81:GLU:O     | 10:CD:82:PHE:CD1  | 2.52                     | 0.62              |
| 10:CD:174:SER:O    | 10:CD:175:LEU:HB2 | 1.97                     | 0.62              |
| 12:CF:37:MET:H     | 12:CF:86:CYS:HB2  | 1.65                     | 0.62              |
| 15:CI:4:VAL:HG13   | 15:CI:5:GLN:H     | 1.63                     | 0.62              |
| 16:CJ:7:LYS:HD3    | 16:CJ:7:LYS:N     | 2.14                     | 0.62              |
| 16:CJ:128:ASN:O    | 16:CJ:129:GLU:C   | 2.37                     | 0.62              |
| 17:CK:98:ARG:O     | 17:CK:99:ILE:HD12 | 2.00                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 19:CM:128:THR:OG1 | 19:CM:129:THR:N    | 2.32                     | 0.62              |
| 23:CQ:52:ARG:HD3  | 23:CQ:53:LYS:HZ1   | 1.64                     | 0.62              |
| 27:CU:48:VAL:HG13 | 27:CU:51:LEU:N     | 2.15                     | 0.62              |
| 29:CW:8:SER:O     | 29:CW:10:ARG:HG2   | 1.98                     | 0.62              |
| 33:DA:17:U:O2'    | 33:DA:18:C:H5'     | 1.99                     | 0.62              |
| 33:DA:224:U:H2'   | 33:DA:225:C:O4'    | 1.98                     | 0.62              |
| 33:DA:381:C:H2'   | 33:DA:381:C:O2     | 1.97                     | 0.62              |
| 33:DA:439:U:H2'   | 33:DA:440:C:H6     | 1.62                     | 0.62              |
| 33:DA:445:G:H2'   | 33:DA:446:G:O4'    | 1.99                     | 0.62              |
| 33:DA:544:G:N1    | 33:DA:545:C:C4     | 2.67                     | 0.62              |
| 33:DA:599:C:H2'   | 33:DA:600:A:H8     | 1.65                     | 0.62              |
| 33:DA:626:G:H2'   | 33:DA:627:G:O4'    | 2.00                     | 0.62              |
| 33:DA:690:G:N2    | 33:DA:691:G:N3     | 2.47                     | 0.62              |
| 33:DA:718:A:C5'   | 33:DA:720:C:N4     | 2.62                     | 0.62              |
| 33:DA:1103:C:H2'  | 33:DA:1104:G:O4'   | 1.99                     | 0.62              |
| 33:DA:1241:G:H1   | 33:DA:1296:C:N4    | 1.98                     | 0.62              |
| 35:DC:123:LEU:HA  | 35:DC:127:VAL:HG22 | 1.81                     | 0.62              |
| 39:DG:26:VAL:HG12 | 39:DG:42:VAL:HG21  | 1.81                     | 0.62              |
| 39:DG:70:PRO:HD3  | 39:DG:102:TRP:HZ3  | 1.64                     | 0.62              |
| 50:DR:33:THR:HG22 | 50:DR:39:VAL:HG22  | 1.82                     | 0.62              |
| 1:A0:41:HIS:ND1   | 1:A0:48:TYR:CD1    | 2.67                     | 0.62              |
| 8:AB:42:A:C6      | 8:AB:43:G:N7       | 2.68                     | 0.62              |
| 8:AB:122:G:N2     | 8:AB:130:C:C2      | 2.67                     | 0.62              |
| 8:AB:239:C:H2'    | 8:AB:240:C:C6      | 2.35                     | 0.62              |
| 8:AB:465:G:N2     | 8:AB:466:A:C2      | 2.68                     | 0.62              |
| 8:AB:1527:G:N2    | 8:AB:1545:A:H62    | 1.97                     | 0.62              |
| 8:AB:1668:A:N7    | 8:AB:1674:G:C6     | 2.68                     | 0.62              |
| 8:AB:1996:C:H5'   | 10:AD:127:PHE:CZ   | 2.35                     | 0.62              |
| 8:AB:2002:G:O6    | 8:AB:2003:A:N6     | 2.32                     | 0.62              |
| 8:AB:2521:C:H5'   | 8:AB:2521:C:C6     | 2.34                     | 0.62              |
| 8:AB:2873:A:N3    | 20:AN:6:SER:HB3    | 2.14                     | 0.62              |
| 9:AC:253:GLY:HA2  | 9:AC:254:LYS:HZ3   | 1.62                     | 0.62              |
| 11:AE:3:LEU:CD1   | 11:AE:13:THR:H     | 2.08                     | 0.62              |
| 11:AE:169:VAL:CG2 | 11:AE:170:ARG:H    | 2.12                     | 0.62              |
| 15:AI:27:LEU:HG   | 15:AI:34:ILE:HD11  | 1.81                     | 0.62              |
| 16:AJ:33:ALA:HA   | 16:AJ:36:LEU:HB2   | 1.81                     | 0.62              |
| 18:AL:56:PRO:CB   | 18:AL:60:ARG:HH22  | 2.13                     | 0.62              |
| 18:AL:110:VAL:CG2 | 18:AL:126:ARG:HH12 | 2.12                     | 0.62              |
| 19:AM:73:ILE:CG2  | 19:AM:74:THR:N     | 2.62                     | 0.62              |
| 22:AP:7:LEU:O     | 22:AP:9:GLN:N      | 2.33                     | 0.62              |
| 22:AP:25:VAL:HG12 | 22:AP:25:VAL:O     | 2.00                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:AT:10:VAL:CG2  | 26:AT:11:LEU:HD12  | 2.29                     | 0.62              |
| 32:AZ:36:VAL:HA   | 32:AZ:42:PRO:HB3   | 1.81                     | 0.62              |
| 33:BA:50:A:N6     | 33:BA:361:G:C4'    | 2.63                     | 0.62              |
| 33:BA:181:A:N6    | 33:BA:195:A:C8     | 2.67                     | 0.62              |
| 33:BA:362:G:H3'   | 33:BA:362:G:C8     | 2.34                     | 0.62              |
| 33:BA:692:U:C4    | 33:BA:694:A:H5''   | 2.34                     | 0.62              |
| 33:BA:803:G:C4    | 33:BA:804:U:C5     | 2.87                     | 0.62              |
| 33:BA:821:G:H2'   | 33:BA:822:U:O4'    | 1.99                     | 0.62              |
| 33:BA:832:G:C2    | 33:BA:855:U:N3     | 2.68                     | 0.62              |
| 33:BA:964:A:C2    | 33:BA:969:A:H1'    | 2.35                     | 0.62              |
| 33:BA:1047:G:H1   | 33:BA:1210:C:N4    | 1.98                     | 0.62              |
| 34:BB:163:ILE:CG2 | 34:BB:164:ASP:H    | 2.08                     | 0.62              |
| 35:BC:9:ILE:O     | 35:BC:9:ILE:HG23   | 1.99                     | 0.62              |
| 35:BC:72:PRO:HB3  | 35:BC:102:ILE:HD12 | 1.80                     | 0.62              |
| 36:BD:17:ASP:O    | 36:BD:18:LEU:HD23  | 2.00                     | 0.62              |
| 36:BD:86:GLY:O    | 36:BD:89:LEU:HB3   | 1.98                     | 0.62              |
| 41:BI:11:ARG:NH2  | 41:BI:12:LYS:HB2   | 2.14                     | 0.62              |
| 41:BI:90:ASP:O    | 41:BI:93:LEU:HG    | 2.00                     | 0.62              |
| 46:BN:81:ILE:HD13 | 46:BN:82:LYS:HE2   | 1.80                     | 0.62              |
| 8:CB:7:G:H5'      | 16:CJ:134:ALA:O    | 1.99                     | 0.62              |
| 8:CB:123:G:N3     | 8:CB:124:G:C8      | 2.67                     | 0.62              |
| 8:CB:225:C:H2'    | 8:CB:226:A:H8      | 1.64                     | 0.62              |
| 8:CB:528:A:C8     | 8:CB:528:A:C3'     | 2.80                     | 0.62              |
| 8:CB:685:A:C4     | 8:CB:689:A:N6      | 2.67                     | 0.62              |
| 8:CB:827:U:OP2    | 8:CB:828:U:H5      | 1.82                     | 0.62              |
| 8:CB:841:G:C2     | 8:CB:938:G:N1      | 2.67                     | 0.62              |
| 8:CB:1190:G:OP1   | 18:CL:38:GLN:CA    | 2.48                     | 0.62              |
| 8:CB:1225:G:OP1   | 24:CR:90:ARG:HD2   | 2.00                     | 0.62              |
| 8:CB:1362:C:N3    | 8:CB:1363:C:C5     | 2.68                     | 0.62              |
| 8:CB:1430:G:H2'   | 8:CB:1431:A:C8     | 2.35                     | 0.62              |
| 8:CB:1566:A:C6    | 9:CC:213:ARG:NH2   | 2.68                     | 0.62              |
| 8:CB:2060:A:H1'   | 55:CB:5376:HOH:O   | 1.98                     | 0.62              |
| 8:CB:2488:G:C2    | 8:CB:2489:U:C5     | 2.88                     | 0.62              |
| 8:CB:2678:C:C2'   | 8:CB:2679:A:C8     | 2.77                     | 0.62              |
| 18:CL:117:THR:CG2 | 18:CL:119:PRO:HD2  | 2.30                     | 0.62              |
| 19:CM:5:LYS:NZ    | 19:CM:8:LYS:HE3    | 2.10                     | 0.62              |
| 19:CM:90:GLU:HA   | 19:CM:91:TYR:CE1   | 2.35                     | 0.62              |
| 20:CN:96:ARG:HH22 | 20:CN:116:VAL:HG22 | 1.63                     | 0.62              |
| 25:CS:70:LYS:O    | 25:CS:71:VAL:HB    | 1.99                     | 0.62              |
| 25:CS:79:GLY:HA3  | 25:CS:100:THR:HG23 | 1.81                     | 0.62              |
| 30:CX:26:PHE:HA   | 30:CX:29:ARG:HB2   | 1.80                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:525:C:C4     | 33:DA:526:C:C5     | 2.88                     | 0.62              |
| 33:DA:659:U:OP1    | 47:DO:4:THR:HG23   | 1.99                     | 0.62              |
| 33:DA:729:A:N3     | 33:DA:730:G:C8     | 2.68                     | 0.62              |
| 33:DA:1237:C:OP1   | 33:DA:1238:A:H1'   | 1.99                     | 0.62              |
| 33:DA:1348:U:H6    | 33:DA:1348:U:H5'   | 1.64                     | 0.62              |
| 35:DC:133:MET:O    | 35:DC:137:VAL:HG23 | 2.00                     | 0.62              |
| 36:DD:123:MET:HA   | 36:DD:128:VAL:HA   | 1.82                     | 0.62              |
| 37:DE:64:GLU:HA    | 37:DE:67:ARG:NH1   | 2.15                     | 0.62              |
| 44:DL:86:VAL:HG11  | 44:DL:89:LEU:HD23  | 1.82                     | 0.62              |
| 52:DT:65:LEU:HD12  | 52:DT:66:ILE:CD1   | 2.27                     | 0.62              |
| 7:AA:59:A:H2'      | 7:AA:60:C:C6       | 2.35                     | 0.62              |
| 8:AB:38:A:C4'      | 11:AE:46:GLN:HG3   | 2.29                     | 0.62              |
| 8:AB:217:A:C4      | 8:AB:218:A:C8      | 2.87                     | 0.62              |
| 8:AB:393:C:C2      | 8:AB:394:C:C5      | 2.82                     | 0.62              |
| 8:AB:460:A:H2'     | 8:AB:461:C:O4'     | 2.00                     | 0.62              |
| 8:AB:1172:C:H2'    | 8:AB:1173:U:C1'    | 2.29                     | 0.62              |
| 8:AB:1189:A:C2     | 8:AB:1190:G:H1'    | 2.35                     | 0.62              |
| 8:AB:1256:G:C2     | 8:AB:1257:C:C5     | 2.87                     | 0.62              |
| 8:AB:1708:C:H2'    | 8:AB:1709:U:H6     | 1.64                     | 0.62              |
| 8:AB:1764:C:C6     | 8:AB:1764:C:C3'    | 2.83                     | 0.62              |
| 8:AB:1824:G:N3     | 9:AC:249:VAL:CG1   | 2.63                     | 0.62              |
| 8:AB:1965:C:N4     | 8:AB:1966:A:C6     | 2.67                     | 0.62              |
| 8:AB:2620:C:OP1    | 10:AD:157:LYS:HG2  | 2.00                     | 0.62              |
| 8:AB:2820:A:O3'    | 20:AN:3:HIS:HD2    | 1.83                     | 0.62              |
| 9:AC:49:THR:HG22   | 9:AC:50:THR:N      | 2.13                     | 0.62              |
| 11:AE:128:ALA:HB3  | 11:AE:129:PRO:HD3  | 1.80                     | 0.62              |
| 11:AE:134:LEU:HA   | 11:AE:137:LYS:HZ3  | 1.64                     | 0.62              |
| 13:AG:32:LEU:HD11  | 13:AG:74:MET:HB3   | 1.81                     | 0.62              |
| 14:AH:3:VAL:HG22   | 14:AH:21:VAL:CG1   | 2.25                     | 0.62              |
| 19:AM:71:LYS:HD2   | 19:AM:71:LYS:C     | 2.19                     | 0.62              |
| 19:AM:129:THR:HG22 | 19:AM:131:VAL:HG22 | 1.81                     | 0.62              |
| 20:AN:96:ARG:HH22  | 20:AN:116:VAL:HG22 | 1.61                     | 0.62              |
| 27:AU:78:LYS:CG    | 27:AU:96:LYS:HE2   | 2.30                     | 0.62              |
| 28:AV:59:GLU:HG2   | 28:AV:60:VAL:H     | 1.64                     | 0.62              |
| 29:AW:23:LYS:CE    | 29:AW:24:ARG:H     | 2.09                     | 0.62              |
| 29:AW:45:HIS:C     | 29:AW:57:THR:HG21  | 2.20                     | 0.62              |
| 33:BA:124:C:C4     | 33:BA:125:U:C5     | 2.88                     | 0.62              |
| 33:BA:189:A:H5''   | 33:BA:189:A:H8     | 1.65                     | 0.62              |
| 33:BA:251:G:H4'    | 33:BA:252:U:O5'    | 2.00                     | 0.62              |
| 33:BA:274:A:H1'    | 33:BA:275:G:O4'    | 1.99                     | 0.62              |
| 33:BA:642:A:C2     | 33:BA:643:C:C2     | 2.87                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:748:G:C5     | 33:BA:749:A:N7     | 2.67                     | 0.62              |
| 33:BA:980:C:H2'    | 33:BA:981:U:O4'    | 1.99                     | 0.62              |
| 33:BA:1074:G:C2'   | 33:BA:1075:U:H5''  | 2.29                     | 0.62              |
| 33:BA:1259:C:N3    | 33:BA:1260:G:H1'   | 2.14                     | 0.62              |
| 35:BC:112:ALA:HB2  | 35:BC:182:ASP:HB3  | 1.82                     | 0.62              |
| 47:BO:53:ARG:HA    | 47:BO:56:LEU:HD12  | 1.81                     | 0.62              |
| 48:BP:75:ILE:HG22  | 48:BP:80:LYS:HG3   | 1.81                     | 0.62              |
| 2:C1:12:SER:HA     | 2:C1:50:GLU:CA     | 2.12                     | 0.62              |
| 8:CB:309:A:C6      | 8:CB:330:A:C5      | 2.88                     | 0.62              |
| 8:CB:1286:A:C6     | 8:CB:1289:C:N3     | 2.68                     | 0.62              |
| 8:CB:1340:U:OP1    | 26:CT:19:LYS:HE2   | 2.00                     | 0.62              |
| 8:CB:1342:A:N1     | 8:CB:1345:C:C2     | 2.68                     | 0.62              |
| 8:CB:1351:C:O2'    | 8:CB:1571:A:H1'    | 1.98                     | 0.62              |
| 8:CB:1857:G:O2'    | 8:CB:1884:G:N2     | 2.33                     | 0.62              |
| 8:CB:2073:C:O2     | 8:CB:2437:G:N1     | 2.31                     | 0.62              |
| 8:CB:2455:G:H2'    | 8:CB:2456:C:C5     | 2.33                     | 0.62              |
| 8:CB:2697:G:N7     | 8:CB:2698:U:C5     | 2.68                     | 0.62              |
| 8:CB:2851:A:O2'    | 8:CB:2852:G:H5'    | 1.98                     | 0.62              |
| 10:CD:6:GLY:O      | 10:CD:27:ILE:HG22  | 1.99                     | 0.62              |
| 10:CD:184:ARG:HH11 | 22:CP:4:ILE:CG2    | 2.11                     | 0.62              |
| 19:CM:90:GLU:C     | 19:CM:91:TYR:CG    | 2.73                     | 0.62              |
| 20:CN:3:HIS:HD2    | 55:CN:202:HOH:O    | 1.82                     | 0.62              |
| 26:CT:29:THR:HG22  | 26:CT:86:THR:CG2   | 2.29                     | 0.62              |
| 30:CX:37:LEU:HD23  | 30:CX:38:GLN:HG3   | 1.81                     | 0.62              |
| 33:DA:154:U:H2'    | 33:DA:155:A:H8     | 1.63                     | 0.62              |
| 33:DA:461:A:H3'    | 33:DA:462:G:C4'    | 2.29                     | 0.62              |
| 33:DA:727:G:H5''   | 33:DA:741:G:N2     | 2.14                     | 0.62              |
| 33:DA:1081:A:O2'   | 33:DA:1082:A:H5'   | 1.99                     | 0.62              |
| 35:DC:171:ARG:C    | 35:DC:172:VAL:HG22 | 2.20                     | 0.62              |
| 36:DD:111:ALA:C    | 36:DD:113:ALA:H    | 2.03                     | 0.62              |
| 37:DE:61:LYS:HB3   | 37:DE:61:LYS:HZ2   | 1.64                     | 0.62              |
| 47:DO:53:ARG:HA    | 47:DO:56:LEU:HD12  | 1.82                     | 0.62              |
| 3:A2:16:HIS:NE2    | 8:AB:465:G:O4'     | 2.33                     | 0.62              |
| 4:A3:7:ARG:CZ      | 8:AB:250:G:P       | 2.88                     | 0.62              |
| 7:AA:79:G:O2'      | 7:AA:80:U:H5'      | 1.99                     | 0.62              |
| 8:AB:352:A:H2'     | 8:AB:353:C:C6      | 2.35                     | 0.62              |
| 8:AB:463:G:C2      | 8:AB:467:G:C6      | 2.88                     | 0.62              |
| 8:AB:749:A:C5      | 8:AB:1618:A:N1     | 2.68                     | 0.62              |
| 8:AB:910:A:C2      | 8:AB:911:A:N1      | 2.68                     | 0.62              |
| 8:AB:1337:G:H5''   | 8:AB:1337:G:C8     | 2.35                     | 0.62              |
| 8:AB:1806:C:H3'    | 8:AB:1806:C:C6     | 2.31                     | 0.62              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2746:U:H5''   | 8:AB:2747:G:OP2   | 1.99                     | 0.62              |
| 8:AB:2892:G:C8     | 8:AB:2892:G:H3'   | 2.35                     | 0.62              |
| 10:AD:107:VAL:HG22 | 10:AD:108:ASP:N   | 2.13                     | 0.62              |
| 13:AG:106:LEU:HD12 | 13:AG:106:LEU:H   | 1.63                     | 0.62              |
| 18:AL:57:LEU:O     | 18:AL:59:ARG:N    | 2.33                     | 0.62              |
| 18:AL:61:LEU:CB    | 18:AL:62:PRO:HD2  | 2.29                     | 0.62              |
| 22:AP:51:ASN:ND2   | 22:AP:97:TYR:HD2  | 1.97                     | 0.62              |
| 28:AV:65:VAL:O     | 28:AV:67:GLY:N    | 2.32                     | 0.62              |
| 33:BA:676:A:C2     | 33:BA:677:U:N3    | 2.68                     | 0.62              |
| 33:BA:1236:A:H2'   | 33:BA:1237:C:C5   | 2.35                     | 0.62              |
| 33:BA:1284:C:H3'   | 33:BA:1285:A:H5'' | 1.81                     | 0.62              |
| 33:BA:1320:C:H42   | 51:BS:35:ARG:NH1  | 1.96                     | 0.62              |
| 33:BA:1324:A:H2'   | 33:BA:1325:C:O4'  | 1.99                     | 0.62              |
| 33:BA:1499:A:C4    | 33:BA:1500:A:C8   | 2.87                     | 0.62              |
| 37:BE:17:VAL:HG23  | 37:BE:34:ALA:N    | 2.14                     | 0.62              |
| 37:BE:45:VAL:HG11  | 37:BE:117:ALA:HA  | 1.80                     | 0.62              |
| 38:BF:47:LEU:HB3   | 50:BR:65:SER:OG   | 1.98                     | 0.62              |
| 46:BN:16:ALA:HB2   | 46:BN:54:SER:HA   | 1.81                     | 0.62              |
| 46:BN:63:CYS:HB3   | 46:BN:66:THR:C    | 2.20                     | 0.62              |
| 48:BP:22:ALA:HA    | 48:BP:32:PHE:HA   | 1.81                     | 0.62              |
| 8:CB:75:G:O3'      | 30:CX:48:ARG:HD3  | 2.00                     | 0.62              |
| 8:CB:253:C:H2'     | 8:CB:253:C:O2     | 1.99                     | 0.62              |
| 8:CB:507:A:H1'     | 8:CB:509:C:C4     | 2.34                     | 0.62              |
| 8:CB:2023:C:H2'    | 8:CB:2024:G:H8    | 1.65                     | 0.62              |
| 8:CB:2369:A:H2'    | 8:CB:2370:G:H8    | 1.64                     | 0.62              |
| 8:CB:2685:G:O2'    | 8:CB:2686:G:H5'   | 2.00                     | 0.62              |
| 8:CB:2733:A:C2'    | 8:CB:2734:A:H5'   | 2.30                     | 0.62              |
| 16:CJ:8:PRO:HB2    | 16:CJ:10:THR:O    | 2.00                     | 0.62              |
| 16:CJ:17:VAL:HG13  | 16:CJ:57:LEU:HD21 | 1.82                     | 0.62              |
| 22:CP:92:ARG:O     | 22:CP:92:ARG:HG3  | 2.00                     | 0.62              |
| 23:CQ:35:PHE:O     | 23:CQ:35:PHE:CD1  | 2.48                     | 0.62              |
| 31:CY:35:VAL:HG12  | 31:CY:36:GLU:N    | 2.15                     | 0.62              |
| 33:DA:189:A:H8     | 33:DA:189:A:C5'   | 2.12                     | 0.62              |
| 33:DA:416:G:H5''   | 33:DA:417:G:OP2   | 1.98                     | 0.62              |
| 33:DA:789:U:H3'    | 33:DA:789:U:O2    | 2.00                     | 0.62              |
| 33:DA:793:U:O2     | 33:DA:1516:G:H4'  | 1.99                     | 0.62              |
| 33:DA:845:A:H3'    | 33:DA:846:G:O4'   | 2.00                     | 0.62              |
| 33:DA:1458:G:C4    | 33:DA:1459:G:C8   | 2.88                     | 0.62              |
| 33:DA:1460:C:H2'   | 33:DA:1461:G:H8   | 1.64                     | 0.62              |
| 34:DB:166:ASP:HB2  | 34:DB:190:SER:OG  | 2.00                     | 0.62              |
| 35:DC:123:LEU:HD13 | 35:DC:123:LEU:N   | 2.15                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:DG:8:GLN:HG3    | 39:DG:10:LYS:H     | 1.65                     | 0.62              |
| 46:DN:3:GLN:HG3    | 46:DN:6:LYS:HD2    | 1.82                     | 0.62              |
| 1:A0:8:THR:HG21    | 8:AB:2021:C:P      | 2.40                     | 0.62              |
| 2:A1:15:GLY:HA3    | 2:A1:47:ILE:HD12   | 1.81                     | 0.62              |
| 8:AB:192:C:N4      | 8:AB:203:A:H1'     | 2.15                     | 0.62              |
| 8:AB:1562:U:H2'    | 8:AB:1563:U:H6     | 1.64                     | 0.62              |
| 8:AB:2213:U:O2     | 8:AB:2213:U:C3'    | 2.44                     | 0.62              |
| 8:AB:2457:U:O2     | 8:AB:2457:U:H2'    | 1.98                     | 0.62              |
| 8:AB:2513:A:C6     | 8:AB:2514:U:C4     | 2.87                     | 0.62              |
| 8:AB:2514:U:H2'    | 8:AB:2515:C:H6     | 1.64                     | 0.62              |
| 8:AB:2741:A:N6     | 8:AB:2763:G:H1'    | 2.15                     | 0.62              |
| 8:AB:2886:A:N3     | 8:AB:2887:A:C8     | 2.68                     | 0.62              |
| 9:AC:143:VAL:CG2   | 9:AC:152:GLN:HG3   | 2.29                     | 0.62              |
| 10:AD:46:ARG:O     | 10:AD:47:ALA:HB2   | 2.00                     | 0.62              |
| 11:AE:167:VAL:HG12 | 11:AE:168:ASP:N    | 2.13                     | 0.62              |
| 14:AH:130:VAL:CB   | 14:AH:142:VAL:HB   | 2.20                     | 0.62              |
| 18:AL:48:ARG:O     | 18:AL:50:PHE:N     | 2.33                     | 0.62              |
| 19:AM:31:PHE:O     | 19:AM:102:LEU:HA   | 1.99                     | 0.62              |
| 19:AM:110:GLU:C    | 19:AM:112:LEU:H    | 2.01                     | 0.62              |
| 21:AO:12:THR:O     | 21:AO:15:ARG:N     | 2.28                     | 0.62              |
| 22:AP:27:VAL:HG21  | 22:AP:84:SER:HB2   | 1.82                     | 0.62              |
| 27:AU:3:LYS:HB2    | 27:AU:3:LYS:HZ1    | 1.61                     | 0.62              |
| 29:AW:59:PHE:HE1   | 29:AW:81:ILE:HD13  | 1.62                     | 0.62              |
| 31:AY:35:VAL:HG12  | 31:AY:36:GLU:N     | 2.14                     | 0.62              |
| 31:AY:53:MET:SD    | 31:AY:53:MET:N     | 2.65                     | 0.62              |
| 32:AZ:28:VAL:HG23  | 32:AZ:29:GLY:H     | 1.64                     | 0.62              |
| 33:BA:115:G:N1     | 33:BA:313:A:C2     | 2.67                     | 0.62              |
| 33:BA:563:A:N7     | 33:BA:567:G:H1'    | 2.15                     | 0.62              |
| 33:BA:579:A:H5'    | 33:BA:728:A:H1'    | 1.80                     | 0.62              |
| 33:BA:671:G:C6     | 33:BA:672:U:C2     | 2.88                     | 0.62              |
| 33:BA:696:A:H8     | 33:BA:696:A:O5'    | 1.83                     | 0.62              |
| 33:BA:860:A:H2'    | 33:BA:861:G:O4'    | 1.99                     | 0.62              |
| 35:BC:6:PRO:HG3    | 35:BC:174:LEU:HD21 | 1.82                     | 0.62              |
| 8:CB:85:G:H5'      | 27:CU:28:LEU:HB3   | 1.82                     | 0.62              |
| 8:CB:200:U:C5      | 8:CB:201:C:C2      | 2.88                     | 0.62              |
| 8:CB:381:G:C6      | 8:CB:382:A:N7      | 2.68                     | 0.62              |
| 8:CB:578:G:H1'     | 23:CQ:32:ARG:NH2   | 2.15                     | 0.62              |
| 8:CB:770:G:H1'     | 8:CB:1379:U:O4     | 1.98                     | 0.62              |
| 8:CB:849:A:H2'     | 8:CB:850:U:C6      | 2.34                     | 0.62              |
| 8:CB:979:A:H2      | 8:CB:982:C:C2      | 2.15                     | 0.62              |
| 8:CB:1007:C:H4'    | 16:CJ:110:PRO:HD3  | 1.82                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1115:G:H5''  | 8:CB:1115:G:H8     | 1.64                     | 0.62              |
| 8:CB:1165:A:C2    | 8:CB:1185:G:C6     | 2.87                     | 0.62              |
| 8:CB:1203:U:C5    | 8:CB:1204:A:C6     | 2.87                     | 0.62              |
| 8:CB:1300:G:H1'   | 8:CB:1626:A:N1     | 2.15                     | 0.62              |
| 8:CB:1359:A:H5'   | 8:CB:1359:A:C8     | 2.35                     | 0.62              |
| 8:CB:1844:C:H5'   | 9:CC:251:THR:HB    | 1.82                     | 0.62              |
| 8:CB:2221:G:C6    | 8:CB:2222:C:C4     | 2.88                     | 0.62              |
| 8:CB:2528:U:C2'   | 8:CB:2529:G:H5''   | 2.29                     | 0.62              |
| 8:CB:2719:G:O2'   | 8:CB:2846:G:H4'    | 2.00                     | 0.62              |
| 8:CB:2734:A:H2    | 10:CD:209:ALA:OXT  | 1.83                     | 0.62              |
| 9:CC:35:LYS:CE    | 9:CC:64:VAL:HG23   | 2.30                     | 0.62              |
| 9:CC:107:LYS:HB2  | 9:CC:194:VAL:HG21  | 1.82                     | 0.62              |
| 13:CG:148:ARG:HD2 | 13:CG:163:TYR:CE2  | 2.33                     | 0.62              |
| 18:CL:141:LYS:O   | 18:CL:142:ILE:HG23 | 2.00                     | 0.62              |
| 19:CM:49:ALA:CB   | 19:CM:116:ALA:HB1  | 2.23                     | 0.62              |
| 25:CS:4:ILE:HG12  | 25:CS:106:VAL:HG12 | 1.80                     | 0.62              |
| 30:CX:7:ARG:HH12  | 30:CX:56:LEU:CD2   | 2.13                     | 0.62              |
| 33:DA:445:G:N2    | 33:DA:446:G:C4     | 2.67                     | 0.62              |
| 33:DA:577:G:N3    | 33:DA:578:C:C6     | 2.68                     | 0.62              |
| 33:DA:581:G:H21   | 33:DA:582:C:N4     | 1.98                     | 0.62              |
| 33:DA:1144:G:H22  | 33:DA:1146:A:H62   | 1.47                     | 0.62              |
| 33:DA:1419:G:C2   | 33:DA:1420:U:O2    | 2.53                     | 0.62              |
| 43:DK:63:GLN:HG2  | 43:DK:98:ALA:HB2   | 1.82                     | 0.62              |
| 49:DQ:46:HIS:CG   | 49:DQ:47:ASP:N     | 2.68                     | 0.62              |
| 49:DQ:66:LEU:HD12 | 49:DQ:71:SER:HA    | 1.82                     | 0.62              |
| 8:AB:139:U:O2     | 26:AT:49:LYS:HE2   | 2.00                     | 0.62              |
| 8:AB:225:C:H2'    | 8:AB:226:A:H8      | 1.63                     | 0.62              |
| 8:AB:277:G:H4'    | 8:AB:278:A:C8      | 2.35                     | 0.62              |
| 8:AB:672:C:C4     | 8:AB:809:G:N2      | 2.68                     | 0.62              |
| 8:AB:1956:U:H1'   | 8:AB:2552:U:OP1    | 1.99                     | 0.62              |
| 8:AB:2001:C:O3'   | 20:AN:14:SER:OG    | 2.18                     | 0.62              |
| 8:AB:2084:C:H2'   | 8:AB:2085:U:O4'    | 1.99                     | 0.62              |
| 8:AB:2599:G:C8    | 9:AC:234:GLY:HA2   | 2.35                     | 0.62              |
| 8:AB:2678:C:C2'   | 8:AB:2679:A:C8     | 2.74                     | 0.62              |
| 8:AB:2764:A:H2'   | 8:AB:2765:A:C5'    | 2.30                     | 0.62              |
| 11:AE:28:VAL:O    | 11:AE:32:VAL:HG23  | 2.00                     | 0.62              |
| 11:AE:158:PHE:CD1 | 11:AE:158:PHE:C    | 2.73                     | 0.62              |
| 13:AG:21:GLN:O    | 13:AG:36:LEU:HB2   | 2.00                     | 0.62              |
| 14:AH:25:TYR:CD1  | 14:AH:30:LEU:HB2   | 2.35                     | 0.62              |
| 16:AJ:39:LYS:O    | 16:AJ:40:HIS:C     | 2.38                     | 0.62              |
| 20:AN:65:LEU:HB3  | 20:AN:69:ARG:HG2   | 1.81                     | 0.62              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:AU:21:ARG:HH11 | 27:AU:21:ARG:CG    | 2.11                     | 0.62              |
| 33:BA:239:U:H4'   | 33:BA:240:G:OP2    | 1.99                     | 0.62              |
| 33:BA:1104:G:O2'  | 33:BA:1105:A:H5'   | 2.00                     | 0.62              |
| 33:BA:1442:G:O6   | 33:BA:1461:G:C2    | 2.53                     | 0.62              |
| 33:BA:1526:G:C8   | 33:BA:1526:G:H3'   | 2.33                     | 0.62              |
| 34:BB:90:PHE:N    | 34:BB:149:GLY:O    | 2.33                     | 0.62              |
| 36:BD:97:LEU:HD13 | 36:BD:136:VAL:HG22 | 1.81                     | 0.62              |
| 38:BF:39:LEU:HD22 | 38:BF:62:MET:HA    | 1.81                     | 0.62              |
| 41:BI:33:SER:H    | 41:BI:36:GLN:NE2   | 1.97                     | 0.62              |
| 43:BK:111:ASP:O   | 50:BR:72:ARG:HD3   | 2.00                     | 0.62              |
| 7:CA:45:A:C2'     | 7:CA:46:A:H5'      | 2.30                     | 0.62              |
| 8:CB:557:C:H2'    | 8:CB:558:U:O4'     | 2.00                     | 0.62              |
| 8:CB:800:A:N7     | 8:CB:802:A:O4'     | 2.33                     | 0.62              |
| 8:CB:912:C:O2'    | 8:CB:913:U:H5'     | 2.00                     | 0.62              |
| 8:CB:1298:C:N3    | 8:CB:1642:G:N2     | 2.40                     | 0.62              |
| 8:CB:1708:C:H2'   | 8:CB:1709:U:H6     | 1.59                     | 0.62              |
| 8:CB:1943:U:O4'   | 8:CB:1943:U:O2     | 2.18                     | 0.62              |
| 8:CB:2259:U:C2    | 8:CB:2260:C:C5     | 2.88                     | 0.62              |
| 8:CB:2358:A:N6    | 8:CB:2428:G:N1     | 2.48                     | 0.62              |
| 9:CC:143:VAL:CG2  | 9:CC:152:GLN:HG3   | 2.30                     | 0.62              |
| 10:CD:77:ARG:HB2  | 10:CD:77:ARG:HH11  | 1.65                     | 0.62              |
| 12:CF:133:GLU:HG2 | 12:CF:147:ARG:C    | 2.19                     | 0.62              |
| 19:CM:5:LYS:CG    | 19:CM:6:ARG:N      | 2.63                     | 0.62              |
| 22:CP:47:ILE:HG22 | 22:CP:48:ALA:N     | 2.13                     | 0.62              |
| 24:CR:47:VAL:HG13 | 24:CR:48:LYS:N     | 2.15                     | 0.62              |
| 27:CU:87:GLU:O    | 27:CU:89:GLY:N     | 2.33                     | 0.62              |
| 31:CY:4:ILE:O     | 31:CY:5:LYS:HB3    | 2.00                     | 0.62              |
| 33:DA:955:U:O2'   | 33:DA:1227:A:N6    | 2.33                     | 0.62              |
| 34:DB:67:LEU:HD11 | 34:DB:150:ILE:HD12 | 1.82                     | 0.62              |
| 38:DF:6:ILE:HD12  | 38:DF:7:VAL:O      | 2.00                     | 0.62              |
| 47:DO:54:GLY:O    | 47:DO:58:MET:HB2   | 1.99                     | 0.62              |
| 8:AB:115:C:H3'    | 8:AB:115:C:H6      | 1.65                     | 0.61              |
| 8:AB:585:G:H1'    | 8:AB:1256:G:N2     | 2.14                     | 0.61              |
| 8:AB:763:G:H3'    | 8:AB:763:G:C8      | 2.35                     | 0.61              |
| 8:AB:813:U:H2'    | 8:AB:814:C:C6      | 2.35                     | 0.61              |
| 8:AB:841:G:C2     | 8:AB:938:G:N1      | 2.68                     | 0.61              |
| 8:AB:1024:G:C6    | 8:AB:1025:G:C5     | 2.88                     | 0.61              |
| 8:AB:1130:U:C6    | 8:AB:2026:U:OP2    | 2.53                     | 0.61              |
| 8:AB:1232:G:C4    | 8:AB:1233:C:C5     | 2.88                     | 0.61              |
| 8:AB:1289:C:C2    | 8:AB:1290:C:C5     | 2.88                     | 0.61              |
| 8:AB:1764:C:C2    | 8:AB:1765:U:C5     | 2.86                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1775:U:H2'    | 8:AB:1776:G:C5'    | 2.30                     | 0.61              |
| 8:AB:2525:G:C2     | 8:AB:2539:C:N3     | 2.68                     | 0.61              |
| 8:AB:2719:G:O2'    | 8:AB:2846:G:H4'    | 2.00                     | 0.61              |
| 9:AC:53:ILE:HG12   | 9:AC:218:THR:CB    | 2.29                     | 0.61              |
| 10:AD:6:GLY:O      | 10:AD:27:ILE:HG22  | 1.99                     | 0.61              |
| 10:AD:197:THR:HG22 | 10:AD:198:GLY:H    | 1.64                     | 0.61              |
| 12:AF:3:LEU:O      | 12:AF:3:LEU:HD23   | 1.99                     | 0.61              |
| 18:AL:123:ARG:HB2  | 18:AL:143:GLU:H    | 1.63                     | 0.61              |
| 28:AV:41:GLU:O     | 28:AV:42:LEU:HD23  | 2.00                     | 0.61              |
| 29:AW:19:ARG:HH21  | 29:AW:22:VAL:HG22  | 1.65                     | 0.61              |
| 32:AZ:48:GLN:O     | 32:AZ:51:VAL:HB    | 2.00                     | 0.61              |
| 33:BA:73:C:H2'     | 33:BA:74:A:O4'     | 1.99                     | 0.61              |
| 33:BA:107:G:O6     | 52:BT:6:ALA:HB2    | 1.99                     | 0.61              |
| 33:BA:1144:G:H2'   | 33:BA:1145:A:C8    | 2.34                     | 0.61              |
| 33:BA:1207:G:H2'   | 33:BA:1208:C:O4'   | 2.00                     | 0.61              |
| 36:BD:102:TYR:CB   | 36:BD:110:ARG:HG2  | 2.30                     | 0.61              |
| 44:BL:27:PRO:HG2   | 44:BL:28:GLN:H     | 1.65                     | 0.61              |
| 45:BM:18:LEU:CD2   | 45:BM:21:ILE:HD11  | 2.30                     | 0.61              |
| 1:C0:5:ASN:HD21    | 8:CB:2019:A:H62    | 1.43                     | 0.61              |
| 2:C1:14:ALA:O      | 2:C1:48:TYR:HA     | 2.00                     | 0.61              |
| 8:CB:300:A:N7      | 8:CB:334:C:H4'     | 2.14                     | 0.61              |
| 8:CB:778:G:C5      | 8:CB:779:U:C5      | 2.87                     | 0.61              |
| 8:CB:1022:G:N2     | 8:CB:1142:A:H2     | 1.94                     | 0.61              |
| 8:CB:1069:A:H5'    | 8:CB:1070:A:C8     | 2.35                     | 0.61              |
| 8:CB:1478:G:H8     | 8:CB:1478:G:O5'    | 1.81                     | 0.61              |
| 8:CB:1631:G:C8     | 8:CB:1631:G:C3'    | 2.81                     | 0.61              |
| 8:CB:1668:A:N3     | 8:CB:1670:C:C4     | 2.67                     | 0.61              |
| 8:CB:1707:G:C8     | 8:CB:1756:G:C4     | 2.87                     | 0.61              |
| 8:CB:1829:A:H5''   | 8:CB:1829:A:C8     | 2.25                     | 0.61              |
| 8:CB:1853:A:H2'    | 8:CB:1854:A:C8     | 2.36                     | 0.61              |
| 8:CB:2009:A:O3'    | 25:CS:41:LYS:HB2   | 2.00                     | 0.61              |
| 8:CB:2056:G:C2     | 8:CB:2577:A:N3     | 2.67                     | 0.61              |
| 8:CB:2250:G:H8     | 8:CB:2250:G:O5'    | 1.83                     | 0.61              |
| 8:CB:2290:G:H2'    | 8:CB:2291:U:H6     | 1.64                     | 0.61              |
| 8:CB:2352:A:C2     | 29:CW:29:SER:CB    | 2.83                     | 0.61              |
| 9:CC:264:LYS:NZ    | 9:CC:264:LYS:N     | 2.40                     | 0.61              |
| 11:CE:106:LYS:HG3  | 11:CE:107:SER:N    | 2.15                     | 0.61              |
| 14:CH:108:VAL:O    | 14:CH:108:VAL:HG12 | 2.00                     | 0.61              |
| 18:CL:110:VAL:HG23 | 18:CL:126:ARG:HH12 | 1.63                     | 0.61              |
| 19:CM:31:PHE:O     | 19:CM:102:LEU:HA   | 2.00                     | 0.61              |
| 23:CQ:46:TYR:CZ    | 24:CR:89:HIS:CE1   | 2.88                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 23:CQ:69:ARG:CZ    | 23:CQ:69:ARG:CB   | 2.78                     | 0.61              |
| 27:CU:21:ARG:HH11  | 27:CU:21:ARG:CG   | 2.10                     | 0.61              |
| 31:CY:9:THR:HB     | 31:CY:53:MET:C    | 2.20                     | 0.61              |
| 33:DA:560:A:N1     | 33:DA:566:G:H5'   | 2.15                     | 0.61              |
| 33:DA:894:G:C2     | 33:DA:895:G:N7    | 2.68                     | 0.61              |
| 36:DD:102:TYR:C    | 36:DD:104:MET:H   | 2.03                     | 0.61              |
| 42:DJ:5:ARG:HD2    | 42:DJ:79:PRO:CG   | 2.30                     | 0.61              |
| 44:DL:105:GLY:HA3  | 44:DL:117:GLY:O   | 2.00                     | 0.61              |
| 45:DM:3:ILE:HG21   | 45:DM:21:ILE:HD13 | 1.82                     | 0.61              |
| 4:A3:2:LYS:HE2     | 4:A3:2:LYS:C      | 2.20                     | 0.61              |
| 7:AA:52:A:H3'      | 7:AA:53:A:C8      | 2.35                     | 0.61              |
| 7:AA:103:U:H2'     | 7:AA:104:A:C8     | 2.35                     | 0.61              |
| 8:AB:826:U:C3'     | 8:AB:828:U:H6     | 2.08                     | 0.61              |
| 8:AB:1022:G:N7     | 16:AJ:68:LYS:CE   | 2.62                     | 0.61              |
| 8:AB:1417:C:H4'    | 8:AB:1588:G:O4'   | 1.99                     | 0.61              |
| 8:AB:2502:G:H5'    | 8:AB:2503:A:C5'   | 2.30                     | 0.61              |
| 9:AC:45:ASN:O      | 9:AC:47:ARG:N     | 2.34                     | 0.61              |
| 9:AC:235:GLU:CG    | 9:AC:236:GLY:H    | 2.13                     | 0.61              |
| 10:AD:46:ARG:HD2   | 10:AD:80:TRP:CZ2  | 2.36                     | 0.61              |
| 12:AF:133:GLU:HG2  | 12:AF:147:ARG:C   | 2.20                     | 0.61              |
| 15:AI:18:ASN:N     | 15:AI:19:PRO:CD   | 2.63                     | 0.61              |
| 22:AP:25:VAL:O     | 22:AP:47:ILE:HB   | 2.00                     | 0.61              |
| 22:AP:59:THR:HG23  | 22:AP:76:HIS:CG   | 2.35                     | 0.61              |
| 30:AX:16:THR:O     | 30:AX:18:LEU:N    | 2.34                     | 0.61              |
| 32:AZ:20:ASN:OD1   | 32:AZ:21:VAL:N    | 2.33                     | 0.61              |
| 33:BA:376:G:H2'    | 33:BA:377:G:C8    | 2.34                     | 0.61              |
| 33:BA:532:A:H2'    | 35:BC:192:TYR:HE2 | 1.66                     | 0.61              |
| 33:BA:953:G:C5     | 33:BA:954:G:C8    | 2.88                     | 0.61              |
| 33:BA:1010:U:H5'   | 33:BA:1011:C:OP2  | 1.99                     | 0.61              |
| 33:BA:1206:G:C8    | 33:BA:1207:G:N7   | 2.69                     | 0.61              |
| 33:BA:1238:A:H5'   | 33:BA:1239:A:OP2  | 2.01                     | 0.61              |
| 33:BA:1433:A:H2'   | 33:BA:1434:A:C8   | 2.35                     | 0.61              |
| 34:BB:116:LEU:HD13 | 34:BB:140:LEU:HG  | 1.82                     | 0.61              |
| 34:BB:135:MET:O    | 34:BB:138:ARG:HB2 | 1.99                     | 0.61              |
| 45:BM:72:ILE:O     | 45:BM:76:ILE:HG13 | 2.00                     | 0.61              |
| 1:C0:29:VAL:HG21   | 1:C0:34:GLY:HA2   | 1.82                     | 0.61              |
| 1:C0:30:ASP:O      | 1:C0:31:LYS:HG3   | 2.00                     | 0.61              |
| 8:CB:264:C:O2'     | 8:CB:428:A:N1     | 2.33                     | 0.61              |
| 8:CB:547:A:H2'     | 8:CB:547:A:N3     | 2.15                     | 0.61              |
| 8:CB:583:G:N1      | 8:CB:584:C:C4     | 2.68                     | 0.61              |
| 8:CB:903:C:H2'     | 8:CB:904:G:O4'    | 1.99                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1199:U:H2'    | 8:CB:1200:C:C6    | 2.35                     | 0.61              |
| 8:CB:1204:A:C2     | 8:CB:1241:A:N1    | 2.69                     | 0.61              |
| 8:CB:1361:G:N3     | 8:CB:1362:C:C5    | 2.68                     | 0.61              |
| 8:CB:1401:G:C6     | 8:CB:1402:U:C4    | 2.88                     | 0.61              |
| 8:CB:1764:C:C4     | 8:CB:1765:U:H5    | 2.18                     | 0.61              |
| 8:CB:1823:G:H5'    | 8:CB:1823:G:C8    | 2.26                     | 0.61              |
| 8:CB:1824:G:N3     | 9:CC:249:VAL:CG1  | 2.63                     | 0.61              |
| 8:CB:1988:G:H2'    | 8:CB:1989:G:C5'   | 2.31                     | 0.61              |
| 8:CB:1998:A:H2'    | 8:CB:1999:C:O4'   | 1.99                     | 0.61              |
| 8:CB:2093:G:O2'    | 8:CB:2094:A:H5'   | 1.99                     | 0.61              |
| 8:CB:2253:G:O5'    | 8:CB:2253:G:H8    | 1.83                     | 0.61              |
| 8:CB:2721:A:C4     | 8:CB:2722:G:C8    | 2.88                     | 0.61              |
| 10:CD:63:PRO:C     | 10:CD:65:ALA:N    | 2.52                     | 0.61              |
| 10:CD:107:VAL:HG22 | 10:CD:108:ASP:N   | 2.13                     | 0.61              |
| 13:CG:98:LYS:O     | 13:CG:98:LYS:HG2  | 1.98                     | 0.61              |
| 14:CH:68:ARG:CG    | 14:CH:71:LYS:HD3  | 2.30                     | 0.61              |
| 15:CI:102:ARG:HB3  | 15:CI:102:ARG:NH1 | 2.15                     | 0.61              |
| 16:CJ:15:TRP:HB2   | 16:CJ:138:GLN:O   | 2.00                     | 0.61              |
| 18:CL:111:ILE:HG12 | 18:CL:112:LEU:N   | 2.15                     | 0.61              |
| 26:CT:15:HIS:H     | 26:CT:31:VAL:CG2  | 2.13                     | 0.61              |
| 29:CW:23:LYS:CE    | 29:CW:24:ARG:H    | 2.08                     | 0.61              |
| 29:CW:71:LYS:O     | 29:CW:72:GLY:O    | 2.18                     | 0.61              |
| 29:CW:75:ASN:CG    | 29:CW:76:ARG:H    | 2.02                     | 0.61              |
| 33:DA:124:C:C4     | 33:DA:125:U:C5    | 2.88                     | 0.61              |
| 33:DA:377:G:C2     | 33:DA:378:G:C5    | 2.88                     | 0.61              |
| 33:DA:557:G:H4'    | 55:DA:5123:HOH:O  | 1.99                     | 0.61              |
| 33:DA:599:C:H2'    | 33:DA:600:A:C8    | 2.35                     | 0.61              |
| 33:DA:853:C:C2     | 33:DA:854:U:C6    | 2.88                     | 0.61              |
| 33:DA:874:G:N2     | 33:DA:875:U:H1'   | 2.15                     | 0.61              |
| 33:DA:1225:A:H3'   | 33:DA:1226:C:C6   | 2.35                     | 0.61              |
| 33:DA:1241:G:N2    | 33:DA:1242:G:C4   | 2.68                     | 0.61              |
| 33:DA:1433:A:N6    | 33:DA:1434:A:N1   | 2.47                     | 0.61              |
| 33:DA:1509:C:O2    | 33:DA:1509:C:H2'  | 1.98                     | 0.61              |
| 35:DC:38:VAL:O     | 35:DC:42:LEU:HB2  | 2.00                     | 0.61              |
| 35:DC:172:VAL:HG13 | 35:DC:202:PHE:CB  | 2.27                     | 0.61              |
| 39:DG:112:ASP:HB2  | 39:DG:118:ARG:HG2 | 1.82                     | 0.61              |
| 43:DK:74:LYS:HE3   | 43:DK:104:PHE:CZ  | 2.36                     | 0.61              |
| 46:DN:69:PRO:O     | 46:DN:71:GLY:N    | 2.33                     | 0.61              |
| 48:DP:78:VAL:O     | 48:DP:80:LYS:HG3  | 1.99                     | 0.61              |
| 49:DQ:20:ILE:HG12  | 49:DQ:52:CYS:SG   | 2.40                     | 0.61              |
| 2:A1:19:PHE:HD2    | 2:A1:40:PRO:HA    | 1.65                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:39:G:H2'     | 8:AB:40:U:H6       | 1.66                     | 0.61              |
| 8:AB:62:U:H2'     | 8:AB:63:A:N9       | 2.15                     | 0.61              |
| 8:AB:85:G:H5''    | 8:AB:85:G:C8       | 2.33                     | 0.61              |
| 8:AB:221:A:C2     | 8:AB:233:A:C8      | 2.88                     | 0.61              |
| 8:AB:296:U:H3     | 8:AB:342:A:H61     | 1.46                     | 0.61              |
| 8:AB:570:G:N7     | 8:AB:2030:A:N6     | 2.47                     | 0.61              |
| 8:AB:573:U:O2'    | 8:AB:574:A:H3'     | 2.00                     | 0.61              |
| 8:AB:640:C:H6     | 8:AB:640:C:H5''    | 1.64                     | 0.61              |
| 8:AB:849:A:H2'    | 8:AB:850:U:C6      | 2.36                     | 0.61              |
| 8:AB:1003:G:H8    | 8:AB:1003:G:C5'    | 2.13                     | 0.61              |
| 8:AB:1024:G:C6    | 8:AB:1025:G:C6     | 2.88                     | 0.61              |
| 8:AB:1137:G:N2    | 16:AJ:107:GLY:O    | 2.33                     | 0.61              |
| 8:AB:1272:A:C4    | 8:AB:1618:A:C8     | 2.88                     | 0.61              |
| 8:AB:1347:A:H2'   | 8:AB:1348:C:C5'    | 2.30                     | 0.61              |
| 8:AB:1390:U:H2'   | 8:AB:1391:U:H5'    | 1.81                     | 0.61              |
| 8:AB:1792:G:OP1   | 9:AC:203:VAL:HG23  | 2.01                     | 0.61              |
| 8:AB:2488:G:N2    | 8:AB:2489:U:C2     | 2.69                     | 0.61              |
| 11:AE:16:GLU:HB3  | 11:AE:196:VAL:HG22 | 1.83                     | 0.61              |
| 11:AE:52:VAL:C    | 11:AE:54:GLY:H     | 2.02                     | 0.61              |
| 11:AE:197:GLU:O   | 11:AE:199:MET:N    | 2.33                     | 0.61              |
| 17:AK:43:ILE:HG22 | 17:AK:54:LYS:HA    | 1.82                     | 0.61              |
| 18:AL:18:ARG:HG2  | 18:AL:19:LEU:N     | 2.15                     | 0.61              |
| 18:AL:72:ALA:HB3  | 18:AL:106:GLU:OE2  | 2.00                     | 0.61              |
| 19:AM:8:LYS:HD3   | 19:AM:70:ASP:HA    | 1.82                     | 0.61              |
| 20:AN:10:LEU:H    | 20:AN:17:ARG:NH1   | 1.97                     | 0.61              |
| 21:AO:18:LEU:O    | 21:AO:20:GLU:N     | 2.33                     | 0.61              |
| 21:AO:80:GLU:HG3  | 21:AO:114:GLY:HA3  | 1.82                     | 0.61              |
| 22:AP:74:GLN:NE2  | 22:AP:74:GLN:HA    | 2.10                     | 0.61              |
| 25:AS:79:GLY:HA3  | 25:AS:100:THR:HG23 | 1.82                     | 0.61              |
| 29:AW:31:LEU:O    | 29:AW:32:ALA:HB3   | 2.00                     | 0.61              |
| 29:AW:44:PHE:CE2  | 29:AW:60:ALA:HB3   | 2.34                     | 0.61              |
| 33:BA:50:A:N6     | 33:BA:361:G:O4'    | 2.34                     | 0.61              |
| 33:BA:152:A:N6    | 33:BA:170:U:N3     | 2.48                     | 0.61              |
| 33:BA:417:G:O2'   | 33:BA:540:G:H5''   | 2.00                     | 0.61              |
| 33:BA:514:C:N4    | 33:BA:537:G:H22    | 1.97                     | 0.61              |
| 33:BA:620:C:C2    | 36:BD:131:ILE:HG12 | 2.34                     | 0.61              |
| 33:BA:680:C:H5'   | 33:BA:680:C:H6     | 1.64                     | 0.61              |
| 33:BA:724:G:N3    | 33:BA:725:G:C8     | 2.68                     | 0.61              |
| 33:BA:791:G:O2'   | 33:BA:792:A:H5'    | 1.99                     | 0.61              |
| 33:BA:1473:G:C5   | 33:BA:1474:U:C5    | 2.88                     | 0.61              |
| 35:BC:57:GLU:O    | 35:BC:58:ARG:HG3   | 1.99                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:BH:12:ARG:HB2  | 40:BH:26:MET:CE   | 2.29                     | 0.61              |
| 2:C1:24:LYS:HZ1   | 8:CB:2285:C:H41   | 1.46                     | 0.61              |
| 7:CA:99:A:C5      | 7:CA:100:G:N7     | 2.68                     | 0.61              |
| 8:CB:116:C:O2'    | 8:CB:126:A:H8     | 1.83                     | 0.61              |
| 8:CB:1108:U:N3    | 8:CB:1109:C:C5    | 2.69                     | 0.61              |
| 8:CB:1275:A:C5    | 20:CN:16:HIS:CE1  | 2.88                     | 0.61              |
| 8:CB:1387:A:H2'   | 8:CB:1388:G:C8    | 2.36                     | 0.61              |
| 8:CB:1611:C:N3    | 8:CB:1612:C:C5    | 2.69                     | 0.61              |
| 8:CB:1796:U:H1'   | 8:CB:1824:G:H22   | 1.65                     | 0.61              |
| 8:CB:2457:U:O2    | 8:CB:2457:U:H2'   | 2.00                     | 0.61              |
| 8:CB:2723:C:OP1   | 20:CN:2:ARG:NH2   | 2.33                     | 0.61              |
| 8:CB:2880:C:C6    | 20:CN:91:ALA:HB3  | 2.35                     | 0.61              |
| 12:CF:101:ARG:NH1 | 12:CF:137:PHE:HB3 | 2.15                     | 0.61              |
| 16:CJ:41:LYS:O    | 23:CQ:63:ARG:NH1  | 2.31                     | 0.61              |
| 18:CL:7:SER:HB3   | 18:CL:8:PRO:CD    | 2.31                     | 0.61              |
| 21:CO:57:ALA:HB1  | 21:CO:61:GLN:HE21 | 1.65                     | 0.61              |
| 22:CP:79:VAL:C    | 22:CP:81:ASP:H    | 2.03                     | 0.61              |
| 32:CZ:16:CYS:HA   | 32:CZ:21:VAL:CG2  | 2.30                     | 0.61              |
| 33:DA:31:G:N2     | 33:DA:47:C:H4'    | 2.16                     | 0.61              |
| 33:DA:394:G:H21   | 33:DA:395:C:H1'   | 1.65                     | 0.61              |
| 33:DA:481:G:H4'   | 33:DA:481:G:OP1   | 1.99                     | 0.61              |
| 33:DA:602:A:C8    | 33:DA:602:A:C3'   | 2.84                     | 0.61              |
| 33:DA:754:C:O4'   | 47:DO:68:TYR:HD1  | 1.82                     | 0.61              |
| 33:DA:781:A:C2'   | 33:DA:782:A:H5'   | 2.29                     | 0.61              |
| 33:DA:831:A:C6    | 33:DA:832:G:C8    | 2.89                     | 0.61              |
| 33:DA:856:C:C4    | 33:DA:857:C:C5    | 2.88                     | 0.61              |
| 33:DA:872:A:OP1   | 33:DA:872:A:H3'   | 2.01                     | 0.61              |
| 33:DA:899:C:H41   | 33:DA:900:A:N6    | 1.98                     | 0.61              |
| 33:DA:1193:G:C2'  | 33:DA:1194:U:H5'  | 2.30                     | 0.61              |
| 33:DA:1351:U:O2'  | 33:DA:1352:C:H5'  | 2.00                     | 0.61              |
| 36:DD:87:GLU:O    | 36:DD:89:LEU:N    | 2.33                     | 0.61              |
| 39:DG:17:PHE:HB2  | 39:DG:43:TYR:HH   | 1.63                     | 0.61              |
| 39:DG:133:ALA:O   | 39:DG:136:LYS:HB2 | 2.00                     | 0.61              |
| 44:DL:55:ARG:O    | 44:DL:56:LEU:HD23 | 2.01                     | 0.61              |
| 51:DS:18:VAL:HG11 | 51:DS:43:MET:HE1  | 1.82                     | 0.61              |
| 7:AA:28:C:H6      | 7:AA:28:C:H5''    | 1.65                     | 0.61              |
| 8:AB:100:U:C4'    | 27:AU:90:LYS:HB3  | 2.30                     | 0.61              |
| 8:AB:181:A:H1'    | 8:AB:435:C:H5''   | 1.80                     | 0.61              |
| 8:AB:193:U:H2'    | 8:AB:194:G:H8     | 1.64                     | 0.61              |
| 8:AB:207:A:H2'    | 8:AB:208:C:O4'    | 2.00                     | 0.61              |
| 8:AB:493:G:HO2'   | 25:AS:7:HIS:C     | 2.03                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:567:U:C2     | 8:AB:568:U:C5      | 2.89                     | 0.61              |
| 8:AB:740:C:H2'    | 8:AB:740:C:O2      | 2.00                     | 0.61              |
| 8:AB:915:C:H3'    | 8:AB:916:G:H8      | 1.64                     | 0.61              |
| 8:AB:1286:A:C6    | 8:AB:1289:C:N3     | 2.67                     | 0.61              |
| 8:AB:1939:U:H3'   | 8:AB:1940:U:H5'    | 1.81                     | 0.61              |
| 8:AB:1967:C:N4    | 8:AB:1968:G:C5     | 2.68                     | 0.61              |
| 8:AB:2048:G:C2    | 8:AB:2621:G:C2     | 2.88                     | 0.61              |
| 8:AB:2051:A:C6    | 8:AB:2614:A:C5     | 2.88                     | 0.61              |
| 9:AC:63:ILE:HG13  | 9:AC:90:ILE:HD11   | 1.81                     | 0.61              |
| 9:AC:188:ARG:O    | 9:AC:189:ALA:HB2   | 1.99                     | 0.61              |
| 11:AE:149:ILE:CG1 | 11:AE:186:VAL:HG13 | 2.31                     | 0.61              |
| 11:AE:152:GLU:HA  | 11:AE:190:ALA:HA   | 1.83                     | 0.61              |
| 14:AH:62:LEU:O    | 14:AH:66:ASN:HB2   | 1.99                     | 0.61              |
| 15:AI:71:LYS:HE3  | 15:AI:115:ASP:OD1  | 2.01                     | 0.61              |
| 15:AI:92:PRO:HB3  | 15:AI:136:GLY:N    | 2.14                     | 0.61              |
| 16:AJ:81:ILE:O    | 16:AJ:84:ILE:HG13  | 2.01                     | 0.61              |
| 20:AN:69:ARG:CG   | 20:AN:69:ARG:HH11  | 2.13                     | 0.61              |
| 21:AO:27:VAL:O    | 21:AO:28:VAL:HB    | 2.00                     | 0.61              |
| 23:AQ:32:ARG:HG3  | 23:AQ:33:VAL:N     | 2.14                     | 0.61              |
| 31:AY:23:LEU:HB3  | 31:AY:29:ARG:NH2   | 2.15                     | 0.61              |
| 33:BA:428:G:C8    | 33:BA:430:A:C5     | 2.88                     | 0.61              |
| 33:BA:532:A:H2    | 33:BA:1207:G:H5''  | 1.65                     | 0.61              |
| 33:BA:579:A:O2'   | 33:BA:580:C:O5'    | 2.18                     | 0.61              |
| 33:BA:687:A:H2    | 33:BA:704:A:C5     | 2.17                     | 0.61              |
| 33:BA:755:G:H8    | 33:BA:755:G:O5'    | 1.84                     | 0.61              |
| 33:BA:1008:U:H3   | 33:BA:1021:A:H2    | 1.48                     | 0.61              |
| 33:BA:1068:G:N7   | 33:BA:1094:G:H8    | 1.99                     | 0.61              |
| 33:BA:1250:A:C6   | 33:BA:1287:A:N3    | 2.68                     | 0.61              |
| 33:BA:1284:C:H3'  | 33:BA:1285:A:C5'   | 2.30                     | 0.61              |
| 1:C0:48:TYR:CD2   | 1:C0:49:ARG:HB2    | 2.36                     | 0.61              |
| 8:CB:18:U:OP1     | 23:CQ:25:GLY:N     | 2.30                     | 0.61              |
| 8:CB:65:U:OP2     | 26:CT:76:ARG:NH1   | 2.33                     | 0.61              |
| 8:CB:252:G:N3     | 8:CB:253:C:C6      | 2.68                     | 0.61              |
| 8:CB:269:C:C2     | 8:CB:270:A:N7      | 2.69                     | 0.61              |
| 8:CB:379:G:C2     | 8:CB:396:G:C5      | 2.89                     | 0.61              |
| 8:CB:640:C:H6     | 8:CB:640:C:H5''    | 1.66                     | 0.61              |
| 8:CB:682:G:O2'    | 8:CB:683:U:H5'     | 2.01                     | 0.61              |
| 8:CB:693:A:C2     | 8:CB:694:U:C2      | 2.88                     | 0.61              |
| 8:CB:962:G:H2'    | 8:CB:963:U:O4'     | 2.00                     | 0.61              |
| 8:CB:1059:G:C8    | 8:CB:1060:U:H2'    | 2.35                     | 0.61              |
| 8:CB:1069:A:H4'   | 8:CB:1070:A:O5'    | 1.99                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1253:A:H8    | 55:CB:5221:HOH:O   | 1.82                     | 0.61              |
| 8:CB:1309:G:H5''  | 8:CB:1309:G:C8     | 2.35                     | 0.61              |
| 8:CB:1486:U:H3    | 8:CB:1503:A:N6     | 1.97                     | 0.61              |
| 8:CB:1941:C:C4    | 8:CB:1942:C:N3     | 2.69                     | 0.61              |
| 8:CB:2294:G:C2    | 8:CB:2295:C:C6     | 2.88                     | 0.61              |
| 8:CB:2722:G:H2'   | 8:CB:2723:C:H6     | 1.65                     | 0.61              |
| 8:CB:2852:G:H2'   | 8:CB:2853:C:C6     | 2.35                     | 0.61              |
| 9:CC:62:ARG:HH11  | 9:CC:62:ARG:HG2    | 1.65                     | 0.61              |
| 11:CE:136:GLN:HB3 | 11:CE:139:LYS:HD2  | 1.83                     | 0.61              |
| 12:CF:56:LEU:O    | 12:CF:56:LEU:HD23  | 2.01                     | 0.61              |
| 26:CT:34:VAL:HG11 | 26:CT:43:ILE:CD1   | 2.31                     | 0.61              |
| 27:CU:23:LYS:O    | 27:CU:25:LYS:HD2   | 2.01                     | 0.61              |
| 30:CX:9:LYS:HB3   | 30:CX:9:LYS:NZ     | 2.16                     | 0.61              |
| 33:DA:31:G:H4'    | 33:DA:32:A:OP2     | 2.00                     | 0.61              |
| 33:DA:355:C:H2'   | 33:DA:356:A:O4'    | 2.00                     | 0.61              |
| 33:DA:577:G:C6    | 33:DA:812:G:N2     | 2.69                     | 0.61              |
| 33:DA:625:U:O2'   | 33:DA:626:G:H5'    | 2.01                     | 0.61              |
| 33:DA:643:C:C2    | 33:DA:644:U:C5     | 2.88                     | 0.61              |
| 33:DA:706:A:N7    | 33:DA:707:U:C5     | 2.69                     | 0.61              |
| 33:DA:785:G:N2    | 33:DA:798:U:C6     | 2.68                     | 0.61              |
| 33:DA:795:C:C5'   | 43:DK:127:ARG:HH21 | 2.12                     | 0.61              |
| 33:DA:891:U:H5''  | 33:DA:891:U:C6     | 2.31                     | 0.61              |
| 33:DA:894:G:C4    | 33:DA:895:G:N7     | 2.68                     | 0.61              |
| 33:DA:899:C:C5    | 33:DA:900:A:N7     | 2.68                     | 0.61              |
| 33:DA:914:A:C2    | 33:DA:915:A:N9     | 2.68                     | 0.61              |
| 33:DA:1507:A:H8   | 33:DA:1507:A:C5'   | 2.11                     | 0.61              |
| 35:DC:140:ALA:O   | 35:DC:143:LEU:HD22 | 2.00                     | 0.61              |
| 43:DK:28:ASN:HD22 | 43:DK:29:THR:H     | 1.48                     | 0.61              |
| 48:DP:32:PHE:O    | 48:DP:32:PHE:HD1   | 1.83                     | 0.61              |
| 8:AB:100:U:H4'    | 27:AU:90:LYS:CB    | 2.30                     | 0.61              |
| 8:AB:226:A:O2'    | 8:AB:227:A:H5'     | 2.01                     | 0.61              |
| 8:AB:1419:A:C8    | 8:AB:1421:G:C6     | 2.88                     | 0.61              |
| 8:AB:1767:G:O2'   | 8:AB:1768:C:H5'    | 2.00                     | 0.61              |
| 8:AB:2303:G:H1'   | 12:AF:122:ASP:HA   | 1.80                     | 0.61              |
| 8:AB:2748:A:N6    | 8:AB:2757:A:N7     | 2.48                     | 0.61              |
| 8:AB:2851:A:O2'   | 8:AB:2852:G:H5'    | 2.01                     | 0.61              |
| 9:AC:203:VAL:O    | 9:AC:204:LEU:C     | 2.39                     | 0.61              |
| 10:AD:154:LYS:HG2 | 10:AD:156:PHE:H    | 1.65                     | 0.61              |
| 12:AF:37:MET:H    | 12:AF:86:CYS:HB2   | 1.66                     | 0.61              |
| 22:AP:103:THR:O   | 22:AP:105:LYS:HG2  | 2.00                     | 0.61              |
| 33:BA:44:A:C4     | 33:BA:399:G:N2     | 2.68                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:658:C:H5'   | 47:BO:30:LEU:HD21  | 1.82                     | 0.61              |
| 33:BA:819:A:N7    | 33:BA:1529:G:N1    | 2.48                     | 0.61              |
| 33:BA:994:A:C5    | 33:BA:1216:A:H4'   | 2.36                     | 0.61              |
| 33:BA:1047:G:H1   | 33:BA:1210:C:H42   | 1.48                     | 0.61              |
| 33:BA:1452:C:H4'  | 33:BA:1453:G:O5'   | 2.01                     | 0.61              |
| 35:BC:17:TRP:C    | 35:BC:19:SER:H     | 2.03                     | 0.61              |
| 35:BC:25:THR:HG23 | 46:BN:75:LYS:HD3   | 1.81                     | 0.61              |
| 36:BD:105:GLY:HA3 | 36:BD:158:LEU:HD23 | 1.82                     | 0.61              |
| 44:BL:43:LYS:CB   | 44:BL:44:PRO:HD3   | 2.29                     | 0.61              |
| 48:BP:20:VAL:HG23 | 48:BP:35:ARG:CA    | 2.29                     | 0.61              |
| 8:CB:100:U:H5'    | 8:CB:100:U:H6      | 1.65                     | 0.61              |
| 8:CB:792:A:N7     | 8:CB:2440:C:N1     | 2.48                     | 0.61              |
| 8:CB:994:C:OP1    | 23:CQ:49:ARG:NE    | 2.34                     | 0.61              |
| 8:CB:1024:G:P     | 8:CB:1026:G:OP1    | 2.58                     | 0.61              |
| 8:CB:1066:U:C6    | 8:CB:1066:U:C3'    | 2.83                     | 0.61              |
| 8:CB:1381:G:C2'   | 8:CB:1382:G:H5'    | 2.30                     | 0.61              |
| 8:CB:1779:U:H5    | 8:CB:1784:A:N7     | 1.98                     | 0.61              |
| 8:CB:1809:A:C6    | 8:CB:1810:A:C6     | 2.88                     | 0.61              |
| 8:CB:1970:A:H4'   | 8:CB:1970:A:OP1    | 2.00                     | 0.61              |
| 8:CB:1989:G:H2'   | 8:CB:1990:C:H5'    | 1.82                     | 0.61              |
| 8:CB:2046:G:C2    | 8:CB:2047:C:C2     | 2.87                     | 0.61              |
| 8:CB:2358:A:H8    | 8:CB:2358:A:C5'    | 2.13                     | 0.61              |
| 8:CB:2415:G:O2'   | 18:CL:66:PHE:HB2   | 2.01                     | 0.61              |
| 9:CC:15:VAL:HG12  | 9:CC:16:VAL:HG13   | 1.83                     | 0.61              |
| 9:CC:204:LEU:HB3  | 9:CC:210:ALA:HB1   | 1.82                     | 0.61              |
| 11:CE:49:ARG:H    | 11:CE:49:ARG:CD    | 2.13                     | 0.61              |
| 19:CM:2:LEU:O     | 19:CM:3:GLN:HB2    | 2.00                     | 0.61              |
| 19:CM:26:VAL:O    | 19:CM:27:SER:HB2   | 2.01                     | 0.61              |
| 19:CM:40:ARG:HG3  | 19:CM:92:TRP:CD1   | 2.36                     | 0.61              |
| 19:CM:105:MET:HA  | 19:CM:105:MET:HE3  | 1.81                     | 0.61              |
| 21:CO:27:VAL:CG1  | 21:CO:38:GLN:HB3   | 2.29                     | 0.61              |
| 21:CO:94:ARG:NE   | 21:CO:94:ARG:HA    | 2.15                     | 0.61              |
| 22:CP:27:VAL:HG13 | 22:CP:47:ILE:CD1   | 2.31                     | 0.61              |
| 26:CT:70:HIS:CD2  | 26:CT:74:ILE:HG13  | 2.36                     | 0.61              |
| 29:CW:67:LYS:CD   | 29:CW:71:LYS:HB3   | 2.28                     | 0.61              |
| 30:CX:26:PHE:N    | 30:CX:26:PHE:CD1   | 2.68                     | 0.61              |
| 33:DA:598:U:H2'   | 33:DA:599:C:C6     | 2.35                     | 0.61              |
| 33:DA:899:C:H2'   | 33:DA:900:A:C8     | 2.35                     | 0.61              |
| 33:DA:918:A:C2    | 33:DA:919:A:C4     | 2.88                     | 0.61              |
| 33:DA:1131:G:O5'  | 33:DA:1131:G:C8    | 2.51                     | 0.61              |
| 33:DA:1434:A:C8   | 33:DA:1435:G:C8    | 2.88                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:DE:65:LYS:O     | 37:DE:68:ARG:O    | 2.18                     | 0.61              |
| 37:DE:89:THR:HG21  | 37:DE:134:ASN:OD1 | 1.99                     | 0.61              |
| 38:DF:51:ILE:HD11  | 38:DF:86:ARG:HG3  | 1.81                     | 0.61              |
| 41:DI:45:MET:HA    | 41:DI:48:ARG:HB3  | 1.82                     | 0.61              |
| 42:DJ:83:THR:C     | 42:DJ:85:ASP:H    | 2.02                     | 0.61              |
| 45:DM:55:LEU:O     | 45:DM:59:VAL:HG12 | 2.00                     | 0.61              |
| 3:A2:24:THR:O      | 3:A2:28:ARG:HB2   | 2.00                     | 0.61              |
| 4:A3:4:LYS:HG3     | 4:A3:4:LYS:O      | 2.00                     | 0.61              |
| 8:AB:264:C:O2'     | 8:AB:265:A:H5''   | 2.00                     | 0.61              |
| 8:AB:482:A:N7      | 8:AB:506:G:C2     | 2.69                     | 0.61              |
| 8:AB:525:U:O2'     | 8:AB:526:A:H5''   | 2.00                     | 0.61              |
| 8:AB:559:G:H1'     | 23:AQ:55:GLN:NE2  | 2.15                     | 0.61              |
| 8:AB:668:A:C2      | 8:AB:670:A:C2     | 2.88                     | 0.61              |
| 8:AB:685:A:H2      | 8:AB:787:C:H1'    | 1.64                     | 0.61              |
| 8:AB:749:A:C5      | 8:AB:1618:A:C2    | 2.89                     | 0.61              |
| 8:AB:770:G:H1'     | 8:AB:1379:U:O4    | 2.01                     | 0.61              |
| 8:AB:870:U:H5''    | 19:AM:9:PHE:CB    | 2.31                     | 0.61              |
| 8:AB:942:G:H4'     | 8:AB:1189:A:O2'   | 2.01                     | 0.61              |
| 8:AB:987:C:O2'     | 8:AB:1000:A:N3    | 2.34                     | 0.61              |
| 8:AB:1030:C:O2'    | 8:AB:2466:C:H4'   | 2.01                     | 0.61              |
| 8:AB:1191:G:C2'    | 8:AB:1192:G:H5'   | 2.30                     | 0.61              |
| 8:AB:1232:G:C4     | 8:AB:1233:C:C6    | 2.89                     | 0.61              |
| 8:AB:1567:G:C8     | 8:AB:1567:G:H5''  | 2.36                     | 0.61              |
| 8:AB:1611:C:N3     | 8:AB:1612:C:C5    | 2.68                     | 0.61              |
| 8:AB:1767:G:N2     | 8:AB:1768:C:C2    | 2.69                     | 0.61              |
| 8:AB:1877:A:H2'    | 8:AB:1878:G:O4'   | 2.01                     | 0.61              |
| 9:AC:15:VAL:HG12   | 9:AC:16:VAL:HG13  | 1.83                     | 0.61              |
| 9:AC:241:LYS:O     | 9:AC:243:PRO:HD3  | 2.00                     | 0.61              |
| 18:AL:111:ILE:HD11 | 18:AL:113:ALA:HB2 | 1.83                     | 0.61              |
| 20:AN:58:ASP:OD1   | 20:AN:63:ARG:NH1  | 2.33                     | 0.61              |
| 22:AP:25:VAL:HG13  | 22:AP:87:ARG:HA   | 1.82                     | 0.61              |
| 23:AQ:66:ALA:O     | 23:AQ:70:GLN:HB3  | 2.01                     | 0.61              |
| 25:AS:35:ILE:O     | 25:AS:35:ILE:HG12 | 1.99                     | 0.61              |
| 28:AV:65:VAL:C     | 28:AV:67:GLY:H    | 2.03                     | 0.61              |
| 29:AW:66:VAL:HG13  | 29:AW:67:LYS:H    | 1.65                     | 0.61              |
| 33:BA:293:G:C5     | 33:BA:294:U:C5    | 2.88                     | 0.61              |
| 33:BA:401:C:H3'    | 33:BA:401:C:C6    | 2.36                     | 0.61              |
| 33:BA:704:A:C8     | 33:BA:704:A:C5'   | 2.83                     | 0.61              |
| 33:BA:728:A:N6     | 33:BA:729:A:N6    | 2.49                     | 0.61              |
| 33:BA:742:G:C8     | 33:BA:742:G:H3'   | 2.36                     | 0.61              |
| 34:BB:9:LEU:HD22   | 34:BB:11:ALA:H    | 1.64                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:BH:26:MET:O     | 40:BH:57:GLU:HG3   | 2.01                     | 0.61              |
| 45:BM:12:LYS:CB    | 45:BM:17:ALA:HB2   | 2.29                     | 0.61              |
| 1:C0:16:ARG:O      | 1:C0:17:SER:C      | 2.38                     | 0.61              |
| 4:C3:34:LYS:HE2    | 8:CB:2420:C:OP1    | 2.01                     | 0.61              |
| 5:C4:1:MET:SD      | 8:CB:2527:C:H1'    | 2.39                     | 0.61              |
| 7:CA:107:G:O5'     | 7:CA:107:G:H8      | 1.81                     | 0.61              |
| 8:CB:79:C:N4       | 8:CB:107:G:H1      | 1.98                     | 0.61              |
| 8:CB:150:U:O5'     | 8:CB:150:U:H6      | 1.83                     | 0.61              |
| 8:CB:225:C:C2      | 8:CB:226:A:C8      | 2.88                     | 0.61              |
| 8:CB:605:G:C2      | 8:CB:606:U:O2      | 2.54                     | 0.61              |
| 8:CB:741:U:C2      | 8:CB:757:G:N2      | 2.69                     | 0.61              |
| 8:CB:1347:A:H2'    | 8:CB:1348:C:C5'    | 2.30                     | 0.61              |
| 8:CB:1443:U:H6     | 8:CB:1443:U:H3'    | 1.64                     | 0.61              |
| 8:CB:1615:C:C2     | 8:CB:1617:C:H6     | 2.17                     | 0.61              |
| 8:CB:2213:U:H3'    | 8:CB:2213:U:C2     | 2.35                     | 0.61              |
| 8:CB:2716:C:O2'    | 8:CB:2717:C:H5'    | 1.99                     | 0.61              |
| 8:CB:2860:A:H8     | 8:CB:2860:A:C5'    | 2.14                     | 0.61              |
| 10:CD:160:LYS:HB2  | 10:CD:160:LYS:HZ2  | 1.63                     | 0.61              |
| 11:CE:109:LEU:CD2  | 11:CE:113:VAL:O    | 2.48                     | 0.61              |
| 11:CE:138:LEU:HB3  | 11:CE:143:LEU:CD1  | 2.30                     | 0.61              |
| 11:CE:151:GLY:O    | 11:CE:158:PHE:HE1  | 1.84                     | 0.61              |
| 14:CH:82:SER:HB2   | 14:CH:90:LEU:HD13  | 1.82                     | 0.61              |
| 19:CM:55:ARG:C     | 19:CM:57:VAL:H     | 2.04                     | 0.61              |
| 20:CN:32:GLU:CG    | 20:CN:33:ILE:HG13  | 2.26                     | 0.61              |
| 33:DA:451:A:O4'    | 33:DA:452:A:C8     | 2.53                     | 0.61              |
| 33:DA:1251:A:H8    | 33:DA:1251:A:O5'   | 1.84                     | 0.61              |
| 35:DC:110:LEU:HD13 | 35:DC:143:LEU:HD23 | 1.81                     | 0.61              |
| 41:DI:44:ARG:O     | 41:DI:46:VAL:N     | 2.33                     | 0.61              |
| 41:DI:114:LYS:NZ   | 41:DI:121:ARG:HG2  | 2.15                     | 0.61              |
| 7:AA:3:C:H2'       | 7:AA:4:C:C6        | 2.36                     | 0.61              |
| 7:AA:54:G:H2'      | 7:AA:55:U:C6       | 2.35                     | 0.61              |
| 8:AB:101:A:C8      | 8:AB:101:A:C3'     | 2.82                     | 0.61              |
| 8:AB:243:U:O2'     | 8:AB:244:A:H5'     | 2.01                     | 0.61              |
| 8:AB:799:G:C6      | 8:AB:800:A:N6      | 2.69                     | 0.61              |
| 8:AB:865:C:H5      | 8:AB:908:C:H41     | 1.45                     | 0.61              |
| 8:AB:1820:U:C6     | 9:AC:157:ALA:O     | 2.54                     | 0.61              |
| 8:AB:2082:A:C2     | 8:AB:2239:G:N3     | 2.68                     | 0.61              |
| 8:AB:2377:A:N3     | 21:AO:92:PHE:CZ    | 2.68                     | 0.61              |
| 8:AB:2469:A:H4'    | 19:AM:55:ARG:HG3   | 1.82                     | 0.61              |
| 8:AB:2838:G:N2     | 20:AN:93:GLY:H     | 1.98                     | 0.61              |
| 10:AD:13:ARG:HB2   | 10:AD:21:SER:OG    | 2.01                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 13:AG:104:LEU:HB2  | 13:AG:112:VAL:CG2 | 2.31                     | 0.61              |
| 13:AG:169:ARG:NE   | 13:AG:169:ARG:HA  | 2.15                     | 0.61              |
| 18:AL:29:LYS:CG    | 18:AL:30:THR:H    | 2.11                     | 0.61              |
| 18:AL:56:PRO:CB    | 18:AL:60:ARG:NH2  | 2.64                     | 0.61              |
| 22:AP:29:VAL:CG2   | 22:AP:47:ILE:HD11 | 2.31                     | 0.61              |
| 30:AX:22:LEU:HG    | 30:AX:47:ARG:NH2  | 2.10                     | 0.61              |
| 33:BA:627:G:H2'    | 33:BA:628:G:C8    | 2.36                     | 0.61              |
| 33:BA:751:U:C4     | 33:BA:752:G:C2    | 2.88                     | 0.61              |
| 33:BA:778:G:C5     | 33:BA:779:C:C5    | 2.89                     | 0.61              |
| 33:BA:1095:U:P     | 33:BA:1108:G:H1   | 2.24                     | 0.61              |
| 33:BA:1268:G:N1    | 33:BA:1269:A:C6   | 2.69                     | 0.61              |
| 33:BA:1318:A:H4'   | 51:BS:9:PHE:CD1   | 2.36                     | 0.61              |
| 35:BC:151:GLU:HB3  | 35:BC:198:LYS:HB2 | 1.83                     | 0.61              |
| 38:BF:91:ARG:HD2   | 38:BF:92:THR:HG22 | 1.82                     | 0.61              |
| 1:C0:9:ARG:HA      | 1:C0:12:ARG:HB2   | 1.82                     | 0.61              |
| 1:C0:41:HIS:CD2    | 1:C0:42:ILE:O     | 2.54                     | 0.61              |
| 8:CB:28:A:C2'      | 8:CB:29:U:H5'     | 2.30                     | 0.61              |
| 8:CB:537:G:H4'     | 16:CJ:7:LYS:NZ    | 2.16                     | 0.61              |
| 8:CB:566:U:H2'     | 8:CB:567:U:C6     | 2.34                     | 0.61              |
| 8:CB:756:A:H8      | 8:CB:756:A:C5'    | 2.06                     | 0.61              |
| 8:CB:1165:A:C4     | 8:CB:1166:G:N7    | 2.69                     | 0.61              |
| 8:CB:1239:G:C5     | 8:CB:1240:U:C5    | 2.88                     | 0.61              |
| 8:CB:1268:A:N6     | 8:CB:1269:A:C2    | 2.68                     | 0.61              |
| 8:CB:1362:C:C2     | 8:CB:1363:C:C6    | 2.89                     | 0.61              |
| 8:CB:1364:G:H5''   | 8:CB:1365:A:P     | 2.41                     | 0.61              |
| 8:CB:1568:G:H21    | 9:CC:58:LYS:HE3   | 1.65                     | 0.61              |
| 8:CB:1778:U:O4     | 8:CB:1784:A:H1'   | 2.00                     | 0.61              |
| 8:CB:1889:A:H2'    | 8:CB:1890:A:O4'   | 1.99                     | 0.61              |
| 8:CB:2014:A:H8     | 8:CB:2014:A:O5'   | 1.84                     | 0.61              |
| 8:CB:2357:G:C5     | 8:CB:2359:C:OP2   | 2.54                     | 0.61              |
| 8:CB:2358:A:C2'    | 8:CB:2359:C:H5'   | 2.30                     | 0.61              |
| 8:CB:2884:U:H3'    | 8:CB:2884:U:C6    | 2.36                     | 0.61              |
| 8:CB:2886:A:N3     | 8:CB:2887:A:C8    | 2.68                     | 0.61              |
| 9:CC:156:SER:O     | 9:CC:158:GLY:N    | 2.33                     | 0.61              |
| 11:CE:48:THR:HA    | 11:CE:83:VAL:HG22 | 1.81                     | 0.61              |
| 11:CE:193:VAL:HG23 | 11:CE:199:MET:HB3 | 1.83                     | 0.61              |
| 13:CG:169:ARG:CD   | 13:CG:170:THR:H   | 2.14                     | 0.61              |
| 14:CH:113:SER:H    | 14:CH:132:PHE:HE2 | 1.44                     | 0.61              |
| 15:CI:49:GLU:HB2   | 15:CI:52:LEU:HD12 | 1.83                     | 0.61              |
| 16:CJ:81:ILE:O     | 16:CJ:84:ILE:HG13 | 2.01                     | 0.61              |
| 18:CL:43:GLY:C     | 18:CL:45:GLY:H    | 2.02                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:73:C:H2'    | 33:DA:74:A:O4'     | 2.01                     | 0.61              |
| 33:DA:369:G:N2    | 33:DA:370:C:C2     | 2.68                     | 0.61              |
| 33:DA:392:C:O2'   | 33:DA:483:C:H1'    | 2.01                     | 0.61              |
| 33:DA:415:A:H62   | 33:DA:416:G:N2     | 1.97                     | 0.61              |
| 33:DA:713:G:H8    | 33:DA:713:G:C5'    | 2.13                     | 0.61              |
| 33:DA:772:U:O2'   | 33:DA:773:G:H5'    | 2.00                     | 0.61              |
| 33:DA:856:C:C2    | 33:DA:857:C:H5     | 2.19                     | 0.61              |
| 33:DA:1084:G:C8   | 33:DA:1085:U:C6    | 2.88                     | 0.61              |
| 33:DA:1349:A:H2'  | 33:DA:1350:A:O4'   | 2.00                     | 0.61              |
| 35:DC:177:LEU:H   | 35:DC:177:LEU:HD22 | 1.65                     | 0.61              |
| 37:DE:61:LYS:HA   | 37:DE:64:GLU:CB    | 2.31                     | 0.61              |
| 37:DE:125:LYS:HD2 | 37:DE:127:TYR:CG   | 2.35                     | 0.61              |
| 43:DK:28:ASN:HD21 | 43:DK:46:ALA:HB3   | 1.66                     | 0.61              |
| 50:DR:61:ALA:CB   | 50:DR:67:LEU:HD12  | 2.31                     | 0.61              |
| 8:AB:142:A:N3     | 26:AT:2:ILE:HD12   | 2.15                     | 0.61              |
| 8:AB:464:U:C3'    | 8:AB:465:G:H5''    | 2.29                     | 0.61              |
| 8:AB:585:G:C5     | 8:AB:1251:C:C4     | 2.88                     | 0.61              |
| 8:AB:650:C:N3     | 8:AB:651:G:C8      | 2.69                     | 0.61              |
| 8:AB:1136:G:H8    | 8:AB:1136:G:H5'    | 1.63                     | 0.61              |
| 8:AB:1165:A:C2    | 8:AB:1185:G:C6     | 2.88                     | 0.61              |
| 8:AB:1298:C:H42   | 8:AB:1642:G:H1     | 0.79                     | 0.61              |
| 8:AB:1335:C:H2'   | 8:AB:1336:A:C8     | 2.28                     | 0.61              |
| 8:AB:1418:G:O5'   | 8:AB:1418:G:H8     | 1.83                     | 0.61              |
| 8:AB:1662:U:C2'   | 8:AB:1663:G:H5''   | 2.29                     | 0.61              |
| 8:AB:2679:A:C2    | 8:AB:2680:U:C4     | 2.89                     | 0.61              |
| 9:AC:11:GLY:O     | 9:AC:12:ARG:HB2    | 1.99                     | 0.61              |
| 10:AD:101:PHE:O   | 10:AD:105:LYS:HD2  | 2.01                     | 0.61              |
| 11:AE:171:ASP:O   | 11:AE:172:ALA:HB3  | 2.00                     | 0.61              |
| 14:AH:31:VAL:HB   | 14:AH:32:PRO:HD2   | 1.82                     | 0.61              |
| 19:AM:3:GLN:HG3   | 19:AM:4:PRO:N      | 2.16                     | 0.61              |
| 27:AU:94:PHE:HD2  | 27:AU:95:PHE:H     | 1.47                     | 0.61              |
| 30:AX:6:LEU:HB3   | 30:AX:9:LYS:HB2    | 1.83                     | 0.61              |
| 33:BA:312:C:H2'   | 33:BA:313:A:H8     | 1.63                     | 0.61              |
| 33:BA:357:G:N3    | 33:BA:358:U:C5     | 2.68                     | 0.61              |
| 33:BA:509:A:H8    | 33:BA:509:A:H3'    | 1.66                     | 0.61              |
| 33:BA:511:C:N3    | 33:BA:512:U:C4     | 2.69                     | 0.61              |
| 33:BA:520:A:H2'   | 33:BA:521:G:O4'    | 2.01                     | 0.61              |
| 33:BA:582:C:O2    | 33:BA:760:G:N1     | 2.33                     | 0.61              |
| 33:BA:775:G:H2'   | 33:BA:776:G:O4'    | 2.00                     | 0.61              |
| 33:BA:891:U:C5    | 33:BA:906:A:N1     | 2.68                     | 0.61              |
| 33:BA:933:G:H5''  | 33:BA:934:C:OP2    | 2.01                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:1004:A:C2   | 33:BA:1026:G:C8    | 2.89                     | 0.61              |
| 33:BA:1225:A:H3'  | 33:BA:1226:C:H6    | 1.64                     | 0.61              |
| 33:BA:1473:G:C4   | 33:BA:1474:U:C6    | 2.88                     | 0.61              |
| 36:BD:53:GLN:O    | 36:BD:202:LEU:HD22 | 2.00                     | 0.61              |
| 39:BG:29:LEU:HD22 | 39:BG:42:VAL:HG21  | 1.82                     | 0.61              |
| 44:BL:2:THR:HB    | 44:BL:5:GLN:HB2    | 1.83                     | 0.61              |
| 2:C1:26:LYS:HD2   | 2:C1:29:LYS:CG     | 2.27                     | 0.61              |
| 4:C3:16:THR:HG23  | 4:C3:20:GLY:O      | 1.99                     | 0.61              |
| 8:CB:83:A:H5''    | 55:CU:5001:HOH:O   | 2.00                     | 0.61              |
| 8:CB:288:U:H2'    | 8:CB:289:G:C8      | 2.36                     | 0.61              |
| 8:CB:435:C:H5'    | 8:CB:435:C:H6      | 1.65                     | 0.61              |
| 8:CB:962:G:N2     | 19:CM:81:ARG:HD3   | 2.14                     | 0.61              |
| 8:CB:1222:U:O2    | 8:CB:1228:G:C2     | 2.54                     | 0.61              |
| 8:CB:1631:G:H3'   | 8:CB:1631:G:H8     | 1.63                     | 0.61              |
| 8:CB:1651:G:N2    | 8:CB:2007:U:C2     | 2.69                     | 0.61              |
| 8:CB:2376:A:C8    | 21:CO:99:TYR:CE2   | 2.88                     | 0.61              |
| 8:CB:2604:U:C2    | 8:CB:2605:U:C5     | 2.89                     | 0.61              |
| 8:CB:2736:A:O2'   | 8:CB:2737:G:H5'    | 2.01                     | 0.61              |
| 8:CB:2753:A:C2    | 8:CB:2754:U:C4     | 2.89                     | 0.61              |
| 8:CB:2812:G:N1    | 8:CB:2813:A:C2     | 2.69                     | 0.61              |
| 19:CM:110:GLU:C   | 19:CM:112:LEU:H    | 2.03                     | 0.61              |
| 21:CO:27:VAL:HG21 | 21:CO:37:ALA:C     | 2.21                     | 0.61              |
| 21:CO:41:ALA:CB   | 21:CO:42:PRO:CD    | 2.78                     | 0.61              |
| 25:CS:76:VAL:HG12 | 25:CS:103:ILE:HD13 | 1.83                     | 0.61              |
| 33:DA:1513:A:H2'  | 33:DA:1514:G:O4'   | 2.00                     | 0.61              |
| 34:DB:133:ALA:O   | 34:DB:136:ARG:HB2  | 2.01                     | 0.61              |
| 34:DB:210:THR:HA  | 34:DB:213:LEU:HB2  | 1.82                     | 0.61              |
| 47:DO:52:ARG:HA   | 47:DO:55:LEU:HB3   | 1.82                     | 0.61              |
| 50:DR:39:VAL:HG12 | 50:DR:40:PRO:CD    | 2.31                     | 0.61              |
| 1:A0:29:VAL:HG22  | 1:A0:41:HIS:CE1    | 2.36                     | 0.61              |
| 2:A1:29:LYS:HB3   | 2:A1:30:PRO:HD2    | 1.83                     | 0.61              |
| 5:A4:23:ILE:HG23  | 5:A4:37:GLN:OE1    | 2.00                     | 0.61              |
| 7:AA:54:G:H2'     | 7:AA:55:U:O4'      | 2.01                     | 0.61              |
| 8:AB:124:G:H5'    | 8:AB:124:G:C8      | 2.31                     | 0.61              |
| 8:AB:218:A:H2'    | 8:AB:219:A:C8      | 2.36                     | 0.61              |
| 8:AB:535:G:H2'    | 8:AB:536:G:O4'     | 2.01                     | 0.61              |
| 8:AB:538:A:C5     | 8:AB:539:G:C5      | 2.88                     | 0.61              |
| 8:AB:644:A:H2     | 8:AB:646:U:O4      | 1.83                     | 0.61              |
| 8:AB:794:A:H2'    | 8:AB:795:C:H5'     | 1.83                     | 0.61              |
| 8:AB:811:U:H5     | 18:AL:29:LYS:NZ    | 1.99                     | 0.61              |
| 8:AB:1824:G:C1'   | 9:AC:247:TRP:HZ3   | 2.14                     | 0.61              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:1987:A:OP2    | 55:AB:4565:HOH:O  | 2.16                     | 0.61              |
| 8:AB:2024:G:H8     | 8:AB:2024:G:O5'   | 1.84                     | 0.61              |
| 8:AB:2058:A:C5'    | 8:AB:2058:A:C8    | 2.83                     | 0.61              |
| 8:AB:2204:G:O2'    | 8:AB:2205:A:H5'   | 2.01                     | 0.61              |
| 8:AB:2241:A:N1     | 8:AB:2242:G:C6    | 2.69                     | 0.61              |
| 8:AB:2338:C:H2'    | 8:AB:2339:C:C6    | 2.35                     | 0.61              |
| 8:AB:2498:C:C2'    | 8:AB:2499:C:H5'   | 2.31                     | 0.61              |
| 12:AF:12:VAL:HG13  | 12:AF:27:VAL:HG21 | 1.82                     | 0.61              |
| 14:AH:28:ASN:O     | 14:AH:29:PHE:CB   | 2.48                     | 0.61              |
| 24:AR:90:ARG:HH22  | 24:AR:92:TRP:HD1  | 1.45                     | 0.61              |
| 33:BA:266:G:N2     | 33:BA:270:A:H61   | 1.99                     | 0.61              |
| 33:BA:480:U:H2'    | 33:BA:480:U:O2    | 1.98                     | 0.61              |
| 33:BA:594:U:H3'    | 33:BA:595:A:C8    | 2.36                     | 0.61              |
| 33:BA:1152:A:N1    | 33:BA:1153:G:C6   | 2.68                     | 0.61              |
| 33:BA:1242:G:C5    | 33:BA:1243:C:C5   | 2.88                     | 0.61              |
| 36:BD:170:LEU:HD12 | 36:BD:170:LEU:O   | 2.00                     | 0.61              |
| 37:BE:110:MET:H    | 37:BE:110:MET:HE3 | 1.66                     | 0.61              |
| 40:BH:25:THR:HB    | 40:BH:57:GLU:OE2  | 2.00                     | 0.61              |
| 43:BK:106:ILE:HD11 | 43:BK:108:ASN:O   | 2.01                     | 0.61              |
| 45:BM:79:LEU:HD23  | 45:BM:86:ARG:NH1  | 2.15                     | 0.61              |
| 47:BO:63:ARG:HH11  | 47:BO:63:ARG:CG   | 2.10                     | 0.61              |
| 53:BU:39:LYS:N     | 53:BU:40:PRO:HD2  | 2.16                     | 0.61              |
| 7:CA:27:C:C5       | 7:CA:28:C:N4      | 2.66                     | 0.61              |
| 7:CA:87:U:C2'      | 7:CA:88:C:O5'     | 2.49                     | 0.61              |
| 8:CB:62:U:H2'      | 8:CB:63:A:N9      | 2.16                     | 0.61              |
| 8:CB:545:U:H3'     | 8:CB:545:U:H6     | 1.64                     | 0.61              |
| 8:CB:566:U:C6      | 8:CB:567:U:H5     | 2.19                     | 0.61              |
| 8:CB:568:U:O2'     | 8:CB:569:U:H3'    | 2.00                     | 0.61              |
| 8:CB:599:A:H1'     | 8:CB:659:G:N2     | 2.15                     | 0.61              |
| 8:CB:685:A:H2      | 8:CB:787:C:H1'    | 1.66                     | 0.61              |
| 8:CB:873:C:H2'     | 8:CB:874:G:C8     | 2.30                     | 0.61              |
| 8:CB:1109:C:O2'    | 8:CB:1110:G:H5'   | 2.01                     | 0.61              |
| 8:CB:1218:G:C6     | 8:CB:1219:U:C4    | 2.88                     | 0.61              |
| 8:CB:1675:C:O2     | 10:CD:133:THR:HA  | 2.01                     | 0.61              |
| 8:CB:1783:A:C2     | 8:CB:2587:A:C5    | 2.89                     | 0.61              |
| 8:CB:2048:G:N1     | 8:CB:2621:G:C2    | 2.69                     | 0.61              |
| 9:CC:208:GLY:O     | 9:CC:210:ALA:N    | 2.34                     | 0.61              |
| 10:CD:49:GLN:NE2   | 10:CD:51:THR:OG1  | 2.31                     | 0.61              |
| 10:CD:156:PHE:HB3  | 16:CJ:81:ILE:HG21 | 1.83                     | 0.61              |
| 15:CI:99:LYS:HD3   | 15:CI:99:LYS:N    | 2.15                     | 0.61              |
| 16:CJ:112:GLY:O    | 16:CJ:116:ARG:HB2 | 2.00                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 18:CL:18:ARG:HH12 | 18:CL:21:ARG:HH21 | 1.49                     | 0.61              |
| 22:CP:78:PRO:O    | 22:CP:79:VAL:HG12 | 2.00                     | 0.61              |
| 25:CS:86:MET:O    | 25:CS:94:ASP:OD2  | 2.19                     | 0.61              |
| 26:CT:9:LYS:NZ    | 30:CX:47:ARG:NH1  | 2.48                     | 0.61              |
| 28:CV:9:ARG:HG3   | 28:CV:39:ALA:HB1  | 1.83                     | 0.61              |
| 28:CV:65:VAL:C    | 28:CV:67:GLY:H    | 2.04                     | 0.61              |
| 29:CW:38:ARG:HD3  | 29:CW:68:PHE:CE2  | 2.36                     | 0.61              |
| 29:CW:57:THR:O    | 29:CW:59:PHE:N    | 2.34                     | 0.61              |
| 31:CY:40:THR:HG23 | 31:CY:43:ILE:HG22 | 1.83                     | 0.61              |
| 33:DA:62:U:O2'    | 33:DA:379:C:H1'   | 2.01                     | 0.61              |
| 33:DA:239:U:H4'   | 33:DA:240:G:OP2   | 2.01                     | 0.61              |
| 33:DA:647:C:H2'   | 33:DA:648:A:C8    | 2.35                     | 0.61              |
| 33:DA:695:A:C2    | 33:DA:787:A:H4'   | 2.31                     | 0.61              |
| 33:DA:763:G:C2    | 33:DA:764:C:C5    | 2.89                     | 0.61              |
| 33:DA:989:U:H1'   | 33:DA:1016:A:C2   | 2.36                     | 0.61              |
| 33:DA:1197:A:C2   | 33:DA:1198:G:C8   | 2.89                     | 0.61              |
| 33:DA:1231:G:N2   | 33:DA:1232:U:H1'  | 2.15                     | 0.61              |
| 41:DI:9:GLY:HA3   | 41:DI:81:GLY:HA2  | 1.82                     | 0.61              |
| 1:A0:9:ARG:HA     | 1:A0:12:ARG:HB2   | 1.83                     | 0.61              |
| 5:A4:24:ARG:HH22  | 5:A4:36:ARG:HG3   | 1.64                     | 0.61              |
| 7:AA:7:G:H2'      | 7:AA:8:C:H6       | 1.66                     | 0.61              |
| 8:AB:136:G:C8     | 8:AB:137:U:C5     | 2.88                     | 0.61              |
| 8:AB:173:A:H2'    | 8:AB:174:U:H6     | 1.62                     | 0.61              |
| 8:AB:197:A:N6     | 8:AB:2430:A:N3    | 2.49                     | 0.61              |
| 8:AB:307:G:N2     | 8:AB:310:A:OP2    | 2.34                     | 0.61              |
| 8:AB:325:G:N1     | 8:AB:326:G:C5     | 2.69                     | 0.61              |
| 8:AB:375:G:H8     | 8:AB:375:G:H5''   | 1.66                     | 0.61              |
| 8:AB:811:U:C5     | 18:AL:29:LYS:CD   | 2.84                     | 0.61              |
| 8:AB:1001:A:H2'   | 8:AB:1002:G:O4'   | 2.00                     | 0.61              |
| 8:AB:1454:C:H4'   | 8:AB:1455:G:OP1   | 2.01                     | 0.61              |
| 8:AB:1566:A:N1    | 9:AC:213:ARG:CZ   | 2.64                     | 0.61              |
| 8:AB:1566:A:C6    | 9:AC:213:ARG:NH2  | 2.68                     | 0.61              |
| 8:AB:1707:G:H5'   | 8:AB:1707:G:C8    | 2.35                     | 0.61              |
| 8:AB:2148:G:H8    | 8:AB:2148:G:O5'   | 1.83                     | 0.61              |
| 8:AB:2210:U:H4'   | 8:AB:2211:A:H5'   | 1.83                     | 0.61              |
| 8:AB:2307:G:N2    | 8:AB:2308:G:O2'   | 2.34                     | 0.61              |
| 8:AB:2361:G:C2'   | 8:AB:2362:C:H5'   | 2.31                     | 0.61              |
| 8:AB:2504:U:H5'   | 55:AB:4652:HOH:O  | 2.01                     | 0.61              |
| 8:AB:2519:U:C6    | 8:AB:2541:A:N6    | 2.69                     | 0.61              |
| 8:AB:2571:U:N3    | 8:AB:2574:G:C8    | 2.69                     | 0.61              |
| 9:AC:181:ARG:HH22 | 9:AC:260:LYS:NZ   | 1.98                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AD:51:THR:O     | 10:AD:52:THR:O     | 2.19                     | 0.61              |
| 10:AD:175:LEU:HD22 | 10:AD:189:VAL:HG12 | 1.83                     | 0.61              |
| 11:AE:136:GLN:NE2  | 11:AE:137:LYS:HE3  | 2.16                     | 0.61              |
| 11:AE:193:VAL:HG11 | 11:AE:201:ALA:HB2  | 1.83                     | 0.61              |
| 12:AF:3:LEU:HD12   | 12:AF:100:GLU:HB3  | 1.81                     | 0.61              |
| 16:AJ:35:ARG:HH12  | 16:AJ:41:LYS:N     | 1.99                     | 0.61              |
| 18:AL:94:THR:HG23  | 18:AL:95:LEU:N     | 2.10                     | 0.61              |
| 19:AM:31:PHE:HA    | 19:AM:128:THR:CB   | 2.31                     | 0.61              |
| 24:AR:78:ARG:HB3   | 24:AR:87:GLN:HA    | 1.83                     | 0.61              |
| 33:BA:1139:G:O4'   | 33:BA:1140:C:H5    | 1.83                     | 0.61              |
| 33:BA:1197:A:C2'   | 33:BA:1198:G:H5'   | 2.31                     | 0.61              |
| 33:BA:1360:A:N6    | 33:BA:1361:G:N2    | 2.49                     | 0.61              |
| 33:BA:1410:A:C2    | 33:BA:1491:G:C2    | 2.89                     | 0.61              |
| 36:BD:24:VAL:HB    | 36:BD:25:ARG:HD2   | 1.83                     | 0.61              |
| 37:BE:22:LYS:HB3   | 37:BE:29:ILE:HG13  | 1.82                     | 0.61              |
| 37:BE:97:PRO:HA    | 37:BE:122:VAL:HG12 | 1.83                     | 0.61              |
| 38:BF:7:VAL:HG22   | 38:BF:8:PHE:N      | 2.15                     | 0.61              |
| 53:BU:33:ARG:HH11  | 53:BU:34:ARG:HE    | 1.49                     | 0.61              |
| 2:C1:24:LYS:HD3    | 2:C1:24:LYS:H      | 1.64                     | 0.61              |
| 5:C4:30:GLU:O      | 5:C4:34:LYS:HD3    | 2.01                     | 0.61              |
| 8:CB:322:A:N1      | 8:CB:340:A:C6      | 2.69                     | 0.61              |
| 8:CB:333:G:H2'     | 8:CB:333:G:N3      | 2.15                     | 0.61              |
| 8:CB:419:U:H2'     | 8:CB:420:C:C6      | 2.36                     | 0.61              |
| 8:CB:1108:U:C2     | 8:CB:1109:C:H5     | 2.18                     | 0.61              |
| 8:CB:1258:U:C6     | 8:CB:1259:G:N7     | 2.68                     | 0.61              |
| 8:CB:1612:C:C2     | 8:CB:1620:G:N2     | 2.69                     | 0.61              |
| 8:CB:2049:G:P      | 55:CB:5369:HOH:O   | 2.57                     | 0.61              |
| 8:CB:2513:A:C6     | 8:CB:2514:U:C4     | 2.89                     | 0.61              |
| 8:CB:2589:A:O2'    | 8:CB:2590:A:H5'    | 2.00                     | 0.61              |
| 8:CB:2733:A:H2'    | 8:CB:2734:A:C5'    | 2.31                     | 0.61              |
| 8:CB:2891:U:C6     | 8:CB:2891:U:C3'    | 2.84                     | 0.61              |
| 9:CC:116:GLN:N     | 9:CC:127:ASN:HB2   | 2.16                     | 0.61              |
| 9:CC:190:THR:O     | 9:CC:191:LEU:HB3   | 1.99                     | 0.61              |
| 9:CC:229:HIS:CG    | 9:CC:230:PRO:CD    | 2.84                     | 0.61              |
| 9:CC:235:GLU:CG    | 9:CC:236:GLY:N     | 2.64                     | 0.61              |
| 11:CE:157:LEU:H    | 11:CE:157:LEU:HD23 | 1.65                     | 0.61              |
| 12:CF:3:LEU:HD12   | 12:CF:100:GLU:HB3  | 1.83                     | 0.61              |
| 12:CF:52:ALA:HB1   | 12:CF:148:VAL:HG11 | 1.81                     | 0.61              |
| 15:CI:85:ILE:HD12  | 15:CI:88:GLY:HA2   | 1.82                     | 0.61              |
| 20:CN:4:ARG:NH2    | 55:CN:201:HOH:O    | 2.34                     | 0.61              |
| 29:CW:19:ARG:HH21  | 29:CW:22:VAL:HG22  | 1.66                     | 0.61              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:CW:36:ILE:CG2   | 29:CW:69:GLU:OE2   | 2.48                     | 0.61              |
| 33:DA:435:A:C2     | 33:DA:436:C:C1'    | 2.84                     | 0.61              |
| 33:DA:764:C:O2     | 33:DA:765:G:O4'    | 2.18                     | 0.61              |
| 33:DA:1480:A:H8    | 33:DA:1480:A:H5'   | 1.66                     | 0.61              |
| 34:DB:93:HIS:O     | 34:DB:94:ARG:O     | 2.18                     | 0.61              |
| 40:DH:94:VAL:HG12  | 40:DH:99:GLY:HA3   | 1.82                     | 0.61              |
| 4:A3:9:ALA:C       | 4:A3:11:LYS:H      | 2.03                     | 0.60              |
| 4:A3:11:LYS:HA     | 18:AL:66:PHE:CZ    | 2.36                     | 0.60              |
| 8:AB:37:C:H2'      | 11:AE:46:GLN:HG2   | 1.82                     | 0.60              |
| 8:AB:108:G:H2'     | 8:AB:109:C:C6      | 2.36                     | 0.60              |
| 8:AB:220:G:C5      | 8:AB:427:U:C5      | 2.89                     | 0.60              |
| 8:AB:223:A:N7      | 8:AB:422:A:N9      | 2.49                     | 0.60              |
| 8:AB:683:U:C2'     | 8:AB:684:G:O5'     | 2.48                     | 0.60              |
| 8:AB:702:U:H6      | 8:AB:702:U:H5''    | 1.66                     | 0.60              |
| 8:AB:784:G:OP1     | 8:AB:2588:G:H5''   | 2.00                     | 0.60              |
| 8:AB:980:A:N7      | 8:AB:1136:G:H5'    | 2.16                     | 0.60              |
| 8:AB:998:C:OP2     | 23:AQ:57:ARG:NH2   | 2.34                     | 0.60              |
| 8:AB:1664:A:H2'    | 8:AB:1665:A:H8     | 1.65                     | 0.60              |
| 8:AB:2821:A:H5''   | 10:AD:167:ASN:HD21 | 1.64                     | 0.60              |
| 10:AD:36:GLN:OE1   | 10:AD:89:GLU:CB    | 2.48                     | 0.60              |
| 13:AG:148:ARG:HA   | 13:AG:161:VAL:HB   | 1.83                     | 0.60              |
| 18:AL:70:LYS:HG3   | 18:AL:71:ALA:H     | 1.66                     | 0.60              |
| 19:AM:103:TYR:CE2  | 19:AM:113:ALA:HB2  | 2.36                     | 0.60              |
| 21:AO:25:ARG:O     | 21:AO:39:VAL:HG13  | 2.00                     | 0.60              |
| 21:AO:106:LEU:HD13 | 21:AO:106:LEU:C    | 2.20                     | 0.60              |
| 24:AR:83:TYR:O     | 24:AR:84:ARG:HB3   | 2.02                     | 0.60              |
| 24:AR:90:ARG:NH1   | 24:AR:92:TRP:N     | 2.48                     | 0.60              |
| 27:AU:61:GLU:CG    | 27:AU:62:ALA:N     | 2.64                     | 0.60              |
| 32:AZ:3:LYS:HG3    | 32:AZ:6:HIS:C      | 2.21                     | 0.60              |
| 33:BA:405:U:H5''   | 33:BA:406:G:O4'    | 2.01                     | 0.60              |
| 33:BA:667:G:OP1    | 33:BA:732:C:O2'    | 2.19                     | 0.60              |
| 33:BA:705:G:H2'    | 33:BA:706:A:H5''   | 1.81                     | 0.60              |
| 33:BA:858:G:H1     | 33:BA:869:G:C3'    | 2.14                     | 0.60              |
| 33:BA:927:G:P      | 33:BA:1503:A:C8    | 2.94                     | 0.60              |
| 33:BA:1532:U:N3    | 33:BA:1534:A:OP2   | 2.33                     | 0.60              |
| 38:BF:74:LEU:O     | 38:BF:78:PHE:HD1   | 1.83                     | 0.60              |
| 40:BH:9:MET:HA     | 40:BH:26:MET:CE    | 2.30                     | 0.60              |
| 41:BI:53:LEU:O     | 41:BI:54:VAL:HG13  | 2.01                     | 0.60              |
| 52:BT:5:SER:O      | 52:BT:7:LYS:N      | 2.34                     | 0.60              |
| 8:CB:116:C:H2'     | 8:CB:117:G:O4'     | 2.01                     | 0.60              |
| 8:CB:204:A:N7      | 8:CB:206:U:N3      | 2.48                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:381:G:C6      | 8:CB:382:A:C8     | 2.88                     | 0.60              |
| 8:CB:554:U:OP2     | 8:CB:554:U:H6     | 1.84                     | 0.60              |
| 8:CB:807:U:H2'     | 8:CB:808:G:O5'    | 2.00                     | 0.60              |
| 8:CB:979:A:H3'     | 8:CB:980:A:C5'    | 2.31                     | 0.60              |
| 8:CB:1390:U:H2'    | 8:CB:1391:U:H5'   | 1.81                     | 0.60              |
| 8:CB:1930:G:H22    | 8:CB:1969:A:P     | 2.23                     | 0.60              |
| 8:CB:2001:C:N3     | 8:CB:2002:G:C8    | 2.68                     | 0.60              |
| 8:CB:2643:G:C2'    | 8:CB:2644:G:H5'   | 2.31                     | 0.60              |
| 8:CB:2711:A:OP2    | 55:CB:5479:HOH:O  | 2.16                     | 0.60              |
| 8:CB:2739:U:C6     | 8:CB:2739:U:C3'   | 2.82                     | 0.60              |
| 8:CB:2740:A:C8     | 8:CB:2764:A:N6    | 2.69                     | 0.60              |
| 8:CB:2839:G:C2     | 8:CB:2840:C:C2    | 2.89                     | 0.60              |
| 9:CC:204:LEU:HB3   | 9:CC:210:ALA:CB   | 2.30                     | 0.60              |
| 11:CE:49:ARG:CB    | 11:CE:51:GLU:HG2  | 2.31                     | 0.60              |
| 11:CE:146:VAL:HB   | 11:CE:184:ASP:OD2 | 2.01                     | 0.60              |
| 13:CG:16:VAL:O     | 13:CG:17:LYS:HB2  | 2.01                     | 0.60              |
| 15:CI:21:PRO:HB2   | 15:CI:22:PRO:CD   | 2.29                     | 0.60              |
| 21:CO:52:SER:H     | 21:CO:55:GLU:HG3  | 1.65                     | 0.60              |
| 23:CQ:93:ILE:HD12  | 23:CQ:93:ILE:O    | 2.01                     | 0.60              |
| 26:CT:10:VAL:CG2   | 26:CT:11:LEU:HD12 | 2.30                     | 0.60              |
| 26:CT:58:VAL:HG12  | 26:CT:59:ASN:N    | 2.16                     | 0.60              |
| 33:DA:446:G:N1     | 33:DA:447:G:H1'   | 2.16                     | 0.60              |
| 33:DA:552:U:H4'    | 44:DL:82:ARG:HD2  | 1.82                     | 0.60              |
| 33:DA:907:A:C2     | 33:DA:908:A:N9    | 2.69                     | 0.60              |
| 35:DC:118:SER:O    | 35:DC:122:GLN:HG3 | 2.01                     | 0.60              |
| 35:DC:119:ILE:HD11 | 35:DC:132:ALA:O   | 2.01                     | 0.60              |
| 37:DE:89:THR:C     | 37:DE:91:SER:H    | 2.03                     | 0.60              |
| 49:DQ:57:VAL:HG12  | 49:DQ:78:VAL:HG23 | 1.83                     | 0.60              |
| 51:DS:18:VAL:HG11  | 51:DS:43:MET:CE   | 2.31                     | 0.60              |
| 7:AA:52:A:H2'      | 7:AA:52:A:N3      | 2.16                     | 0.60              |
| 7:AA:71:C:H2'      | 7:AA:72:G:H8      | 1.65                     | 0.60              |
| 8:AB:118:A:H8      | 8:AB:119:A:C8     | 2.17                     | 0.60              |
| 8:AB:187:G:H3'     | 8:AB:187:G:C8     | 2.36                     | 0.60              |
| 8:AB:308:G:C6      | 8:AB:309:A:C2     | 2.88                     | 0.60              |
| 8:AB:449:A:C6      | 8:AB:450:G:C5     | 2.89                     | 0.60              |
| 8:AB:749:A:H1'     | 8:AB:1618:A:OP1   | 2.00                     | 0.60              |
| 8:AB:1255:U:H3     | 11:AE:66:GLY:HA2  | 1.65                     | 0.60              |
| 8:AB:1796:U:C2     | 8:AB:1797:G:C8    | 2.90                     | 0.60              |
| 8:AB:2047:C:H2'    | 8:AB:2048:G:H8    | 1.65                     | 0.60              |
| 8:AB:2095:A:H2'    | 8:AB:2096:C:O4'   | 2.01                     | 0.60              |
| 8:AB:2276:G:C2'    | 8:AB:2277:G:H5'   | 2.31                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2636:C:OP1   | 10:AD:80:TRP:CB   | 2.49                     | 0.60              |
| 8:AB:2760:C:H2'   | 8:AB:2760:C:O2    | 1.99                     | 0.60              |
| 8:AB:2814:A:H2'   | 8:AB:2815:C:C6    | 2.36                     | 0.60              |
| 10:AD:61:THR:N    | 10:AD:62:LYS:HZ1  | 1.99                     | 0.60              |
| 10:AD:102:ALA:HB3 | 10:AD:105:LYS:HZ2 | 1.64                     | 0.60              |
| 11:AE:16:GLU:OE2  | 11:AE:19:PHE:HA   | 2.00                     | 0.60              |
| 13:AG:89:VAL:HB   | 13:AG:159:LYS:HA  | 1.82                     | 0.60              |
| 15:AI:19:PRO:HB2  | 15:AI:21:PRO:HD2  | 1.83                     | 0.60              |
| 16:AJ:3:THR:O     | 16:AJ:4:PHE:HD2   | 1.84                     | 0.60              |
| 18:AL:94:THR:H    | 18:AL:96:LYS:NZ   | 1.99                     | 0.60              |
| 26:AT:68:LYS:HZ2  | 26:AT:73:ARG:HA   | 1.64                     | 0.60              |
| 32:AZ:49:ARG:C    | 32:AZ:51:VAL:N    | 2.47                     | 0.60              |
| 32:AZ:59:ARG:HG3  | 32:AZ:62:LYS:H    | 1.65                     | 0.60              |
| 33:BA:33:A:H1'    | 44:BL:28:GLN:HE22 | 1.66                     | 0.60              |
| 33:BA:62:U:O2'    | 33:BA:379:C:H1'   | 2.02                     | 0.60              |
| 33:BA:600:A:OP1   | 40:BH:88:LYS:HG2  | 2.01                     | 0.60              |
| 33:BA:673:A:N1    | 33:BA:734:G:C6    | 2.69                     | 0.60              |
| 33:BA:717:U:H2'   | 33:BA:734:G:H8    | 1.66                     | 0.60              |
| 33:BA:770:C:H2'   | 33:BA:771:G:O4'   | 1.99                     | 0.60              |
| 33:BA:781:A:C2    | 33:BA:1514:G:H4'  | 2.35                     | 0.60              |
| 33:BA:1085:U:O4'  | 33:BA:1094:G:C2   | 2.54                     | 0.60              |
| 36:BD:80:ARG:HB3  | 36:BD:80:ARG:NH1  | 2.14                     | 0.60              |
| 37:BE:151:MET:HB2 | 37:BE:155:LYS:HG3 | 1.83                     | 0.60              |
| 44:BL:55:ARG:O    | 44:BL:56:LEU:HD23 | 2.00                     | 0.60              |
| 45:BM:103:THR:O   | 45:BM:105:ALA:N   | 2.34                     | 0.60              |
| 46:BN:11:LYS:O    | 46:BN:15:LEU:HG   | 2.00                     | 0.60              |
| 48:BP:73:ALA:O    | 48:BP:77:GLU:HG3  | 2.00                     | 0.60              |
| 5:C4:6:SER:OG     | 8:CB:1031:G:H1'   | 2.01                     | 0.60              |
| 7:CA:43:C:O4'     | 7:CA:43:C:OP2     | 2.18                     | 0.60              |
| 8:CB:64:A:C2      | 8:CB:65:U:N3      | 2.69                     | 0.60              |
| 8:CB:360:U:H2'    | 8:CB:361:G:C1'    | 2.32                     | 0.60              |
| 8:CB:451:U:C2     | 8:CB:453:A:N7     | 2.69                     | 0.60              |
| 8:CB:634:C:H6     | 8:CB:634:C:O5'    | 1.83                     | 0.60              |
| 8:CB:692:C:H5''   | 9:CC:42:ARG:H     | 1.65                     | 0.60              |
| 8:CB:694:U:OP1    | 8:CB:1569:A:H1'   | 2.01                     | 0.60              |
| 8:CB:826:U:H5''   | 8:CB:827:U:OP2    | 2.00                     | 0.60              |
| 8:CB:1062:G:H2'   | 15:CI:90:GLY:O    | 2.01                     | 0.60              |
| 8:CB:1117:C:H2'   | 8:CB:1118:C:C6    | 2.36                     | 0.60              |
| 8:CB:1306:C:H42   | 8:CB:1622:G:H1    | 1.47                     | 0.60              |
| 8:CB:1668:A:C5    | 8:CB:1674:G:C5    | 2.90                     | 0.60              |
| 8:CB:1959:G:N1    | 8:CB:1960:A:C4    | 2.69                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2216:G:H2'   | 8:CB:2217:G:H5'   | 1.82                     | 0.60              |
| 8:CB:2692:G:O6    | 8:CB:2718:G:C6    | 2.54                     | 0.60              |
| 8:CB:2745:C:H3'   | 8:CB:2746:U:C6    | 2.36                     | 0.60              |
| 9:CC:45:ASN:O     | 9:CC:47:ARG:N     | 2.34                     | 0.60              |
| 15:CI:10:LEU:HD13 | 15:CI:23:VAL:HG22 | 1.81                     | 0.60              |
| 21:CO:1:MET:HG3   | 21:CO:1:MET:O     | 1.99                     | 0.60              |
| 22:CP:7:LEU:O     | 22:CP:9:GLN:N     | 2.34                     | 0.60              |
| 26:CT:70:HIS:O    | 26:CT:74:ILE:HB   | 2.00                     | 0.60              |
| 32:CZ:30:HIS:HB3  | 32:CZ:32:LEU:CD2  | 2.31                     | 0.60              |
| 33:DA:321:A:H2'   | 33:DA:328:C:C5    | 2.32                     | 0.60              |
| 33:DA:454:G:H2'   | 33:DA:455:G:C8    | 2.30                     | 0.60              |
| 33:DA:705:G:N7    | 33:DA:706:A:N7    | 2.49                     | 0.60              |
| 33:DA:735:C:N3    | 33:DA:736:C:C5    | 2.68                     | 0.60              |
| 33:DA:1385:G:C6   | 33:DA:1386:G:C4   | 2.89                     | 0.60              |
| 37:DE:52:ALA:H    | 37:DE:58:ALA:CB   | 2.15                     | 0.60              |
| 39:DG:75:LYS:HD2  | 39:DG:76:SER:H    | 1.66                     | 0.60              |
| 43:DK:66:ALA:HB2  | 43:DK:95:THR:OG1  | 2.00                     | 0.60              |
| 46:DN:13:VAL:O    | 46:DN:16:ALA:HB3  | 2.02                     | 0.60              |
| 47:DO:34:GLN:O    | 47:DO:38:LEU:HD23 | 2.01                     | 0.60              |
| 49:DQ:4:ILE:HG22  | 49:DQ:61:ARG:HD3  | 1.82                     | 0.60              |
| 3:A2:12:ARG:HG2   | 8:AB:686:U:H3     | 1.65                     | 0.60              |
| 7:AA:114:C:O2'    | 21:AO:49:VAL:HG21 | 2.02                     | 0.60              |
| 8:AB:78:U:H2'     | 8:AB:79:C:C6      | 2.35                     | 0.60              |
| 8:AB:363:G:N2     | 8:AB:364:C:N3     | 2.48                     | 0.60              |
| 8:AB:569:U:H1'    | 8:AB:947:A:O4'    | 2.00                     | 0.60              |
| 8:AB:966:G:C6     | 8:AB:967:U:O2     | 2.54                     | 0.60              |
| 8:AB:1028:A:C8    | 8:AB:1028:A:C5'   | 2.77                     | 0.60              |
| 8:AB:1195:G:C2    | 8:AB:1196:C:C5    | 2.89                     | 0.60              |
| 8:AB:1998:A:H2'   | 8:AB:1999:C:O4'   | 2.02                     | 0.60              |
| 8:AB:2087:G:H8    | 8:AB:2087:G:O5'   | 1.84                     | 0.60              |
| 8:AB:2147:A:OP1   | 8:AB:2148:G:H4'   | 2.01                     | 0.60              |
| 8:AB:2405:G:H2'   | 8:AB:2411:A:H62   | 1.65                     | 0.60              |
| 8:AB:2439:A:H4'   | 8:AB:2440:C:C5'   | 2.32                     | 0.60              |
| 8:AB:2812:G:N1    | 8:AB:2813:A:C2    | 2.69                     | 0.60              |
| 9:AC:257:ARG:HA   | 9:AC:261:ARG:NH1  | 2.16                     | 0.60              |
| 11:AE:46:GLN:H    | 11:AE:46:GLN:NE2  | 1.99                     | 0.60              |
| 15:AI:96:LYS:HG2  | 15:AI:138:VAL:HB  | 1.82                     | 0.60              |
| 16:AJ:8:PRO:HB2   | 16:AJ:10:THR:O    | 2.01                     | 0.60              |
| 16:AJ:35:ARG:NH1  | 16:AJ:41:LYS:H    | 1.99                     | 0.60              |
| 22:AP:7:LEU:O     | 22:AP:11:GLN:HG3  | 2.01                     | 0.60              |
| 24:AR:75:VAL:N    | 24:AR:90:ARG:HE   | 1.99                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:AS:76:VAL:HG12 | 25:AS:103:ILE:HD13 | 1.82                     | 0.60              |
| 28:AV:59:GLU:HG2  | 28:AV:60:VAL:N     | 2.16                     | 0.60              |
| 29:AW:46:ALA:O    | 29:AW:55:ASP:HB3   | 2.01                     | 0.60              |
| 33:BA:58:C:H1'    | 33:BA:388:G:N7     | 2.17                     | 0.60              |
| 33:BA:202:G:O2'   | 33:BA:468:A:H2'    | 2.01                     | 0.60              |
| 33:BA:541:G:N3    | 33:BA:542:G:C8     | 2.70                     | 0.60              |
| 33:BA:1105:A:H2'  | 33:BA:1106:G:H8    | 1.65                     | 0.60              |
| 33:BA:1221:G:H2'  | 33:BA:1222:G:H8    | 1.65                     | 0.60              |
| 34:BB:106:VAL:O   | 34:BB:110:ILE:HG13 | 2.00                     | 0.60              |
| 35:BC:147:GLY:HA2 | 35:BC:169:GLU:O    | 2.01                     | 0.60              |
| 36:BD:31:CYS:O    | 36:BD:32:LYS:HB2   | 2.02                     | 0.60              |
| 37:BE:14:LEU:HD13 | 37:BE:15:ILE:N     | 2.16                     | 0.60              |
| 40:BH:44:PHE:CE2  | 40:BH:100:ILE:HD13 | 2.36                     | 0.60              |
| 45:BM:93:GLY:O    | 45:BM:94:LEU:HD23  | 2.01                     | 0.60              |
| 49:BQ:20:ILE:HG12 | 49:BQ:52:CYS:SG    | 2.42                     | 0.60              |
| 50:BR:22:TYR:HD1  | 50:BR:23:LYS:N     | 1.99                     | 0.60              |
| 50:BR:41:SER:HB2  | 50:BR:51:GLN:HG2   | 1.82                     | 0.60              |
| 4:C3:4:LYS:HZ1    | 4:C3:60:CYS:C      | 2.04                     | 0.60              |
| 7:CA:25:U:H5'     | 7:CA:25:U:C6       | 2.37                     | 0.60              |
| 8:CB:217:A:C4     | 8:CB:218:A:C8      | 2.90                     | 0.60              |
| 8:CB:223:A:C5     | 8:CB:422:A:C8      | 2.89                     | 0.60              |
| 8:CB:443:A:C8     | 11:CE:40:ARG:HG3   | 2.36                     | 0.60              |
| 8:CB:463:G:H3'    | 8:CB:463:G:C8      | 2.36                     | 0.60              |
| 8:CB:772:C:N3     | 8:CB:773:U:C5      | 2.69                     | 0.60              |
| 8:CB:994:C:N4     | 8:CB:1160:G:N1     | 2.48                     | 0.60              |
| 8:CB:1069:A:H4'   | 8:CB:1070:A:C5'    | 2.31                     | 0.60              |
| 8:CB:1322:A:H4'   | 25:CS:82:MET:CE    | 2.30                     | 0.60              |
| 8:CB:1375:U:C3'   | 8:CB:1376:C:H5''   | 2.31                     | 0.60              |
| 8:CB:1451:C:H4'   | 8:CB:1451:C:OP1    | 2.02                     | 0.60              |
| 8:CB:1662:U:C2'   | 8:CB:1663:G:H5''   | 2.31                     | 0.60              |
| 8:CB:2214:C:O2    | 8:CB:2214:C:H2'    | 2.00                     | 0.60              |
| 8:CB:2287:A:C2    | 8:CB:2289:G:C6     | 2.89                     | 0.60              |
| 8:CB:2459:A:N6    | 8:CB:2494:G:C2     | 2.69                     | 0.60              |
| 10:CD:62:LYS:H    | 10:CD:62:LYS:CD    | 2.14                     | 0.60              |
| 16:CJ:84:ILE:H    | 16:CJ:84:ILE:CD1   | 2.08                     | 0.60              |
| 17:CK:30:ARG:HG2  | 17:CK:31:ARG:N     | 2.15                     | 0.60              |
| 20:CN:96:ARG:O    | 20:CN:113:ILE:HA   | 2.00                     | 0.60              |
| 21:CO:17:LYS:HD3  | 21:CO:20:GLU:HG3   | 1.82                     | 0.60              |
| 24:CR:35:PHE:CB   | 24:CR:64:VAL:HG13  | 2.29                     | 0.60              |
| 28:CV:24:ASN:HB3  | 28:CV:44:HIS:HB2   | 1.83                     | 0.60              |
| 28:CV:63:ILE:N    | 28:CV:70:ILE:CD1   | 2.63                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:71:A:H1'    | 33:DA:72:A:H5'     | 1.83                     | 0.60              |
| 33:DA:199:A:H2'   | 33:DA:200:G:C8     | 2.36                     | 0.60              |
| 33:DA:699:C:H3'   | 33:DA:700:G:H5''   | 1.83                     | 0.60              |
| 33:DA:889:A:H5'   | 33:DA:891:U:C1'    | 2.25                     | 0.60              |
| 33:DA:979:C:H4'   | 55:DA:5248:HOH:O   | 2.01                     | 0.60              |
| 33:DA:1111:A:H61  | 35:DC:176:THR:HG22 | 1.64                     | 0.60              |
| 33:DA:1340:A:C2'  | 33:DA:1341:U:H5'   | 2.31                     | 0.60              |
| 33:DA:1343:G:H4'  | 41:DI:123:ARG:HG2  | 1.82                     | 0.60              |
| 33:DA:1417:G:O2'  | 33:DA:1483:A:N6    | 2.35                     | 0.60              |
| 34:DB:13:VAL:O    | 34:DB:13:VAL:HG12  | 2.01                     | 0.60              |
| 48:DP:1:MET:HG3   | 48:DP:2:VAL:N      | 2.15                     | 0.60              |
| 50:DR:54:LEU:HD23 | 50:DR:58:ILE:HD11  | 1.82                     | 0.60              |
| 51:DS:11:ASP:OD1  | 51:DS:34:SER:HB3   | 2.02                     | 0.60              |
| 52:DT:2:ASN:HB3   | 55:DT:5001:HOH:O   | 2.00                     | 0.60              |
| 4:A3:54:LEU:C     | 4:A3:56:LEU:N      | 2.54                     | 0.60              |
| 5:A4:22:VAL:CG1   | 5:A4:24:ARG:HH21   | 2.15                     | 0.60              |
| 6:A5:150:LYS:O    | 6:A5:154:ILE:HG22  | 2.01                     | 0.60              |
| 8:AB:445:C:H1'    | 11:AE:47:LYS:HZ3   | 1.67                     | 0.60              |
| 8:AB:688:U:H3'    | 8:AB:688:U:C6      | 2.35                     | 0.60              |
| 8:AB:1984:G:C6    | 8:AB:1985:C:C5     | 2.89                     | 0.60              |
| 8:AB:2056:G:N3    | 8:AB:2577:A:C2     | 2.69                     | 0.60              |
| 8:AB:2085:U:OP1   | 9:AC:256:THR:HG21  | 2.01                     | 0.60              |
| 8:AB:2741:A:H61   | 8:AB:2763:G:H1'    | 1.66                     | 0.60              |
| 8:AB:2866:U:C2    | 8:AB:2868:A:H1'    | 2.36                     | 0.60              |
| 9:AC:155:ARG:HD3  | 9:AC:157:ALA:H     | 1.65                     | 0.60              |
| 9:AC:177:SER:O    | 9:AC:179:GLU:CD    | 2.39                     | 0.60              |
| 10:AD:145:SER:O   | 10:AD:146:ILE:HG23 | 2.00                     | 0.60              |
| 18:AL:77:ILE:CG2  | 18:AL:78:ARG:N     | 2.63                     | 0.60              |
| 18:AL:90:VAL:HG11 | 18:AL:120:VAL:HA   | 1.82                     | 0.60              |
| 20:AN:32:GLU:HG3  | 20:AN:33:ILE:CG1   | 2.28                     | 0.60              |
| 20:AN:103:ARG:H   | 20:AN:108:ALA:H    | 1.48                     | 0.60              |
| 22:AP:15:ASP:O    | 22:AP:16:VAL:HG13  | 2.01                     | 0.60              |
| 32:AZ:3:LYS:HD3   | 32:AZ:51:VAL:CG2   | 2.32                     | 0.60              |
| 32:AZ:48:GLN:HE22 | 32:AZ:49:ARG:CD    | 2.13                     | 0.60              |
| 33:BA:342:C:H42   | 33:BA:347:G:H1     | 1.49                     | 0.60              |
| 33:BA:613:C:OP1   | 36:BD:80:ARG:HG3   | 2.00                     | 0.60              |
| 33:BA:676:A:N1    | 33:BA:715:A:C2     | 2.67                     | 0.60              |
| 33:BA:1107:C:C4   | 33:BA:1108:G:C8    | 2.90                     | 0.60              |
| 33:BA:1457:G:H2'  | 33:BA:1458:G:C8    | 2.36                     | 0.60              |
| 33:BA:1465:A:N7   | 33:BA:1466:C:H5    | 1.99                     | 0.60              |
| 33:BA:1501:C:C5   | 33:BA:1504:G:C4    | 2.88                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BB:60:ALA:O     | 34:BB:224:ARG:HD3 | 2.01                     | 0.60              |
| 35:BC:122:GLN:HE22 | 35:BC:136:ALA:CB  | 2.15                     | 0.60              |
| 37:BE:151:MET:O    | 37:BE:151:MET:HG2 | 2.02                     | 0.60              |
| 41:BI:44:ARG:HH11  | 41:BI:44:ARG:H    | 1.48                     | 0.60              |
| 42:BJ:52:LEU:HD13  | 46:BN:80:ARG:CD   | 2.31                     | 0.60              |
| 42:BJ:70:HIS:H     | 42:BJ:70:HIS:HD2  | 1.48                     | 0.60              |
| 7:CA:76:G:N2       | 7:CA:77:U:C2      | 2.69                     | 0.60              |
| 8:CB:79:C:H2'      | 8:CB:346:A:H8     | 1.64                     | 0.60              |
| 8:CB:370:G:C8      | 8:CB:370:G:OP2    | 2.54                     | 0.60              |
| 8:CB:381:G:H2'     | 8:CB:382:A:H5'    | 1.83                     | 0.60              |
| 8:CB:449:A:C6      | 8:CB:450:G:C5     | 2.89                     | 0.60              |
| 8:CB:563:A:N6      | 8:CB:2018:G:C8    | 2.69                     | 0.60              |
| 8:CB:663:G:OP1     | 18:CL:27:LEU:HD22 | 2.01                     | 0.60              |
| 8:CB:1132:U:H6     | 8:CB:1132:U:H5''  | 1.66                     | 0.60              |
| 8:CB:1586:A:H3'    | 8:CB:1586:A:C8    | 2.37                     | 0.60              |
| 8:CB:1661:G:O2'    | 8:CB:1662:U:H5'   | 2.01                     | 0.60              |
| 8:CB:1661:G:N2     | 8:CB:2000:C:H1'   | 2.17                     | 0.60              |
| 8:CB:1673:G:N2     | 8:CB:1675:C:H5'   | 2.17                     | 0.60              |
| 8:CB:1771:C:H2'    | 8:CB:1772:A:C8    | 2.34                     | 0.60              |
| 8:CB:2057:G:N1     | 8:CB:2058:A:C2    | 2.69                     | 0.60              |
| 8:CB:2303:G:H1'    | 12:CF:122:ASP:CA  | 2.25                     | 0.60              |
| 8:CB:2488:G:N2     | 8:CB:2489:U:C2    | 2.70                     | 0.60              |
| 8:CB:2638:G:H22    | 8:CB:2775:G:H2'   | 1.64                     | 0.60              |
| 8:CB:2821:A:OP2    | 20:CN:2:ARG:CD    | 2.48                     | 0.60              |
| 10:CD:34:VAL:HG13  | 10:CD:35:THR:H    | 1.66                     | 0.60              |
| 10:CD:101:PHE:HD1  | 10:CD:101:PHE:C   | 2.04                     | 0.60              |
| 11:CE:138:LEU:HD11 | 11:CE:187:VAL:CG1 | 2.32                     | 0.60              |
| 12:CF:88:VAL:HG12  | 12:CF:90:LEU:HD11 | 1.84                     | 0.60              |
| 15:CI:8:VAL:HG22   | 15:CI:58:ILE:HB   | 1.84                     | 0.60              |
| 16:CJ:59:ALA:O     | 16:CJ:61:LYS:N    | 2.35                     | 0.60              |
| 21:CO:27:VAL:CG2   | 21:CO:28:VAL:H    | 2.13                     | 0.60              |
| 23:CQ:44:TYR:CD1   | 23:CQ:48:ASP:CB   | 2.84                     | 0.60              |
| 23:CQ:53:LYS:HE2   | 23:CQ:53:LYS:N    | 2.15                     | 0.60              |
| 31:CY:5:LYS:HE2    | 31:CY:56:VAL:O    | 2.01                     | 0.60              |
| 33:DA:181:A:N6     | 33:DA:195:A:C8    | 2.68                     | 0.60              |
| 33:DA:238:A:N3     | 33:DA:239:U:H6    | 1.98                     | 0.60              |
| 33:DA:362:G:H3'    | 33:DA:362:G:C8    | 2.36                     | 0.60              |
| 33:DA:390:U:H2'    | 33:DA:391:G:C8    | 2.36                     | 0.60              |
| 33:DA:536:C:O5'    | 33:DA:536:C:H6    | 1.85                     | 0.60              |
| 33:DA:770:C:N4     | 33:DA:809:G:H1    | 2.00                     | 0.60              |
| 33:DA:822:U:C4     | 33:DA:823:C:N4    | 2.69                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1310:G:OP2  | 51:DS:1:PRO:HG3   | 2.01                     | 0.60              |
| 33:DA:1433:A:N6   | 33:DA:1434:A:C6   | 2.70                     | 0.60              |
| 33:DA:1435:G:H2'  | 33:DA:1436:U:H6   | 1.66                     | 0.60              |
| 38:DF:38:ARG:CZ   | 38:DF:63:ASN:HD21 | 2.14                     | 0.60              |
| 49:DQ:20:ILE:HD12 | 49:DQ:20:ILE:N    | 2.17                     | 0.60              |
| 52:DT:58:ASP:OD1  | 52:DT:75:LYS:HE3  | 2.01                     | 0.60              |
| 7:AA:27:C:C5      | 7:AA:28:C:C5      | 2.90                     | 0.60              |
| 7:AA:76:G:H1'     | 28:AV:78:GLN:NE2  | 2.13                     | 0.60              |
| 8:AB:461:C:H5''   | 8:AB:462:C:OP2    | 2.02                     | 0.60              |
| 8:AB:1268:A:N6    | 8:AB:1269:A:C2    | 2.69                     | 0.60              |
| 8:AB:2241:A:C2    | 8:AB:2242:G:C4    | 2.90                     | 0.60              |
| 8:AB:2439:A:N7    | 8:AB:2586:U:H4'   | 2.15                     | 0.60              |
| 8:AB:2455:G:C6    | 8:AB:2456:C:N4    | 2.69                     | 0.60              |
| 8:AB:2747:G:O6    | 8:AB:2754:U:H2'   | 2.00                     | 0.60              |
| 9:AC:84:PRO:C     | 9:AC:86:ARG:H     | 2.05                     | 0.60              |
| 9:AC:140:VAL:HG23 | 9:AC:161:VAL:HB   | 1.83                     | 0.60              |
| 11:AE:163:ASN:HB2 | 11:AE:166:LYS:HB2 | 1.82                     | 0.60              |
| 22:AP:51:ASN:HD21 | 22:AP:97:TYR:HD2  | 1.41                     | 0.60              |
| 24:AR:24:LYS:HZ1  | 24:AR:66:HIS:CE1  | 2.18                     | 0.60              |
| 24:AR:78:ARG:HG2  | 24:AR:88:GLY:N    | 2.16                     | 0.60              |
| 25:AS:1:MET:HE3   | 25:AS:4:ILE:HG13  | 1.83                     | 0.60              |
| 32:AZ:6:HIS:CG    | 32:AZ:7:PRO:CD    | 2.77                     | 0.60              |
| 33:BA:355:C:C4    | 33:BA:356:A:N7    | 2.70                     | 0.60              |
| 33:BA:546:A:C5'   | 33:BA:546:A:H8    | 2.14                     | 0.60              |
| 33:BA:578:C:H2'   | 33:BA:578:C:O2    | 2.02                     | 0.60              |
| 33:BA:776:G:H5''  | 33:BA:777:A:OP1   | 2.01                     | 0.60              |
| 33:BA:1423:G:C4   | 33:BA:1424:U:C6   | 2.88                     | 0.60              |
| 41:BI:59:LYS:HD2  | 41:BI:60:LEU:CG   | 2.27                     | 0.60              |
| 48:BP:39:PHE:HE1  | 48:BP:74:LEU:HD22 | 1.66                     | 0.60              |
| 53:BU:35:GLU:HB2  | 53:BU:37:TYR:CE2  | 2.36                     | 0.60              |
| 3:C2:16:HIS:CE1   | 3:C2:44:VAL:O     | 2.54                     | 0.60              |
| 7:CA:73:A:C8      | 7:CA:74:U:C5      | 2.90                     | 0.60              |
| 8:CB:460:A:H2'    | 8:CB:461:C:O4'    | 2.01                     | 0.60              |
| 8:CB:630:G:C6     | 8:CB:632:A:OP2    | 2.55                     | 0.60              |
| 8:CB:790:U:H5     | 8:CB:791:C:H5     | 1.49                     | 0.60              |
| 8:CB:1268:A:C6    | 8:CB:2013:A:C8    | 2.88                     | 0.60              |
| 8:CB:1779:U:C5    | 8:CB:1784:A:N7    | 2.69                     | 0.60              |
| 8:CB:1890:A:C8    | 8:CB:1891:G:C8    | 2.89                     | 0.60              |
| 8:CB:2061:G:C4    | 8:CB:2063:C:N4    | 2.69                     | 0.60              |
| 8:CB:2263:C:H41   | 29:CW:12:GLY:HA2  | 1.66                     | 0.60              |
| 8:CB:2430:A:H2'   | 8:CB:2430:A:N3    | 2.16                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2446:G:N2    | 8:CB:2501:C:C4    | 2.70                     | 0.60              |
| 8:CB:2551:C:H2'   | 8:CB:2552:U:O4'   | 2.01                     | 0.60              |
| 8:CB:2678:C:C2    | 8:CB:2679:A:N7    | 2.69                     | 0.60              |
| 8:CB:2722:G:O2'   | 20:CN:4:ARG:HD3   | 2.01                     | 0.60              |
| 8:CB:2881:U:H2'   | 8:CB:2882:A:C8    | 2.35                     | 0.60              |
| 10:CD:81:GLU:CG   | 10:CD:82:PHE:N    | 2.64                     | 0.60              |
| 11:CE:58:LYS:HG2  | 11:CE:71:GLY:HA2  | 1.83                     | 0.60              |
| 15:CI:23:VAL:HG12 | 15:CI:24:GLY:H    | 1.67                     | 0.60              |
| 19:CM:47:GLU:HA   | 19:CM:50:ARG:HB2  | 1.82                     | 0.60              |
| 24:CR:79:ARG:CD   | 24:CR:81:LYS:HE2  | 2.29                     | 0.60              |
| 28:CV:28:ALA:HB3  | 28:CV:40:ILE:HG12 | 1.82                     | 0.60              |
| 29:CW:31:LEU:O    | 29:CW:32:ALA:HB3  | 2.00                     | 0.60              |
| 29:CW:81:ILE:HG23 | 29:CW:83:ALA:H    | 1.65                     | 0.60              |
| 32:CZ:59:ARG:HG3  | 32:CZ:62:LYS:H    | 1.64                     | 0.60              |
| 33:DA:501:C:H1'   | 33:DA:549:C:HO2'  | 1.64                     | 0.60              |
| 33:DA:702:A:H3'   | 33:DA:703:G:H5'   | 1.83                     | 0.60              |
| 33:DA:952:U:C6    | 33:DA:952:U:O5'   | 2.53                     | 0.60              |
| 33:DA:1513:A:C2   | 33:DA:1514:G:C4   | 2.89                     | 0.60              |
| 37:DE:33:THR:CG2  | 37:DE:51:LYS:HB2  | 2.31                     | 0.60              |
| 39:DG:67:ASN:O    | 39:DG:137:ARG:HG3 | 2.02                     | 0.60              |
| 40:DH:63:LYS:CD   | 40:DH:70:VAL:HG11 | 2.31                     | 0.60              |
| 7:AA:2:G:C2       | 7:AA:3:C:N3       | 2.70                     | 0.60              |
| 8:AB:28:A:H2'     | 8:AB:29:U:H5'     | 1.83                     | 0.60              |
| 8:AB:282:A:H2'    | 8:AB:283:G:H8     | 1.67                     | 0.60              |
| 8:AB:422:A:H2'    | 8:AB:423:A:C8     | 2.36                     | 0.60              |
| 8:AB:792:A:N7     | 8:AB:2440:C:C2    | 2.69                     | 0.60              |
| 8:AB:799:G:H3'    | 8:AB:800:A:H2'    | 1.83                     | 0.60              |
| 8:AB:902:C:N3     | 8:AB:903:C:H5     | 2.00                     | 0.60              |
| 8:AB:1183:U:H2'   | 8:AB:1184:U:C6    | 2.36                     | 0.60              |
| 8:AB:1375:U:H5''  | 55:AB:4485:HOH:O  | 2.00                     | 0.60              |
| 8:AB:1443:U:H3'   | 8:AB:1443:U:H6    | 1.66                     | 0.60              |
| 8:AB:1522:A:H1'   | 8:AB:1524:G:C5    | 2.36                     | 0.60              |
| 8:AB:1606:C:N4    | 55:AB:4499:HOH:O  | 2.35                     | 0.60              |
| 8:AB:2024:G:O5'   | 8:AB:2024:G:C8    | 2.55                     | 0.60              |
| 8:AB:2371:G:N3    | 8:AB:2372:U:C6    | 2.70                     | 0.60              |
| 8:AB:2643:G:C2'   | 8:AB:2644:G:H5'   | 2.32                     | 0.60              |
| 8:AB:2807:U:C2    | 8:AB:2892:G:N2    | 2.70                     | 0.60              |
| 10:AD:23:PRO:HA   | 10:AD:190:LYS:HA  | 1.83                     | 0.60              |
| 10:AD:200:ASP:O   | 10:AD:201:LEU:HB2 | 2.00                     | 0.60              |
| 11:AE:109:LEU:CB  | 11:AE:117:ARG:HD3 | 2.28                     | 0.60              |
| 12:AF:63:LYS:HE2  | 12:AF:64:PRO:O    | 2.01                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 14:AH:44:ILE:HG23  | 14:AH:47:PHE:CE2  | 2.36                     | 0.60              |
| 15:AI:126:ARG:HA   | 15:AI:129:GLU:HG3 | 1.83                     | 0.60              |
| 16:AJ:77:HIS:NE2   | 16:AJ:84:ILE:HD13 | 2.15                     | 0.60              |
| 16:AJ:112:GLY:O    | 16:AJ:116:ARG:HB2 | 2.01                     | 0.60              |
| 16:AJ:136:GLN:O    | 16:AJ:138:GLN:N   | 2.35                     | 0.60              |
| 19:AM:43:ALA:C     | 19:AM:45:GLN:H    | 2.04                     | 0.60              |
| 21:AO:25:ARG:C     | 21:AO:26:LEU:HD12 | 2.22                     | 0.60              |
| 22:AP:61:ARG:CZ    | 22:AP:61:ARG:CB   | 2.79                     | 0.60              |
| 31:AY:9:THR:OG1    | 31:AY:10:ARG:N    | 2.31                     | 0.60              |
| 33:BA:518:C:C5     | 33:BA:530:G:C2    | 2.89                     | 0.60              |
| 33:BA:642:A:C8     | 40:BH:106:SER:HA  | 2.36                     | 0.60              |
| 33:BA:741:G:H8     | 33:BA:741:G:H5'   | 1.66                     | 0.60              |
| 33:BA:888:G:H4'    | 33:BA:1488:G:O2'  | 2.02                     | 0.60              |
| 33:BA:907:A:C2     | 33:BA:908:A:C4    | 2.89                     | 0.60              |
| 33:BA:1226:C:H4'   | 33:BA:1227:A:OP1  | 2.01                     | 0.60              |
| 33:BA:1251:A:C4    | 33:BA:1252:A:C8   | 2.89                     | 0.60              |
| 33:BA:1307:U:H5''  | 45:BM:99:GLN:HE22 | 1.67                     | 0.60              |
| 33:BA:1525:G:H2'   | 33:BA:1526:G:H5'  | 1.82                     | 0.60              |
| 35:BC:132:ALA:O    | 35:BC:134:LYS:N   | 2.35                     | 0.60              |
| 37:BE:45:VAL:CG1   | 37:BE:117:ALA:HA  | 2.31                     | 0.60              |
| 45:BM:90:HIS:CD2   | 45:BM:96:VAL:HG11 | 2.37                     | 0.60              |
| 1:C0:48:TYR:CG     | 1:C0:49:ARG:N     | 2.68                     | 0.60              |
| 2:C1:28:THR:O      | 2:C1:29:LYS:HD3   | 2.01                     | 0.60              |
| 4:C3:12:ARG:CZ     | 18:CL:62:PRO:CB   | 2.80                     | 0.60              |
| 8:CB:252:G:H8      | 8:CB:252:G:O5'    | 1.85                     | 0.60              |
| 8:CB:592:A:C4      | 8:CB:593:U:C5     | 2.89                     | 0.60              |
| 8:CB:597:G:N2      | 8:CB:661:A:N3     | 2.49                     | 0.60              |
| 8:CB:682:G:N3      | 8:CB:683:U:C5     | 2.70                     | 0.60              |
| 8:CB:909:A:C2      | 8:CB:912:C:C2     | 2.89                     | 0.60              |
| 8:CB:1257:C:N3     | 8:CB:1258:U:N3    | 2.50                     | 0.60              |
| 8:CB:1663:G:C5'    | 8:CB:1663:G:C8    | 2.84                     | 0.60              |
| 8:CB:1682:G:H5'    | 8:CB:1682:G:C8    | 2.34                     | 0.60              |
| 8:CB:1717:A:H61    | 8:CB:1743:G:H1'   | 1.67                     | 0.60              |
| 8:CB:2145:C:H3'    | 8:CB:2146:C:H5'   | 1.82                     | 0.60              |
| 8:CB:2760:C:H2'    | 8:CB:2760:C:O2    | 2.01                     | 0.60              |
| 9:CC:49:THR:HG22   | 9:CC:50:THR:N     | 2.15                     | 0.60              |
| 9:CC:254:LYS:NZ    | 9:CC:254:LYS:N    | 2.50                     | 0.60              |
| 10:CD:48:ILE:N     | 10:CD:80:TRP:HB3  | 2.15                     | 0.60              |
| 11:CE:9:GLN:HG3    | 11:CE:10:SER:H    | 1.66                     | 0.60              |
| 12:CF:2:LYS:O      | 12:CF:3:LEU:HB2   | 1.99                     | 0.60              |
| 13:CG:121:THR:HG22 | 13:CG:122:ALA:N   | 2.17                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:CJ:81:ILE:C    | 16:CJ:83:GLY:N    | 2.54                     | 0.60              |
| 17:CK:78:ARG:NH2  | 22:CP:102:ARG:NH1 | 2.45                     | 0.60              |
| 19:CM:13:HIS:C    | 19:CM:14:LYS:HD2  | 2.21                     | 0.60              |
| 19:CM:103:TYR:CE2 | 19:CM:113:ALA:HB2 | 2.36                     | 0.60              |
| 22:CP:92:ARG:HE   | 22:CP:110:LYS:C   | 2.05                     | 0.60              |
| 24:CR:39:LEU:CD1  | 24:CR:57:GLY:HA3  | 2.30                     | 0.60              |
| 25:CS:20:VAL:O    | 25:CS:22:ASP:N    | 2.33                     | 0.60              |
| 27:CU:3:LYS:HD3   | 27:CU:81:ARG:HD2  | 1.81                     | 0.60              |
| 32:CZ:17:SER:N    | 32:CZ:21:VAL:HG21 | 2.17                     | 0.60              |
| 33:DA:7:A:H5'     | 33:DA:8:A:OP2     | 2.00                     | 0.60              |
| 33:DA:350:G:C5'   | 33:DA:350:G:C8    | 2.83                     | 0.60              |
| 33:DA:437:U:O2'   | 36:DD:119:HIS:CD2 | 2.54                     | 0.60              |
| 33:DA:500:G:H5''  | 44:DL:120:ARG:CZ  | 2.32                     | 0.60              |
| 33:DA:562:U:N3    | 33:DA:884:U:H5    | 1.98                     | 0.60              |
| 33:DA:620:C:C2'   | 33:DA:621:A:H5'   | 2.31                     | 0.60              |
| 33:DA:685:G:C2    | 33:DA:686:U:O4    | 2.54                     | 0.60              |
| 33:DA:709:U:O2'   | 33:DA:710:G:H5'   | 2.02                     | 0.60              |
| 33:DA:750:C:H3'   | 33:DA:750:C:C6    | 2.37                     | 0.60              |
| 33:DA:768:A:C5    | 33:DA:769:G:C8    | 2.89                     | 0.60              |
| 33:DA:894:G:O2'   | 33:DA:895:G:H5'   | 2.02                     | 0.60              |
| 33:DA:954:G:H8    | 33:DA:954:G:O5'   | 1.84                     | 0.60              |
| 33:DA:1079:G:C6   | 33:DA:1080:A:N1   | 2.69                     | 0.60              |
| 33:DA:1295:U:C2   | 33:DA:1296:C:C5   | 2.90                     | 0.60              |
| 35:DC:5:HIS:HD2   | 35:DC:7:ASN:HB3   | 1.66                     | 0.60              |
| 36:DD:28:ASP:CG   | 36:DD:33:ILE:HB   | 2.22                     | 0.60              |
| 41:DI:83:THR:OG1  | 41:DI:97:LEU:HD13 | 2.02                     | 0.60              |
| 52:DT:7:LYS:O     | 52:DT:10:ALA:N    | 2.28                     | 0.60              |
| 1:A0:29:VAL:HG23  | 1:A0:36:LYS:CD    | 2.31                     | 0.60              |
| 4:A3:15:LYS:HE2   | 4:A3:21:PHE:HE1   | 1.67                     | 0.60              |
| 8:AB:83:A:H61     | 8:AB:101:A:H4'    | 1.66                     | 0.60              |
| 8:AB:85:G:P       | 27:AU:5:ARG:HG3   | 2.42                     | 0.60              |
| 8:AB:280:U:O4     | 8:AB:361:G:N2     | 2.35                     | 0.60              |
| 8:AB:308:G:N1     | 8:AB:309:A:C2     | 2.70                     | 0.60              |
| 8:AB:313:G:H8     | 8:AB:313:G:H5'    | 1.66                     | 0.60              |
| 8:AB:358:U:H2'    | 8:AB:359:G:O4'    | 2.00                     | 0.60              |
| 8:AB:527:C:H5''   | 8:AB:2779:U:O2    | 2.02                     | 0.60              |
| 8:AB:538:A:O2'    | 8:AB:539:G:H5'    | 2.01                     | 0.60              |
| 8:AB:592:A:H2'    | 8:AB:593:U:C6     | 2.36                     | 0.60              |
| 8:AB:738:G:N1     | 8:AB:739:A:C2     | 2.70                     | 0.60              |
| 8:AB:1003:G:H2'   | 8:AB:1010:A:N1    | 2.16                     | 0.60              |
| 8:AB:1035:U:O2'   | 8:AB:1036:G:H5'   | 2.01                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1190:G:OP1   | 18:AL:41:ARG:CZ   | 2.49                     | 0.60              |
| 8:AB:1264:A:N6    | 8:AB:1265:A:C6    | 2.69                     | 0.60              |
| 8:AB:1392:A:C5    | 8:AB:1393:A:N6    | 2.69                     | 0.60              |
| 8:AB:1567:G:C5    | 9:AC:82:TYR:HD2   | 2.20                     | 0.60              |
| 8:AB:1651:G:N2    | 8:AB:2007:U:C2    | 2.69                     | 0.60              |
| 8:AB:1672:A:N6    | 8:AB:1673:G:C6    | 2.70                     | 0.60              |
| 8:AB:1960:A:N7    | 8:AB:1961:C:C5    | 2.70                     | 0.60              |
| 8:AB:2061:G:C4    | 8:AB:2063:C:N4    | 2.69                     | 0.60              |
| 8:AB:2089:C:N4    | 8:AB:2090:A:N6    | 2.50                     | 0.60              |
| 8:AB:2547:A:C2    | 8:AB:2548:U:N3    | 2.70                     | 0.60              |
| 9:AC:22:GLU:HB2   | 9:AC:202:ARG:CG   | 2.24                     | 0.60              |
| 9:AC:143:VAL:CB   | 9:AC:152:GLN:HG3  | 2.32                     | 0.60              |
| 11:AE:173:THR:CA  | 11:AE:200:LEU:HB3 | 2.31                     | 0.60              |
| 18:AL:29:LYS:HG2  | 18:AL:30:THR:H    | 1.67                     | 0.60              |
| 25:AS:4:ILE:HG22  | 25:AS:5:ALA:H     | 1.66                     | 0.60              |
| 27:AU:94:PHE:CE2  | 27:AU:100:GLU:HA  | 2.37                     | 0.60              |
| 28:AV:51:GLN:HA   | 28:AV:56:PHE:CD1  | 2.36                     | 0.60              |
| 28:AV:70:ILE:CD1  | 28:AV:71:LYS:H    | 2.14                     | 0.60              |
| 30:AX:28:LEU:HA   | 30:AX:33:ALA:O    | 2.01                     | 0.60              |
| 33:BA:25:C:H2'    | 33:BA:26:A:H8     | 1.66                     | 0.60              |
| 33:BA:40:C:H2'    | 33:BA:41:G:H8     | 1.67                     | 0.60              |
| 33:BA:77:A:H3'    | 33:BA:77:A:H8     | 1.67                     | 0.60              |
| 33:BA:243:A:C5    | 33:BA:245:U:O4    | 2.55                     | 0.60              |
| 33:BA:413:G:O2'   | 33:BA:428:G:N2    | 2.35                     | 0.60              |
| 33:BA:428:G:C8    | 33:BA:430:A:C4    | 2.89                     | 0.60              |
| 33:BA:724:G:H5'   | 33:BA:724:G:C8    | 2.34                     | 0.60              |
| 33:BA:803:G:N7    | 33:BA:804:U:C5    | 2.70                     | 0.60              |
| 33:BA:1029:U:H6   | 33:BA:1029:U:H3'  | 1.67                     | 0.60              |
| 33:BA:1098:C:N3   | 33:BA:1099:G:N7   | 2.50                     | 0.60              |
| 33:BA:1219:A:OP1  | 46:BN:52:ARG:HG2  | 2.02                     | 0.60              |
| 33:BA:1399:C:C5   | 33:BA:1502:A:N1   | 2.70                     | 0.60              |
| 33:BA:1471:U:C3'  | 33:BA:1472:U:H5'' | 2.28                     | 0.60              |
| 33:BA:1521:C:H2'  | 33:BA:1522:U:H6   | 1.66                     | 0.60              |
| 33:BA:1532:U:O4   | 33:BA:1534:A:H5'' | 2.01                     | 0.60              |
| 40:BH:30:LYS:NZ   | 40:BH:30:LYS:HA   | 2.17                     | 0.60              |
| 40:BH:68:LYS:HG3  | 40:BH:72:GLU:OE2  | 2.00                     | 0.60              |
| 41:BI:6:TYR:C     | 41:BI:85:ALA:HB2  | 2.21                     | 0.60              |
| 44:BL:20:VAL:HG13 | 44:BL:94:TYR:HE1  | 1.67                     | 0.60              |
| 48:BP:50:THR:HG22 | 48:BP:51:ARG:N    | 2.16                     | 0.60              |
| 51:BS:51:HIS:CD2  | 51:BS:56:HIS:CE1  | 2.89                     | 0.60              |
| 4:C3:4:LYS:HG3    | 4:C3:4:LYS:O      | 2.01                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:C3:5:THR:HG22   | 4:C3:58:ILE:O     | 2.02                     | 0.60              |
| 7:CA:31:C:HO2'    | 7:CA:32:U:H6      | 1.49                     | 0.60              |
| 8:CB:573:U:O4     | 8:CB:2030:A:H3'   | 2.02                     | 0.60              |
| 8:CB:636:G:O6     | 18:CL:109:LYS:HD2 | 2.01                     | 0.60              |
| 8:CB:672:C:C4     | 8:CB:809:G:N2     | 2.69                     | 0.60              |
| 8:CB:690:G:C5     | 8:CB:691:C:C5     | 2.89                     | 0.60              |
| 8:CB:734:A:C5     | 8:CB:735:A:C8     | 2.90                     | 0.60              |
| 8:CB:802:A:C5     | 8:CB:803:U:C4     | 2.90                     | 0.60              |
| 8:CB:1225:G:OP1   | 24:CR:90:ARG:CZ   | 2.50                     | 0.60              |
| 8:CB:1824:G:H1'   | 9:CC:247:TRP:CZ3  | 2.32                     | 0.60              |
| 8:CB:1922:G:H2'   | 8:CB:1923:U:O4'   | 2.02                     | 0.60              |
| 8:CB:2044:C:N3    | 8:CB:2045:C:C5    | 2.69                     | 0.60              |
| 8:CB:2213:U:O2    | 8:CB:2213:U:C3'   | 2.43                     | 0.60              |
| 8:CB:2330:G:C1'   | 29:CW:36:ILE:HD13 | 2.26                     | 0.60              |
| 8:CB:2338:C:H2'   | 8:CB:2339:C:C6    | 2.37                     | 0.60              |
| 8:CB:2525:G:C2    | 8:CB:2539:C:N3    | 2.69                     | 0.60              |
| 8:CB:2698:U:H3    | 8:CB:2699:C:N4    | 2.00                     | 0.60              |
| 8:CB:2740:A:C8    | 8:CB:2764:A:C6    | 2.90                     | 0.60              |
| 8:CB:2742:G:C6    | 8:CB:2763:G:N2    | 2.70                     | 0.60              |
| 8:CB:2794:C:H2'   | 8:CB:2795:C:H6    | 1.65                     | 0.60              |
| 55:CB:5468:HOH:O  | 9:CC:224:MET:HB2  | 2.02                     | 0.60              |
| 9:CC:21:PRO:C     | 9:CC:202:ARG:NE   | 2.55                     | 0.60              |
| 10:CD:11:MET:O    | 10:CD:23:PRO:CD   | 2.46                     | 0.60              |
| 10:CD:13:ARG:HB2  | 10:CD:21:SER:OG   | 2.01                     | 0.60              |
| 10:CD:153:GLY:C   | 10:CD:155:VAL:N   | 2.53                     | 0.60              |
| 16:CJ:3:THR:O     | 16:CJ:4:PHE:HD2   | 1.85                     | 0.60              |
| 18:CL:73:ILE:HG22 | 18:CL:75:ALA:CA   | 2.32                     | 0.60              |
| 18:CL:81:ASP:O    | 18:CL:84:LYS:HB3  | 2.02                     | 0.60              |
| 19:CM:8:LYS:HD3   | 19:CM:9:PHE:CE1   | 2.37                     | 0.60              |
| 22:CP:15:ASP:O    | 22:CP:16:VAL:HG13 | 2.00                     | 0.60              |
| 22:CP:42:PHE:CD1  | 22:CP:42:PHE:O    | 2.54                     | 0.60              |
| 28:CV:65:VAL:O    | 28:CV:67:GLY:N    | 2.33                     | 0.60              |
| 29:CW:45:HIS:O    | 29:CW:77:LYS:HE2  | 2.02                     | 0.60              |
| 31:CY:7:THR:HG22  | 31:CY:34:THR:HB   | 1.84                     | 0.60              |
| 33:DA:126:G:O4'   | 33:DA:634:C:O2'   | 2.19                     | 0.60              |
| 33:DA:251:G:H4'   | 33:DA:252:U:O5'   | 2.01                     | 0.60              |
| 33:DA:566:G:H5'   | 33:DA:566:G:H8    | 1.66                     | 0.60              |
| 33:DA:675:A:C2    | 33:DA:676:A:C8    | 2.90                     | 0.60              |
| 33:DA:943:U:O2'   | 33:DA:944:G:H5'   | 2.01                     | 0.60              |
| 33:DA:995:C:H2'   | 33:DA:996:A:H5'   | 1.83                     | 0.60              |
| 33:DA:1352:C:H2'  | 33:DA:1353:G:C8   | 2.37                     | 0.60              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:1360:A:H2'   | 33:DA:1361:G:O4'  | 2.02                     | 0.60              |
| 34:DB:202:ASN:HD22 | 34:DB:203:ASP:N   | 1.99                     | 0.60              |
| 38:DF:2:ARG:HD3    | 38:DF:91:ARG:HB2  | 1.84                     | 0.60              |
| 38:DF:36:ILE:HA    | 38:DF:64:VAL:HG13 | 1.84                     | 0.60              |
| 38:DF:100:SER:N    | 50:DR:23:LYS:HZ3  | 1.99                     | 0.60              |
| 40:DH:107:LYS:HA   | 40:DH:107:LYS:HZ2 | 1.66                     | 0.60              |
| 41:DI:49:GLN:H     | 41:DI:50:PRO:HD2  | 1.65                     | 0.60              |
| 43:DK:15:VAL:HG23  | 43:DK:16:SER:H    | 1.65                     | 0.60              |
| 43:DK:96:ILE:O     | 43:DK:98:ALA:N    | 2.35                     | 0.60              |
| 5:A4:30:GLU:OE1    | 5:A4:32:LYS:HB2   | 2.01                     | 0.60              |
| 5:A4:37:GLN:HE22   | 8:AB:1124:G:H1'   | 1.67                     | 0.60              |
| 8:AB:108:G:H2'     | 8:AB:109:C:H6     | 1.66                     | 0.60              |
| 8:AB:396:G:H4'     | 32:AZ:28:VAL:CG2  | 2.30                     | 0.60              |
| 8:AB:574:A:H4'     | 8:AB:575:A:C5'    | 2.31                     | 0.60              |
| 8:AB:690:G:H4'     | 9:AC:216:ARG:HH22 | 1.67                     | 0.60              |
| 8:AB:695:G:C2      | 8:AB:696:G:C8     | 2.89                     | 0.60              |
| 8:AB:970:U:H2'     | 8:AB:971:G:C8     | 2.36                     | 0.60              |
| 8:AB:988:A:OP1     | 31:AY:11:SER:HA   | 2.01                     | 0.60              |
| 8:AB:1269:A:OP2    | 55:AB:4458:HOH:O  | 2.17                     | 0.60              |
| 8:AB:1275:A:N7     | 20:AN:16:HIS:ND1  | 2.49                     | 0.60              |
| 8:AB:1387:A:H2'    | 8:AB:1388:G:C8    | 2.37                     | 0.60              |
| 8:AB:1413:A:H8     | 8:AB:1413:A:O5'   | 1.83                     | 0.60              |
| 8:AB:1445:G:C2     | 8:AB:1446:C:C2    | 2.90                     | 0.60              |
| 8:AB:2590:A:OP2    | 9:AC:224:MET:HE3  | 2.02                     | 0.60              |
| 8:AB:2593:U:C2'    | 8:AB:2594:C:H5''  | 2.32                     | 0.60              |
| 9:AC:153:LEU:O     | 9:AC:153:LEU:CG   | 2.49                     | 0.60              |
| 10:AD:1:MET:H1     | 10:AD:81:GLU:HB3  | 1.67                     | 0.60              |
| 10:AD:52:THR:HG22  | 10:AD:53:GLY:N    | 2.17                     | 0.60              |
| 11:AE:189:THR:C    | 11:AE:191:ASP:N   | 2.55                     | 0.60              |
| 15:AI:14:ALA:CB    | 15:AI:50:LYS:HA   | 2.31                     | 0.60              |
| 15:AI:20:SER:O     | 15:AI:25:PRO:HD2  | 2.02                     | 0.60              |
| 16:AJ:85:LYS:HA    | 16:AJ:85:LYS:NZ   | 2.16                     | 0.60              |
| 17:AK:106:GLU:C    | 17:AK:108:ARG:H   | 2.05                     | 0.60              |
| 18:AL:14:LYS:O     | 18:AL:15:ALA:HB2  | 2.02                     | 0.60              |
| 26:AT:15:HIS:H     | 26:AT:31:VAL:CG2  | 2.13                     | 0.60              |
| 28:AV:13:GLY:O     | 28:AV:14:LYS:C    | 2.40                     | 0.60              |
| 30:AX:14:LEU:HD13  | 30:AX:57:LEU:HD13 | 1.84                     | 0.60              |
| 33:BA:59:A:C6      | 33:BA:354:G:C6    | 2.89                     | 0.60              |
| 33:BA:564:C:H2'    | 33:BA:565:U:O4'   | 2.02                     | 0.60              |
| 33:BA:633:G:O2'    | 33:BA:634:C:H5'   | 2.02                     | 0.60              |
| 33:BA:988:G:N2     | 33:BA:1218:C:C2   | 2.70                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1049:U:C2'   | 46:BN:2:LYS:HE3    | 2.32                     | 0.60              |
| 33:BA:1490:U:H5''  | 33:BA:1490:U:H6    | 1.67                     | 0.60              |
| 34:BB:165:ALA:HB3  | 34:BB:190:SER:HB3  | 1.84                     | 0.60              |
| 36:BD:78:ALA:C     | 36:BD:85:THR:HG23  | 2.22                     | 0.60              |
| 36:BD:104:MET:SD   | 36:BD:179:GLY:HA3  | 2.40                     | 0.60              |
| 37:BE:156:ARG:NH1  | 40:BH:44:PHE:CE2   | 2.69                     | 0.60              |
| 39:BG:92:PRO:HA    | 39:BG:95:ARG:HB2   | 1.83                     | 0.60              |
| 42:BJ:14:ASP:HA    | 42:BJ:70:HIS:NE2   | 2.15                     | 0.60              |
| 45:BM:92:ARG:HB3   | 45:BM:92:ARG:HH11  | 1.65                     | 0.60              |
| 3:C2:16:HIS:HA     | 3:C2:21:ARG:HH12   | 1.67                     | 0.60              |
| 7:CA:11:C:C2'      | 7:CA:12:C:H5'      | 2.32                     | 0.60              |
| 8:CB:801:G:H3'     | 8:CB:802:A:H5''    | 1.84                     | 0.60              |
| 8:CB:993:G:C2      | 8:CB:994:C:C5      | 2.84                     | 0.60              |
| 8:CB:1281:G:H1     | 8:CB:1286:A:H62    | 1.48                     | 0.60              |
| 8:CB:1419:A:N7     | 8:CB:1421:G:C6     | 2.69                     | 0.60              |
| 8:CB:1670:C:C4     | 8:CB:1671:U:N3     | 2.70                     | 0.60              |
| 8:CB:1812:U:O2'    | 9:CC:45:ASN:HB2    | 2.02                     | 0.60              |
| 8:CB:1877:A:H2'    | 8:CB:1878:G:O4'    | 2.02                     | 0.60              |
| 10:CD:3:GLY:O      | 10:CD:4:LEU:CB     | 2.49                     | 0.60              |
| 11:CE:172:ALA:O    | 11:CE:173:THR:HG22 | 2.02                     | 0.60              |
| 13:CG:171:LYS:HZ1  | 13:CG:173:ALA:HA   | 1.66                     | 0.60              |
| 16:CJ:21:THR:HG22  | 16:CJ:58:ASN:OD1   | 2.01                     | 0.60              |
| 22:CP:9:GLN:HB3    | 22:CP:56:SER:CB    | 2.30                     | 0.60              |
| 23:CQ:23:TYR:HB2   | 23:CQ:28:SER:OG    | 2.02                     | 0.60              |
| 23:CQ:40:LYS:HB2   | 23:CQ:40:LYS:HZ2   | 1.67                     | 0.60              |
| 23:CQ:41:ALA:O     | 23:CQ:45:ALA:HB3   | 2.02                     | 0.60              |
| 23:CQ:49:ARG:HG3   | 24:CR:77:PHE:CE1   | 2.33                     | 0.60              |
| 26:CT:57:VAL:O     | 26:CT:85:VAL:HA    | 2.02                     | 0.60              |
| 30:CX:17:GLU:C     | 30:CX:18:LEU:HD13  | 2.22                     | 0.60              |
| 33:DA:345:C:O4'    | 33:DA:346:G:C2     | 2.55                     | 0.60              |
| 33:DA:573:A:C6     | 33:DA:574:A:N6     | 2.69                     | 0.60              |
| 33:DA:577:G:C8     | 33:DA:816:A:N1     | 2.69                     | 0.60              |
| 33:DA:669:G:C2     | 33:DA:670:G:C8     | 2.90                     | 0.60              |
| 33:DA:685:G:O4'    | 43:DK:40:ALA:HB3   | 2.00                     | 0.60              |
| 33:DA:799:G:H5''   | 33:DA:799:G:C8     | 2.33                     | 0.60              |
| 33:DA:833:G:H8     | 33:DA:833:G:O5'    | 1.84                     | 0.60              |
| 33:DA:963:G:H1     | 33:DA:972:C:N4     | 1.93                     | 0.60              |
| 33:DA:1104:G:C2    | 33:DA:1105:A:C5    | 2.89                     | 0.60              |
| 33:DA:1314:C:C5    | 51:DS:5:LYS:HE2    | 2.36                     | 0.60              |
| 34:DB:116:LEU:HD23 | 34:DB:119:GLN:HG3  | 1.82                     | 0.60              |
| 37:DE:23:THR:HA    | 37:DE:28:ARG:HA    | 1.83                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:DJ:78:GLU:O     | 42:DJ:80:THR:HG23  | 2.02                     | 0.60              |
| 1:A0:53:VAL:HG12   | 1:A0:54:ILE:HG12   | 1.83                     | 0.60              |
| 2:A1:10:LEU:HG     | 2:A1:12:SER:OG     | 2.02                     | 0.60              |
| 4:A3:29:ARG:NH1    | 8:AB:2393:U:OP2    | 2.35                     | 0.60              |
| 8:AB:26:G:H1'      | 8:AB:514:A:N6      | 2.17                     | 0.60              |
| 8:AB:55:G:C2       | 8:AB:56:A:C8       | 2.90                     | 0.60              |
| 8:AB:442:G:N3      | 11:AE:44:ARG:HG3   | 2.17                     | 0.60              |
| 8:AB:673:C:C2      | 8:AB:808:G:N2      | 2.70                     | 0.60              |
| 8:AB:777:G:H5''    | 8:AB:777:G:C8      | 2.35                     | 0.60              |
| 8:AB:1129:A:C4     | 8:AB:2570:G:H1'    | 2.37                     | 0.60              |
| 8:AB:1291:C:H2'    | 8:AB:1292:G:O4'    | 2.02                     | 0.60              |
| 8:AB:1586:A:C8     | 8:AB:1586:A:H3'    | 2.37                     | 0.60              |
| 8:AB:1668:A:N3     | 8:AB:1670:C:C4     | 2.70                     | 0.60              |
| 8:AB:1768:C:C6     | 8:AB:1768:C:C3'    | 2.85                     | 0.60              |
| 8:AB:1907:G:N2     | 8:AB:1924:C:H1'    | 2.17                     | 0.60              |
| 8:AB:2197:U:H1'    | 8:AB:2198:A:H2'    | 1.82                     | 0.60              |
| 8:AB:2290:G:C4     | 8:AB:2291:U:C5     | 2.90                     | 0.60              |
| 8:AB:2743:U:H6     | 8:AB:2744:G:H5''   | 1.67                     | 0.60              |
| 9:AC:42:ARG:CG     | 9:AC:43:ASN:H      | 2.05                     | 0.60              |
| 10:AD:149:ASN:C    | 10:AD:150:GLN:HG2  | 2.21                     | 0.60              |
| 12:AF:52:ALA:HB1   | 12:AF:148:VAL:HG11 | 1.83                     | 0.60              |
| 15:AI:76:ALA:O     | 15:AI:80:LYS:HE2   | 2.02                     | 0.60              |
| 16:AJ:100:VAL:HG13 | 16:AJ:101:ILE:HG12 | 1.84                     | 0.60              |
| 16:AJ:136:GLN:N    | 16:AJ:137:PRO:CD   | 2.65                     | 0.60              |
| 18:AL:106:GLU:HG2  | 18:AL:107:PHE:H    | 1.66                     | 0.60              |
| 20:AN:65:LEU:HD23  | 20:AN:69:ARG:NH2   | 2.16                     | 0.60              |
| 29:AW:36:ILE:CG2   | 29:AW:69:GLU:OE2   | 2.50                     | 0.60              |
| 30:AX:4:LYS:HA     | 30:AX:7:ARG:HE     | 1.65                     | 0.60              |
| 33:BA:60:A:C8      | 33:BA:60:A:OP2     | 2.55                     | 0.60              |
| 33:BA:515:G:C2'    | 33:BA:516:U:H5'    | 2.32                     | 0.60              |
| 33:BA:543:U:H2'    | 33:BA:544:G:C8     | 2.37                     | 0.60              |
| 33:BA:797:C:C2'    | 33:BA:798:U:H5'    | 2.31                     | 0.60              |
| 33:BA:805:C:H2'    | 33:BA:805:C:O2     | 2.02                     | 0.60              |
| 33:BA:1368:A:OP2   | 41:BI:113:LYS:HD3  | 2.02                     | 0.60              |
| 34:BB:14:HIS:HB2   | 34:BB:202:ASN:CB   | 2.31                     | 0.60              |
| 35:BC:21:TRP:CE2   | 46:BN:93:PRO:HB3   | 2.36                     | 0.60              |
| 38:BF:36:ILE:HG12  | 38:BF:64:VAL:HG13  | 1.82                     | 0.60              |
| 42:BJ:80:THR:HG22  | 42:BJ:81:GLU:H     | 1.65                     | 0.60              |
| 46:BN:62:ARG:HH11  | 46:BN:69:PRO:HD3   | 1.67                     | 0.60              |
| 49:BQ:20:ILE:HD11  | 49:BQ:47:ASP:HB3   | 1.83                     | 0.60              |
| 7:CA:72:G:H1'      | 7:CA:105:G:H22     | 1.67                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:543:G:H2'    | 8:CB:545:U:OP1     | 2.02                     | 0.60              |
| 8:CB:993:G:H1'    | 24:CR:93:PHE:CE1   | 2.36                     | 0.60              |
| 8:CB:1021:A:C8    | 8:CB:1021:A:C3'    | 2.85                     | 0.60              |
| 8:CB:1289:C:C2    | 8:CB:1290:C:C5     | 2.90                     | 0.60              |
| 8:CB:1429:G:C8    | 8:CB:1568:G:C8     | 2.90                     | 0.60              |
| 8:CB:1566:A:C2    | 9:CC:213:ARG:HG2   | 2.37                     | 0.60              |
| 8:CB:2105:U:O2    | 8:CB:2106:U:C4     | 2.55                     | 0.60              |
| 8:CB:2405:G:H2'   | 8:CB:2411:A:H62    | 1.63                     | 0.60              |
| 11:CE:194:LYS:HZ2 | 11:CE:194:LYS:HB2  | 1.67                     | 0.60              |
| 13:CG:34:ARG:HE   | 13:CG:70:LEU:HD21  | 1.66                     | 0.60              |
| 16:CJ:4:PHE:CE1   | 16:CJ:6:ALA:HA     | 2.36                     | 0.60              |
| 16:CJ:89:PHE:CD2  | 16:CJ:92:MET:HB2   | 2.36                     | 0.60              |
| 17:CK:21:CYS:SG   | 17:CK:39:ILE:HD11  | 2.42                     | 0.60              |
| 23:CQ:46:TYR:OH   | 24:CR:89:HIS:CG    | 2.54                     | 0.60              |
| 24:CR:4:VAL:HA    | 24:CR:43:ASN:OD1   | 2.01                     | 0.60              |
| 33:DA:764:C:H2'   | 33:DA:765:G:H5'    | 1.84                     | 0.60              |
| 33:DA:935:A:C2    | 33:DA:936:C:C4     | 2.90                     | 0.60              |
| 33:DA:1058:G:H5'' | 35:DC:198:LYS:HE3  | 1.83                     | 0.60              |
| 33:DA:1266:G:N2   | 33:DA:1270:G:C6    | 2.70                     | 0.60              |
| 33:DA:1459:G:C6   | 33:DA:1460:C:C4    | 2.89                     | 0.60              |
| 33:DA:1494:G:C6   | 33:DA:1495:U:C5    | 2.90                     | 0.60              |
| 48:DP:4:ILE:O     | 48:DP:71:VAL:HG21  | 2.02                     | 0.60              |
| 53:DU:20:ARG:HD2  | 53:DU:20:ARG:H     | 1.66                     | 0.60              |
| 1:A0:13:GLY:O     | 1:A0:17:SER:N      | 2.34                     | 0.60              |
| 8:AB:83:A:H2'     | 8:AB:84:A:C8       | 2.37                     | 0.60              |
| 8:AB:322:A:H5'    | 8:AB:340:A:H1'     | 1.84                     | 0.60              |
| 8:AB:449:A:H2'    | 8:AB:450:G:H5'     | 1.84                     | 0.60              |
| 8:AB:1048:A:C8    | 8:AB:1049:C:H5     | 2.20                     | 0.60              |
| 8:AB:1771:C:N3    | 8:AB:1772:A:N7     | 2.49                     | 0.60              |
| 8:AB:2064:C:H1'   | 8:AB:2450:A:C6     | 2.37                     | 0.60              |
| 8:AB:2529:G:H5'   | 8:AB:2530:A:H5''   | 1.83                     | 0.60              |
| 8:AB:2884:U:H3'   | 8:AB:2884:U:C6     | 2.36                     | 0.60              |
| 10:AD:135:GLY:C   | 10:AD:137:SER:H    | 2.05                     | 0.60              |
| 11:AE:81:GLY:HA3  | 55:AE:403:HOH:O    | 2.00                     | 0.60              |
| 11:AE:138:LEU:HG  | 11:AE:141:MET:HE2  | 1.84                     | 0.60              |
| 13:AG:64:ALA:HA   | 13:AG:67:ALA:HB3   | 1.83                     | 0.60              |
| 13:AG:162:ARG:NH2 | 13:AG:168:VAL:HG11 | 2.16                     | 0.60              |
| 14:AH:89:LYS:CE   | 14:AH:123:ARG:HH11 | 2.15                     | 0.60              |
| 16:AJ:45:THR:CA   | 23:AQ:63:ARG:HH21  | 2.15                     | 0.60              |
| 18:AL:110:VAL:C   | 18:AL:111:ILE:HG23 | 2.23                     | 0.60              |
| 22:AP:110:LYS:HA  | 22:AP:110:LYS:HE2  | 1.84                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 23:AQ:4:LYS:HB2   | 23:AQ:4:LYS:HZ2   | 1.67                     | 0.60              |
| 23:AQ:64:ILE:HD11 | 23:AQ:92:LYS:HB3  | 1.84                     | 0.60              |
| 29:AW:38:ARG:CG   | 29:AW:39:GLN:N    | 2.55                     | 0.60              |
| 32:AZ:30:HIS:HB2  | 32:AZ:48:GLN:HG2  | 1.84                     | 0.60              |
| 33:BA:36:C:H4'    | 44:BL:118:VAL:O   | 2.01                     | 0.60              |
| 33:BA:38:G:C2     | 33:BA:397:A:N3    | 2.70                     | 0.60              |
| 33:BA:651:C:H2'   | 33:BA:652:U:C6    | 2.34                     | 0.60              |
| 33:BA:683:G:C5    | 33:BA:684:U:C5    | 2.90                     | 0.60              |
| 34:BB:45:THR:HG22 | 34:BB:49:PHE:HE1  | 1.64                     | 0.60              |
| 35:BC:120:THR:O   | 35:BC:124:GLU:N   | 2.35                     | 0.60              |
| 7:CA:104:A:N3     | 7:CA:105:G:H1'    | 2.17                     | 0.60              |
| 8:CB:215:G:C4'    | 8:CB:216:A:H4'    | 2.32                     | 0.60              |
| 8:CB:370:G:H8     | 8:CB:370:G:OP2    | 1.84                     | 0.60              |
| 8:CB:423:A:H5''   | 8:CB:424:G:H5''   | 1.83                     | 0.60              |
| 8:CB:783:A:C8     | 8:CB:784:G:H4'    | 2.35                     | 0.60              |
| 8:CB:874:G:C2     | 8:CB:875:G:H1'    | 2.37                     | 0.60              |
| 8:CB:970:U:H2'    | 8:CB:971:G:C8     | 2.35                     | 0.60              |
| 8:CB:978:G:C6     | 8:CB:986:C:C4     | 2.89                     | 0.60              |
| 8:CB:1256:G:N3    | 8:CB:1257:C:C5    | 2.70                     | 0.60              |
| 8:CB:1806:C:H3'   | 8:CB:1806:C:C6    | 2.34                     | 0.60              |
| 8:CB:1839:G:H2'   | 8:CB:1840:G:H5'   | 1.84                     | 0.60              |
| 8:CB:1965:C:C4    | 8:CB:1966:A:C5    | 2.89                     | 0.60              |
| 8:CB:1970:A:O4'   | 8:CB:1972:G:C8    | 2.55                     | 0.60              |
| 8:CB:1989:G:H2'   | 8:CB:1990:C:C5'   | 2.32                     | 0.60              |
| 8:CB:2064:C:H1'   | 8:CB:2450:A:C6    | 2.37                     | 0.60              |
| 8:CB:2107:G:H2'   | 8:CB:2108:A:C8    | 2.37                     | 0.60              |
| 8:CB:2186:G:C6    | 8:CB:2187:U:C2    | 2.90                     | 0.60              |
| 8:CB:2502:G:H5'   | 8:CB:2503:A:C5'   | 2.32                     | 0.60              |
| 8:CB:2514:U:H2'   | 8:CB:2515:C:C6    | 2.36                     | 0.60              |
| 9:CC:179:GLU:CD   | 9:CC:267:VAL:HG23 | 2.21                     | 0.60              |
| 10:CD:191:GLY:O   | 10:CD:192:ALA:HB3 | 2.02                     | 0.60              |
| 12:CF:69:ALA:O    | 12:CF:70:ARG:HG3  | 2.02                     | 0.60              |
| 15:CI:78:LEU:HA   | 15:CI:81:LYS:HE2  | 1.84                     | 0.60              |
| 16:CJ:94:ALA:C    | 16:CJ:97:PRO:HG3  | 2.23                     | 0.60              |
| 16:CJ:131:ASN:C   | 16:CJ:133:ALA:H   | 2.04                     | 0.60              |
| 16:CJ:135:GLN:O   | 16:CJ:136:GLN:C   | 2.40                     | 0.60              |
| 20:CN:7:GLY:HA3   | 20:CN:8:ARG:NH1   | 2.16                     | 0.60              |
| 20:CN:16:HIS:O    | 20:CN:17:ARG:C    | 2.38                     | 0.60              |
| 20:CN:100:CYS:SG  | 20:CN:112:TYR:CE2 | 2.94                     | 0.60              |
| 24:CR:80:ARG:HD2  | 24:CR:86:GLN:H    | 1.66                     | 0.60              |
| 33:DA:32:A:H2'    | 33:DA:32:A:N3     | 2.17                     | 0.60              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:393:A:C5    | 33:DA:394:G:C8     | 2.90                     | 0.60              |
| 33:DA:455:G:C2    | 33:DA:478:A:N1     | 2.70                     | 0.60              |
| 33:DA:1284:C:C4   | 33:DA:1285:A:N7    | 2.70                     | 0.60              |
| 33:DA:1508:A:C2   | 33:DA:1509:C:C6    | 2.90                     | 0.60              |
| 40:DH:38:VAL:O    | 40:DH:39:LEU:HD13  | 2.02                     | 0.60              |
| 42:DJ:37:ARG:HG2  | 42:DJ:37:ARG:HH11  | 1.67                     | 0.60              |
| 44:DL:86:VAL:HG12 | 44:DL:88:ASP:H     | 1.67                     | 0.60              |
| 46:DN:60:ARG:HH21 | 46:DN:70:HIS:CE1   | 2.18                     | 0.60              |
| 50:DR:70:THR:HB   | 50:DR:72:ARG:HH21  | 1.67                     | 0.60              |
| 51:DS:22:VAL:HG13 | 51:DS:42:ASN:OD1   | 2.02                     | 0.60              |
| 52:DT:23:ARG:O    | 52:DT:26:MET:HB3   | 2.02                     | 0.60              |
| 3:A2:19:ARG:CG    | 3:A2:20:ALA:N      | 2.54                     | 0.59              |
| 7:AA:113:C:O2'    | 21:AO:47:VAL:HA    | 2.02                     | 0.59              |
| 8:AB:8:C:H42      | 8:AB:2895:G:H1     | 1.50                     | 0.59              |
| 8:AB:356:G:C5     | 8:AB:357:C:C5      | 2.90                     | 0.59              |
| 8:AB:365:U:H2'    | 8:AB:366:C:C6      | 2.37                     | 0.59              |
| 8:AB:564:C:H2'    | 8:AB:565:C:H6      | 1.67                     | 0.59              |
| 8:AB:580:U:H2'    | 8:AB:581:C:C6      | 2.30                     | 0.59              |
| 8:AB:682:G:O2'    | 8:AB:683:U:H5'     | 2.02                     | 0.59              |
| 8:AB:773:U:O2     | 8:AB:773:U:H2'     | 2.01                     | 0.59              |
| 8:AB:1134:A:O5'   | 8:AB:1134:A:H2'    | 2.02                     | 0.59              |
| 8:AB:1359:A:N3    | 8:AB:1360:G:H1'    | 2.13                     | 0.59              |
| 8:AB:1612:C:N1    | 8:AB:1620:G:N2     | 2.49                     | 0.59              |
| 8:AB:1805:A:O2'   | 9:AC:50:THR:HA     | 2.02                     | 0.59              |
| 8:AB:1833:C:O2    | 8:AB:1969:A:H2     | 1.83                     | 0.59              |
| 8:AB:1842:G:N2    | 8:AB:1901:A:C4     | 2.70                     | 0.59              |
| 8:AB:2618:G:C4    | 8:AB:2619:C:C5     | 2.90                     | 0.59              |
| 10:AD:126:ASN:O   | 10:AD:127:PHE:HB2  | 2.01                     | 0.59              |
| 11:AE:163:ASN:CG  | 11:AE:166:LYS:HB2  | 2.22                     | 0.59              |
| 12:AF:88:VAL:HG12 | 12:AF:90:LEU:HD11  | 1.84                     | 0.59              |
| 16:AJ:100:VAL:H   | 16:AJ:103:ILE:HG12 | 1.66                     | 0.59              |
| 19:AM:50:ARG:HA   | 19:AM:50:ARG:NE    | 2.16                     | 0.59              |
| 22:AP:56:SER:HA   | 22:AP:58:PHE:CD2   | 2.36                     | 0.59              |
| 23:AQ:45:ALA:O    | 23:AQ:49:ARG:HB3   | 2.01                     | 0.59              |
| 24:AR:40:MET:O    | 24:AR:54:VAL:HG22  | 2.02                     | 0.59              |
| 25:AS:75:PHE:HD1  | 25:AS:75:PHE:N     | 2.00                     | 0.59              |
| 32:AZ:3:LYS:HG2   | 32:AZ:8:LYS:N      | 2.17                     | 0.59              |
| 33:BA:15:G:C2     | 33:BA:16:A:C5      | 2.90                     | 0.59              |
| 33:BA:238:A:N3    | 33:BA:239:U:H6     | 2.00                     | 0.59              |
| 33:BA:356:A:H2'   | 33:BA:357:G:H8     | 1.66                     | 0.59              |
| 33:BA:377:G:C2    | 33:BA:378:G:C5     | 2.90                     | 0.59              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:BA:499:A:C2   | 33:BA:500:G:N3    | 2.69                     | 0.59              |
| 33:BA:531:U:H6   | 33:BA:531:U:H5'   | 1.65                     | 0.59              |
| 33:BA:557:G:C5   | 33:BA:558:G:C6    | 2.90                     | 0.59              |
| 33:BA:715:A:C8   | 33:BA:715:A:C3'   | 2.83                     | 0.59              |
| 33:BA:771:G:H2'  | 33:BA:771:G:N3    | 2.16                     | 0.59              |
| 33:BA:953:G:C6   | 33:BA:954:G:C8    | 2.90                     | 0.59              |
| 33:BA:1192:C:C4  | 33:BA:1193:G:C8   | 2.90                     | 0.59              |
| 33:BA:1454:G:H2' | 33:BA:1455:G:H8   | 1.66                     | 0.59              |
| 34:BB:45:THR:HB  | 34:BB:49:PHE:CZ   | 2.37                     | 0.59              |
| 45:BM:33:LEU:C   | 45:BM:35:ALA:H    | 2.05                     | 0.59              |
| 2:C1:36:LYS:NZ   | 8:CB:2344:U:C2    | 2.70                     | 0.59              |
| 8:CB:160:A:H2'   | 8:CB:161:A:C8     | 2.37                     | 0.59              |
| 8:CB:226:A:C6    | 8:CB:227:A:C6     | 2.90                     | 0.59              |
| 8:CB:246:C:H2'   | 8:CB:247:G:H5'    | 1.83                     | 0.59              |
| 8:CB:317:G:C6    | 8:CB:318:C:C2     | 2.90                     | 0.59              |
| 8:CB:463:G:C2    | 8:CB:467:G:C6     | 2.90                     | 0.59              |
| 8:CB:484:C:N4    | 8:CB:496:G:H1     | 1.97                     | 0.59              |
| 8:CB:539:G:N2    | 8:CB:540:C:H1'    | 2.17                     | 0.59              |
| 8:CB:797:G:C6    | 8:CB:798:G:C8     | 2.89                     | 0.59              |
| 8:CB:1306:C:N4   | 8:CB:1622:G:H1    | 2.00                     | 0.59              |
| 8:CB:1970:A:C1'  | 8:CB:1972:G:C8    | 2.84                     | 0.59              |
| 8:CB:2150:C:H2'  | 8:CB:2151:U:C6    | 2.37                     | 0.59              |
| 8:CB:2641:G:H8   | 8:CB:2641:G:H5'   | 1.66                     | 0.59              |
| 8:CB:2814:A:H2'  | 8:CB:2815:C:H6    | 1.67                     | 0.59              |
| 9:CC:53:ILE:CG1  | 9:CC:218:THR:OG1  | 2.49                     | 0.59              |
| 10:CD:101:PHE:CZ | 10:CD:180:VAL:CG1 | 2.77                     | 0.59              |
| 11:CE:60:TRP:CD1 | 11:CE:70:SER:CB   | 2.85                     | 0.59              |
| 18:CL:51:GLU:OE1 | 18:CL:52:GLY:N    | 2.34                     | 0.59              |
| 21:CO:2:ASP:HB3  | 21:CO:4:LYS:HB2   | 1.82                     | 0.59              |
| 22:CP:74:GLN:NE2 | 22:CP:74:GLN:HA   | 2.04                     | 0.59              |
| 23:CQ:75:TYR:O   | 23:CQ:79:ILE:HG12 | 2.01                     | 0.59              |
| 27:CU:44:HIS:HB2 | 27:CU:46:LYS:NZ   | 2.16                     | 0.59              |
| 33:DA:342:C:H42  | 33:DA:347:G:H1    | 1.47                     | 0.59              |
| 33:DA:569:C:N4   | 33:DA:881:G:H1    | 1.96                     | 0.59              |
| 33:DA:698:G:H1'  | 33:DA:798:U:O2'   | 2.02                     | 0.59              |
| 33:DA:821:G:H2'  | 33:DA:822:U:C6    | 2.36                     | 0.59              |
| 33:DA:893:C:H2'  | 33:DA:894:G:H8    | 1.66                     | 0.59              |
| 33:DA:965:U:OP1  | 33:DA:1198:G:H5'' | 2.01                     | 0.59              |
| 33:DA:1401:G:H8  | 33:DA:1401:G:O5'  | 1.85                     | 0.59              |
| 33:DA:1411:C:O2' | 33:DA:1412:C:H5'  | 2.02                     | 0.59              |
| 34:DB:72:LYS:O   | 34:DB:74:ALA:N    | 2.35                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:DB:80:LYS:HA   | 34:DB:90:PHE:CE1   | 2.38                     | 0.59              |
| 35:DC:112:ALA:H   | 35:DC:201:ILE:HD11 | 1.67                     | 0.59              |
| 37:DE:63:MET:O    | 37:DE:66:ALA:HB3   | 2.01                     | 0.59              |
| 43:DK:126:ARG:O   | 53:DU:33:ARG:NH2   | 2.35                     | 0.59              |
| 44:DL:28:GLN:HB2  | 44:DL:81:ILE:O     | 2.01                     | 0.59              |
| 53:DU:37:TYR:HD2  | 53:DU:38:GLU:OE1   | 1.85                     | 0.59              |
| 8:AB:371:A:C8     | 8:AB:373:U:N3      | 2.70                     | 0.59              |
| 8:AB:812:C:H5'    | 18:AL:32:GLY:HA2   | 1.83                     | 0.59              |
| 8:AB:941:A:N3     | 8:AB:941:A:H2'     | 2.16                     | 0.59              |
| 8:AB:988:A:C2     | 8:AB:989:G:N2      | 2.71                     | 0.59              |
| 8:AB:1027:A:C6    | 8:AB:1126:A:C4     | 2.90                     | 0.59              |
| 8:AB:1199:U:H2'   | 8:AB:1200:C:C6     | 2.36                     | 0.59              |
| 8:AB:1285:A:C6    | 8:AB:1329:U:C4     | 2.90                     | 0.59              |
| 8:AB:1306:C:H42   | 8:AB:1622:G:H1     | 1.49                     | 0.59              |
| 8:AB:1306:C:N4    | 8:AB:1622:G:H1     | 2.00                     | 0.59              |
| 8:AB:1568:G:OP1   | 9:AC:61:TYR:HB2    | 2.02                     | 0.59              |
| 8:AB:1623:G:C4    | 8:AB:1624:U:C5     | 2.89                     | 0.59              |
| 8:AB:1717:A:H61   | 8:AB:1743:G:H1'    | 1.66                     | 0.59              |
| 8:AB:1764:C:C4    | 8:AB:1765:U:H5     | 2.20                     | 0.59              |
| 8:AB:1862:G:N1    | 8:AB:1881:C:C4     | 2.70                     | 0.59              |
| 8:AB:2270:A:O2'   | 29:AW:18:LYS:HE3   | 2.02                     | 0.59              |
| 8:AB:2643:G:H2'   | 8:AB:2644:G:H5'    | 1.84                     | 0.59              |
| 8:AB:2820:A:O3'   | 20:AN:3:HIS:CD2    | 2.55                     | 0.59              |
| 9:AC:124:LYS:NZ   | 9:AC:125:PRO:HD2   | 2.17                     | 0.59              |
| 10:AD:160:LYS:HA  | 10:AD:160:LYS:HE3  | 1.83                     | 0.59              |
| 11:AE:111:GLU:C   | 11:AE:113:VAL:N    | 2.55                     | 0.59              |
| 16:AJ:7:LYS:HE3   | 16:AJ:48:VAL:HG21  | 1.83                     | 0.59              |
| 16:AJ:45:THR:N    | 23:AQ:63:ARG:HH21  | 2.01                     | 0.59              |
| 27:AU:57:ILE:HG23 | 27:AU:58:VAL:H     | 1.66                     | 0.59              |
| 27:AU:84:PHE:C    | 27:AU:85:ARG:HG3   | 2.22                     | 0.59              |
| 28:AV:9:ARG:HG3   | 28:AV:39:ALA:HB1   | 1.83                     | 0.59              |
| 33:BA:451:A:C1'   | 33:BA:452:A:N7     | 2.66                     | 0.59              |
| 33:BA:655:A:H61   | 33:BA:752:G:N2     | 1.98                     | 0.59              |
| 33:BA:692:U:H3    | 33:BA:694:A:H3'    | 1.67                     | 0.59              |
| 33:BA:862:C:N3    | 33:BA:863:U:C6     | 2.69                     | 0.59              |
| 33:BA:918:A:N1    | 33:BA:919:A:N3     | 2.49                     | 0.59              |
| 33:BA:950:U:OP2   | 45:BM:100:ARG:HG2  | 2.02                     | 0.59              |
| 33:BA:1188:A:C2   | 33:BA:1189:U:H1'   | 2.37                     | 0.59              |
| 33:BA:1226:C:H5'' | 45:BM:102:LYS:CA   | 2.23                     | 0.59              |
| 34:BB:80:LYS:HG3  | 34:BB:81:ASP:H     | 1.66                     | 0.59              |
| 35:BC:13:ILE:CG2  | 35:BC:14:VAL:HG22  | 2.30                     | 0.59              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BC:156:LEU:HD13 | 35:BC:163:ARG:HB3 | 1.82                     | 0.59              |
| 37:BE:139:THR:O    | 37:BE:143:LEU:HG  | 2.02                     | 0.59              |
| 43:BK:33:ILE:O     | 43:BK:41:LEU:HB2  | 2.02                     | 0.59              |
| 47:BO:24:THR:O     | 47:BO:28:VAL:HG23 | 2.02                     | 0.59              |
| 4:C3:9:ALA:HB2     | 4:C3:63:TYR:OH    | 2.03                     | 0.59              |
| 5:C4:26:ILE:CB     | 5:C4:35:GLN:HG2   | 2.32                     | 0.59              |
| 8:CB:49:A:C6       | 8:CB:118:A:C2     | 2.89                     | 0.59              |
| 8:CB:118:A:H3'     | 8:CB:119:A:H5''   | 1.85                     | 0.59              |
| 8:CB:449:A:C2'     | 8:CB:450:G:H5'    | 2.32                     | 0.59              |
| 8:CB:458:G:N2      | 8:CB:469:G:N3     | 2.49                     | 0.59              |
| 8:CB:682:G:H2'     | 8:CB:683:U:C6     | 2.37                     | 0.59              |
| 8:CB:1036:G:C6     | 8:CB:1120:G:C5    | 2.90                     | 0.59              |
| 8:CB:1272:A:C4     | 8:CB:1618:A:C8    | 2.90                     | 0.59              |
| 8:CB:1586:A:H3'    | 8:CB:1586:A:H8    | 1.67                     | 0.59              |
| 8:CB:1616:A:H4'    | 8:CB:1617:C:OP2   | 2.02                     | 0.59              |
| 8:CB:2425:A:H5''   | 8:CB:2427:C:O4'   | 2.02                     | 0.59              |
| 8:CB:2547:A:C2     | 8:CB:2548:U:N3    | 2.70                     | 0.59              |
| 8:CB:2847:U:C5     | 8:CB:2848:G:C5    | 2.90                     | 0.59              |
| 9:CC:22:GLU:HA     | 9:CC:22:GLU:OE1   | 2.02                     | 0.59              |
| 9:CC:53:ILE:HG22   | 9:CC:54:GLY:H     | 1.66                     | 0.59              |
| 9:CC:63:ILE:HG13   | 9:CC:90:ILE:HD11  | 1.83                     | 0.59              |
| 9:CC:87:SER:O      | 9:CC:155:ARG:NH1  | 2.35                     | 0.59              |
| 9:CC:124:LYS:HZ3   | 9:CC:125:PRO:HD2  | 1.66                     | 0.59              |
| 11:CE:4:VAL:HA     | 11:CE:14:VAL:HG13 | 1.84                     | 0.59              |
| 11:CE:112:LEU:O    | 11:CE:114:ARG:N   | 2.36                     | 0.59              |
| 12:CF:63:LYS:HE2   | 12:CF:64:PRO:O    | 2.02                     | 0.59              |
| 21:CO:96:GLY:O     | 21:CO:97:PHE:HB2  | 2.02                     | 0.59              |
| 21:CO:103:VAL:HG23 | 21:CO:104:GLN:H   | 1.67                     | 0.59              |
| 23:CQ:28:SER:C     | 23:CQ:29:ARG:HG2  | 2.22                     | 0.59              |
| 23:CQ:40:LYS:HG3   | 23:CQ:44:TYR:CB   | 2.33                     | 0.59              |
| 24:CR:39:LEU:H     | 24:CR:61:ALA:CB   | 2.15                     | 0.59              |
| 25:CS:71:VAL:O     | 25:CS:71:VAL:HG12 | 2.01                     | 0.59              |
| 27:CU:66:VAL:CG1   | 27:CU:67:SER:H    | 2.04                     | 0.59              |
| 29:CW:36:ILE:CG2   | 29:CW:68:PHE:CD1  | 2.85                     | 0.59              |
| 30:CX:41:HIS:O     | 30:CX:43:LEU:HD23 | 2.02                     | 0.59              |
| 32:CZ:25:ARG:CG    | 32:CZ:26:SER:H    | 2.15                     | 0.59              |
| 33:DA:328:C:H4'    | 33:DA:329:A:C5'   | 2.31                     | 0.59              |
| 33:DA:488:C:N1     | 33:DA:489:C:H5    | 2.00                     | 0.59              |
| 33:DA:1012:A:N6    | 33:DA:1013:G:C6   | 2.70                     | 0.59              |
| 33:DA:1329:A:H5'   | 45:DM:28:ARG:CD   | 2.32                     | 0.59              |
| 33:DA:1422:G:C4    | 33:DA:1423:G:N7   | 2.70                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DD:69:ARG:O    | 36:DD:73:ASN:OD1   | 2.20                     | 0.59              |
| 37:DE:33:THR:CG2  | 37:DE:51:LYS:HD3   | 2.33                     | 0.59              |
| 37:DE:114:LEU:O   | 37:DE:119:VAL:HG23 | 2.01                     | 0.59              |
| 39:DG:87:PRO:O    | 39:DG:152:HIS:HB3  | 2.02                     | 0.59              |
| 40:DH:79:ARG:HG2  | 40:DH:82:LEU:O     | 2.02                     | 0.59              |
| 41:DI:46:VAL:CG1  | 41:DI:75:ALA:HB1   | 2.30                     | 0.59              |
| 44:DL:27:PRO:HG2  | 44:DL:28:GLN:H     | 1.66                     | 0.59              |
| 8:AB:23:G:H2'     | 8:AB:24:G:C8       | 2.37                     | 0.59              |
| 8:AB:91:A:C8      | 8:AB:91:A:C3'      | 2.85                     | 0.59              |
| 8:AB:282:A:H2'    | 8:AB:283:G:C8      | 2.36                     | 0.59              |
| 8:AB:329:G:H1     | 27:AU:16:LYS:HZ2   | 1.50                     | 0.59              |
| 8:AB:409:G:H2'    | 8:AB:410:G:C8      | 2.38                     | 0.59              |
| 8:AB:661:A:O2'    | 18:AL:23:ILE:HG23  | 2.01                     | 0.59              |
| 8:AB:1041:G:C2    | 8:AB:1042:G:C5     | 2.90                     | 0.59              |
| 8:AB:1313:U:H4'   | 8:AB:1332:G:H4'    | 1.83                     | 0.59              |
| 8:AB:1551:A:H3'   | 8:AB:1552:A:H5''   | 1.84                     | 0.59              |
| 8:AB:1613:G:N1    | 8:AB:1617:C:O2     | 2.35                     | 0.59              |
| 8:AB:1838:C:H4'   | 8:AB:1839:G:C5'    | 2.32                     | 0.59              |
| 8:AB:1842:G:O4'   | 9:AC:241:LYS:HE3   | 2.01                     | 0.59              |
| 8:AB:2059:A:C6    | 8:AB:2503:A:C2     | 2.90                     | 0.59              |
| 8:AB:2708:G:O2'   | 8:AB:2709:G:H5'    | 2.02                     | 0.59              |
| 9:AC:35:LYS:CE    | 9:AC:64:VAL:HG23   | 2.31                     | 0.59              |
| 11:AE:3:LEU:C     | 11:AE:12:LEU:HD13  | 2.23                     | 0.59              |
| 15:AI:60:VAL:HG13 | 15:AI:65:SER:O     | 2.01                     | 0.59              |
| 17:AK:30:ARG:HG2  | 17:AK:31:ARG:N     | 2.17                     | 0.59              |
| 18:AL:78:ARG:NE   | 18:AL:81:ASP:H     | 2.01                     | 0.59              |
| 18:AL:84:LYS:O    | 18:AL:85:VAL:HG23  | 2.03                     | 0.59              |
| 18:AL:94:THR:C    | 18:AL:96:LYS:HD3   | 2.21                     | 0.59              |
| 24:AR:31:GLU:O    | 24:AR:32:THR:HB    | 2.02                     | 0.59              |
| 30:AX:14:LEU:HD12 | 30:AX:14:LEU:H     | 1.67                     | 0.59              |
| 32:AZ:34:LEU:HD12 | 32:AZ:44:PHE:CB    | 2.30                     | 0.59              |
| 33:BA:293:G:C4    | 33:BA:294:U:C5     | 2.89                     | 0.59              |
| 33:BA:490:C:C2'   | 33:BA:491:G:H5'    | 2.33                     | 0.59              |
| 33:BA:627:G:C2'   | 33:BA:628:G:H8     | 2.15                     | 0.59              |
| 33:BA:975:A:C8    | 33:BA:1357:A:C2    | 2.91                     | 0.59              |
| 33:BA:1222:G:H5'' | 51:BS:77:ARG:NH1   | 2.17                     | 0.59              |
| 40:BH:31:LEU:O    | 40:BH:35:ILE:HG13  | 2.02                     | 0.59              |
| 44:BL:51:VAL:O    | 44:BL:52:CYS:HB3   | 2.00                     | 0.59              |
| 4:C3:12:ARG:C     | 4:C3:13:PHE:CG     | 2.75                     | 0.59              |
| 8:CB:24:G:C1'     | 25:CS:77:ASP:HB3   | 2.28                     | 0.59              |
| 8:CB:92:U:O4      | 8:CB:93:G:C6       | 2.56                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:307:G:N1     | 8:CB:310:A:OP2     | 2.35                     | 0.59              |
| 8:CB:320:A:H4'    | 8:CB:322:A:C8      | 2.38                     | 0.59              |
| 8:CB:592:A:H2'    | 8:CB:593:U:H6      | 1.67                     | 0.59              |
| 8:CB:1098:A:C2'   | 8:CB:1099:G:H5''   | 2.27                     | 0.59              |
| 8:CB:1232:G:O2'   | 8:CB:1233:C:H5'    | 2.01                     | 0.59              |
| 8:CB:1253:A:C8    | 55:CB:5221:HOH:O   | 2.52                     | 0.59              |
| 8:CB:1265:A:N9    | 8:CB:1267:U:C5     | 2.70                     | 0.59              |
| 8:CB:1284:A:O5'   | 8:CB:1284:A:H8     | 1.85                     | 0.59              |
| 8:CB:1340:U:O2'   | 8:CB:1341:G:P      | 2.59                     | 0.59              |
| 8:CB:1453:A:H5''  | 8:CB:1453:A:C8     | 2.37                     | 0.59              |
| 8:CB:1454:C:H41   | 20:CN:64:ARG:HB2   | 1.65                     | 0.59              |
| 8:CB:1604:C:OP2   | 55:CB:5268:HOH:O   | 2.17                     | 0.59              |
| 8:CB:1664:A:H2'   | 8:CB:1665:A:H8     | 1.67                     | 0.59              |
| 8:CB:1707:G:C6    | 8:CB:1708:C:C4     | 2.91                     | 0.59              |
| 8:CB:1775:U:H2'   | 8:CB:1776:G:C5'    | 2.32                     | 0.59              |
| 8:CB:1972:G:N2    | 8:CB:1973:G:C5     | 2.71                     | 0.59              |
| 8:CB:2582:G:O2'   | 8:CB:2583:G:H5'    | 2.02                     | 0.59              |
| 8:CB:2814:A:H2'   | 8:CB:2815:C:C6     | 2.37                     | 0.59              |
| 9:CC:17:LYS:N     | 9:CC:17:LYS:CE     | 2.65                     | 0.59              |
| 9:CC:212:TRP:CZ2  | 9:CC:216:ARG:HD2   | 2.37                     | 0.59              |
| 11:CE:145:ASP:O   | 11:CE:146:VAL:HG23 | 2.01                     | 0.59              |
| 17:CK:12:ASP:HB3  | 17:CK:85:VAL:HG22  | 1.85                     | 0.59              |
| 29:CW:72:GLY:C    | 29:CW:74:LYS:H     | 2.06                     | 0.59              |
| 30:CX:18:LEU:N    | 30:CX:18:LEU:HD22  | 2.16                     | 0.59              |
| 33:DA:524:G:H2'   | 33:DA:525:C:C5     | 2.36                     | 0.59              |
| 33:DA:725:G:C6    | 33:DA:726:C:C5     | 2.91                     | 0.59              |
| 33:DA:767:A:H2'   | 33:DA:768:A:H5'    | 1.82                     | 0.59              |
| 33:DA:886:G:O6    | 33:DA:912:C:N3     | 2.35                     | 0.59              |
| 33:DA:939:G:N1    | 33:DA:1344:C:C2    | 2.70                     | 0.59              |
| 33:DA:988:G:H4'   | 33:DA:1014:A:H61   | 1.66                     | 0.59              |
| 33:DA:1258:G:N2   | 33:DA:1278:G:H21   | 2.00                     | 0.59              |
| 33:DA:1474:U:H2'  | 33:DA:1475:G:C5'   | 2.18                     | 0.59              |
| 35:DC:10:ARG:HH11 | 35:DC:10:ARG:HG2   | 1.67                     | 0.59              |
| 35:DC:39:ARG:NH2  | 46:DN:91:GLU:HB3   | 2.18                     | 0.59              |
| 39:DG:39:GLU:C    | 39:DG:41:ILE:H     | 2.05                     | 0.59              |
| 2:A1:26:LYS:HG2   | 2:A1:29:LYS:HB2    | 1.85                     | 0.59              |
| 4:A3:23:HIS:CD2   | 4:A3:46:LYS:O      | 2.55                     | 0.59              |
| 4:A3:29:ARG:O     | 4:A3:29:ARG:CZ     | 2.50                     | 0.59              |
| 4:A3:61:LEU:HD12  | 4:A3:61:LEU:H      | 1.66                     | 0.59              |
| 7:AA:23:G:N1      | 7:AA:59:A:N6       | 2.50                     | 0.59              |
| 8:AB:312:G:H2'    | 8:AB:313:G:H8      | 1.68                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:494:G:H4'    | 25:AS:6:LYS:HG2   | 1.85                     | 0.59              |
| 8:AB:729:G:C4     | 8:AB:1775:U:O2    | 2.56                     | 0.59              |
| 8:AB:789:A:N6     | 8:AB:1614:A:OP2   | 2.35                     | 0.59              |
| 8:AB:1550:C:H2'   | 8:AB:1551:A:H8    | 1.68                     | 0.59              |
| 8:AB:1975:G:C5    | 8:AB:1976:U:C5    | 2.90                     | 0.59              |
| 8:AB:2071:A:C6    | 8:AB:2072:C:N4    | 2.70                     | 0.59              |
| 8:AB:2279:G:N2    | 8:AB:2280:G:H1'   | 2.18                     | 0.59              |
| 8:AB:2749:A:C2    | 8:AB:2750:A:N7    | 2.70                     | 0.59              |
| 9:AC:41:GLY:O     | 9:AC:42:ARG:O     | 2.20                     | 0.59              |
| 9:AC:62:ARG:NH1   | 9:AC:62:ARG:HG2   | 2.16                     | 0.59              |
| 10:AD:17:GLU:O    | 17:AK:72:PRO:HB3  | 2.03                     | 0.59              |
| 10:AD:33:ARG:HH21 | 10:AD:91:THR:HG21 | 1.67                     | 0.59              |
| 10:AD:208:LYS:HE3 | 10:AD:208:LYS:C   | 2.22                     | 0.59              |
| 14:AH:73:ASN:H    | 14:AH:73:ASN:HD22 | 1.48                     | 0.59              |
| 14:AH:79:THR:HG22 | 14:AH:147:VAL:CG2 | 2.33                     | 0.59              |
| 16:AJ:27:ARG:HG3  | 16:AJ:27:ARG:NH1  | 2.16                     | 0.59              |
| 17:AK:2:ILE:HG21  | 17:AK:67:LYS:HD2  | 1.84                     | 0.59              |
| 18:AL:77:ILE:HG22 | 18:AL:110:VAL:O   | 2.03                     | 0.59              |
| 18:AL:123:ARG:HB2 | 18:AL:143:GLU:OE2 | 2.03                     | 0.59              |
| 19:AM:71:LYS:HZ2  | 19:AM:91:TYR:HB3  | 1.66                     | 0.59              |
| 21:AO:73:ALA:O    | 21:AO:76:LYS:HB3  | 2.01                     | 0.59              |
| 24:AR:78:ARG:HE   | 24:AR:88:GLY:CA   | 2.10                     | 0.59              |
| 33:BA:15:G:C4     | 33:BA:16:A:C8     | 2.91                     | 0.59              |
| 33:BA:41:G:C6     | 33:BA:402:G:N1    | 2.70                     | 0.59              |
| 33:BA:44:A:H1'    | 33:BA:399:G:N2    | 2.16                     | 0.59              |
| 33:BA:158:G:C6    | 33:BA:159:G:N7    | 2.70                     | 0.59              |
| 33:BA:181:A:C8    | 55:BA:5051:HOH:O  | 2.51                     | 0.59              |
| 33:BA:899:C:H2'   | 33:BA:899:C:O2    | 2.02                     | 0.59              |
| 33:BA:1122:U:H2'  | 33:BA:1123:U:C6   | 2.38                     | 0.59              |
| 33:BA:1479:C:H2'  | 33:BA:1480:A:O4'  | 2.01                     | 0.59              |
| 33:BA:1525:G:H2'  | 33:BA:1526:G:C5'  | 2.32                     | 0.59              |
| 36:BD:50:TYR:CE1  | 36:BD:54:LEU:HD23 | 2.38                     | 0.59              |
| 2:C1:8:ILE:HG21   | 2:C1:27:ARG:NE    | 2.18                     | 0.59              |
| 3:C2:16:HIS:NE2   | 3:C2:44:VAL:HA    | 2.16                     | 0.59              |
| 4:C3:24:LYS:HD2   | 4:C3:26:ALA:HB2   | 1.84                     | 0.59              |
| 7:CA:33:G:N2      | 7:CA:34:A:N3      | 2.49                     | 0.59              |
| 8:CB:346:A:C2'    | 8:CB:347:A:H5''   | 2.33                     | 0.59              |
| 8:CB:565:C:C2     | 8:CB:577:G:N1     | 2.71                     | 0.59              |
| 8:CB:647:G:H8     | 8:CB:647:G:H5''   | 1.67                     | 0.59              |
| 8:CB:1080:A:C2    | 8:CB:1081:U:C4    | 2.90                     | 0.59              |
| 8:CB:1362:C:O2    | 8:CB:1363:C:C6    | 2.56                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1371:G:O5'   | 8:CB:1371:G:H8    | 1.85                     | 0.59              |
| 8:CB:1681:G:C4    | 8:CB:1762:A:C2    | 2.90                     | 0.59              |
| 8:CB:1707:G:H5'   | 8:CB:1707:G:C8    | 2.36                     | 0.59              |
| 8:CB:1763:G:H2'   | 8:CB:1764:C:C5'   | 2.32                     | 0.59              |
| 8:CB:2240:U:C2    | 8:CB:2241:A:C8    | 2.91                     | 0.59              |
| 8:CB:2270:A:H3'   | 55:CB:5394:HOH:O  | 2.02                     | 0.59              |
| 8:CB:2514:U:C2    | 8:CB:2515:C:C5    | 2.90                     | 0.59              |
| 8:CB:2794:C:H2'   | 8:CB:2795:C:C6    | 2.36                     | 0.59              |
| 10:CD:1:MET:HG2   | 10:CD:1:MET:O     | 2.01                     | 0.59              |
| 10:CD:36:GLN:C    | 10:CD:36:GLN:NE2  | 2.54                     | 0.59              |
| 23:CQ:67:ALA:O    | 23:CQ:69:ARG:N    | 2.35                     | 0.59              |
| 24:CR:89:HIS:CD2  | 24:CR:90:ARG:N    | 2.64                     | 0.59              |
| 29:CW:42:THR:O    | 29:CW:65:LYS:HA   | 2.02                     | 0.59              |
| 33:DA:237:G:H2'   | 33:DA:238:A:H8    | 1.67                     | 0.59              |
| 33:DA:355:C:C2    | 33:DA:356:A:N7    | 2.70                     | 0.59              |
| 33:DA:376:G:H2'   | 33:DA:377:G:C8    | 2.35                     | 0.59              |
| 33:DA:686:U:H4'   | 33:DA:687:A:OP1   | 2.03                     | 0.59              |
| 33:DA:705:G:H2'   | 33:DA:706:A:O4'   | 2.03                     | 0.59              |
| 33:DA:965:U:H4'   | 33:DA:969:A:C8    | 2.37                     | 0.59              |
| 33:DA:1061:G:H5'' | 33:DA:1062:U:OP2  | 2.03                     | 0.59              |
| 33:DA:1501:C:N4   | 33:DA:1504:G:C2   | 2.70                     | 0.59              |
| 41:DI:119:LYS:O   | 41:DI:120:ALA:HB3 | 2.03                     | 0.59              |
| 2:A1:18:HIS:CE1   | 8:AB:2399:G:H1'   | 2.37                     | 0.59              |
| 3:A2:21:ARG:CG    | 3:A2:21:ARG:NH1   | 2.61                     | 0.59              |
| 7:AA:9:G:C6       | 7:AA:112:G:C6     | 2.90                     | 0.59              |
| 8:AB:123:G:C2     | 8:AB:129:C:C4     | 2.90                     | 0.59              |
| 8:AB:172:A:H2'    | 8:AB:173:A:C8     | 2.38                     | 0.59              |
| 8:AB:197:A:N6     | 8:AB:2430:A:H2'   | 2.18                     | 0.59              |
| 8:AB:197:A:N7     | 8:AB:2430:A:C5    | 2.70                     | 0.59              |
| 8:AB:252:G:N3     | 8:AB:253:C:C6     | 2.70                     | 0.59              |
| 8:AB:372:G:C2     | 8:AB:400:G:N7     | 2.71                     | 0.59              |
| 8:AB:409:G:H2'    | 8:AB:410:G:H8     | 1.66                     | 0.59              |
| 8:AB:796:C:C6     | 8:AB:796:C:C3'    | 2.85                     | 0.59              |
| 8:AB:1112:G:C6    | 8:AB:1113:U:C4    | 2.90                     | 0.59              |
| 8:AB:1122:G:C2    | 8:AB:1123:C:C6    | 2.91                     | 0.59              |
| 8:AB:1566:A:N1    | 9:AC:213:ARG:NH2  | 2.50                     | 0.59              |
| 8:AB:1599:U:H2'   | 8:AB:1600:C:C6    | 2.37                     | 0.59              |
| 8:AB:1922:G:H2'   | 8:AB:1923:U:O4'   | 2.02                     | 0.59              |
| 8:AB:2003:A:H2'   | 8:AB:2004:G:O5'   | 2.03                     | 0.59              |
| 8:AB:2567:G:H2'   | 8:AB:2568:U:H6    | 1.67                     | 0.59              |
| 8:AB:2841:C:C2    | 8:AB:2877:G:N2    | 2.70                     | 0.59              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:AE:112:LEU:HD21 | 18:AL:11:GLY:C    | 2.22                     | 0.59              |
| 12:AF:101:ARG:NH1  | 12:AF:137:PHE:HB3 | 2.17                     | 0.59              |
| 16:AJ:25:LEU:HG    | 16:AJ:64:VAL:HA   | 1.83                     | 0.59              |
| 16:AJ:34:ARG:CD    | 16:AJ:39:LYS:HB2  | 2.32                     | 0.59              |
| 17:AK:31:ARG:HB3   | 17:AK:32:TYR:CE1  | 2.37                     | 0.59              |
| 17:AK:70:ARG:HB2   | 17:AK:75:SER:O    | 2.02                     | 0.59              |
| 18:AL:77:ILE:HG23  | 18:AL:78:ARG:NH1  | 2.16                     | 0.59              |
| 18:AL:78:ARG:HD3   | 18:AL:99:ASN:HB3  | 1.82                     | 0.59              |
| 25:AS:7:HIS:O      | 25:AS:8:ARG:HB2   | 2.02                     | 0.59              |
| 32:AZ:59:ARG:HG3   | 32:AZ:62:LYS:HB2  | 1.85                     | 0.59              |
| 33:BA:26:A:C2      | 36:BD:205:LYS:HB3 | 2.37                     | 0.59              |
| 33:BA:39:G:O6      | 33:BA:404:G:C6    | 2.55                     | 0.59              |
| 33:BA:110:C:O2     | 33:BA:111:G:C8    | 2.56                     | 0.59              |
| 33:BA:185:U:H3'    | 33:BA:185:U:C6    | 2.37                     | 0.59              |
| 33:BA:190:A:H2'    | 33:BA:191:G:O4'   | 2.02                     | 0.59              |
| 33:BA:705:G:C2     | 33:BA:706:A:H1'   | 2.37                     | 0.59              |
| 33:BA:832:G:C2     | 33:BA:855:U:C2    | 2.91                     | 0.59              |
| 33:BA:860:A:H5''   | 33:BA:861:G:OP2   | 2.03                     | 0.59              |
| 33:BA:939:G:N2     | 33:BA:940:C:C2    | 2.70                     | 0.59              |
| 33:BA:1143:G:H8    | 33:BA:1143:G:O5'  | 1.85                     | 0.59              |
| 33:BA:1389:C:C4    | 33:BA:1390:U:O4   | 2.55                     | 0.59              |
| 33:BA:1526:G:C6    | 33:BA:1527:U:C4   | 2.90                     | 0.59              |
| 37:BE:22:LYS:HD3   | 37:BE:29:ILE:HD11 | 1.85                     | 0.59              |
| 41:BI:29:ILE:CB    | 41:BI:64:ILE:HB   | 2.32                     | 0.59              |
| 43:BK:56:LYS:O     | 43:BK:57:SER:HB3  | 2.02                     | 0.59              |
| 45:BM:32:ILE:HG13  | 45:BM:58:GLU:CD   | 2.23                     | 0.59              |
| 2:C1:15:GLY:HA3    | 2:C1:47:ILE:HG21  | 1.84                     | 0.59              |
| 7:CA:28:C:H5'      | 21:CO:31:THR:HG21 | 1.85                     | 0.59              |
| 8:CB:28:A:H2'      | 8:CB:29:U:H5'     | 1.83                     | 0.59              |
| 8:CB:239:C:H2'     | 8:CB:240:C:C6     | 2.36                     | 0.59              |
| 8:CB:324:A:P       | 11:CE:162:ARG:HE  | 2.25                     | 0.59              |
| 8:CB:360:U:H2'     | 8:CB:361:G:O4'    | 2.03                     | 0.59              |
| 8:CB:507:A:H1'     | 8:CB:509:C:N3     | 2.18                     | 0.59              |
| 8:CB:678:C:OP1     | 8:CB:2072:C:OP1   | 2.20                     | 0.59              |
| 8:CB:742:A:H2'     | 8:CB:743:A:C8     | 2.38                     | 0.59              |
| 8:CB:748:G:C5      | 8:CB:750:A:C5     | 2.91                     | 0.59              |
| 8:CB:867:C:H3'     | 8:CB:867:C:C6     | 2.37                     | 0.59              |
| 8:CB:959:A:H5''    | 8:CB:959:A:H8     | 1.68                     | 0.59              |
| 8:CB:1062:G:H21    | 15:CI:91:LYS:HA   | 1.66                     | 0.59              |
| 8:CB:1540:G:C6     | 8:CB:1541:C:C4    | 2.90                     | 0.59              |
| 8:CB:2369:A:H2'    | 8:CB:2370:G:C8    | 2.37                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2602:A:OP1   | 8:CB:2602:A:H2'   | 2.02                     | 0.59              |
| 8:CB:2636:C:OP1   | 10:CD:79:LEU:HA   | 2.03                     | 0.59              |
| 8:CB:2776:A:O5'   | 8:CB:2776:A:H2'   | 2.03                     | 0.59              |
| 9:CC:16:VAL:O     | 9:CC:17:LYS:HB2   | 2.03                     | 0.59              |
| 9:CC:90:ILE:HD13  | 9:CC:102:TYR:HD2  | 1.65                     | 0.59              |
| 9:CC:203:VAL:HG22 | 9:CC:203:VAL:O    | 2.03                     | 0.59              |
| 10:CD:37:VAL:HG13 | 10:CD:42:ASN:CG   | 2.22                     | 0.59              |
| 11:CE:2:GLU:O     | 11:CE:3:LEU:HB2   | 2.02                     | 0.59              |
| 13:CG:156:TYR:CA  | 13:CG:171:LYS:HB3 | 2.24                     | 0.59              |
| 18:CL:95:LEU:C    | 18:CL:96:LYS:HD2  | 2.22                     | 0.59              |
| 20:CN:70:THR:O    | 20:CN:71:ARG:HB2  | 2.02                     | 0.59              |
| 20:CN:103:ARG:HB3 | 20:CN:106:ASP:OD1 | 2.03                     | 0.59              |
| 22:CP:61:ARG:HB3  | 22:CP:61:ARG:CZ   | 2.32                     | 0.59              |
| 31:CY:7:THR:CG2   | 31:CY:34:THR:HB   | 2.32                     | 0.59              |
| 32:CZ:31:ASP:O    | 32:CZ:32:LEU:HB2  | 2.01                     | 0.59              |
| 33:DA:248:C:H2'   | 33:DA:249:U:H6    | 1.68                     | 0.59              |
| 33:DA:506:G:H1    | 33:DA:525:C:H42   | 1.50                     | 0.59              |
| 33:DA:515:G:C2    | 33:DA:537:G:C2    | 2.91                     | 0.59              |
| 33:DA:654:G:C6    | 33:DA:655:A:C5    | 2.91                     | 0.59              |
| 33:DA:705:G:N2    | 43:DK:43:TRP:CE2  | 2.70                     | 0.59              |
| 33:DA:728:A:N1    | 33:DA:729:A:C6    | 2.71                     | 0.59              |
| 33:DA:935:A:C2    | 33:DA:936:C:C2    | 2.90                     | 0.59              |
| 33:DA:999:C:O2    | 33:DA:1042:A:H2   | 1.84                     | 0.59              |
| 33:DA:1104:G:N2   | 33:DA:1105:A:C4   | 2.70                     | 0.59              |
| 33:DA:1248:A:C4   | 33:DA:1290:G:N2   | 2.71                     | 0.59              |
| 33:DA:1422:G:C2'  | 33:DA:1423:G:H5'  | 2.33                     | 0.59              |
| 34:DB:17:HIS:O    | 34:DB:18:GLN:HB2  | 2.02                     | 0.59              |
| 35:DC:5:HIS:CD2   | 35:DC:7:ASN:HB3   | 2.36                     | 0.59              |
| 36:DD:138:PRO:CG  | 36:DD:184:LYS:HG3 | 2.31                     | 0.59              |
| 40:DH:46:GLU:O    | 40:DH:47:ASP:HB2  | 2.01                     | 0.59              |
| 8:AB:70:G:H5''    | 8:AB:112:U:O2     | 2.03                     | 0.59              |
| 8:AB:445:C:O4'    | 11:AE:47:LYS:HE2  | 2.02                     | 0.59              |
| 8:AB:507:A:H1'    | 8:AB:509:C:C4     | 2.38                     | 0.59              |
| 8:AB:628:G:O5'    | 8:AB:628:G:H8     | 1.85                     | 0.59              |
| 8:AB:1055:G:H2'   | 8:AB:1085:A:C2    | 2.38                     | 0.59              |
| 8:AB:1365:A:O5'   | 32:AZ:10:GLU:HG3  | 2.02                     | 0.59              |
| 8:AB:1407:G:H22   | 8:AB:1596:A:H1'   | 1.67                     | 0.59              |
| 8:AB:1783:A:H5''  | 8:AB:1784:A:P     | 2.42                     | 0.59              |
| 8:AB:2577:A:O4'   | 8:AB:2612:C:N4    | 2.35                     | 0.59              |
| 8:AB:2848:G:C4    | 22:AP:96:LEU:HD22 | 2.38                     | 0.59              |
| 9:AC:35:LYS:HE2   | 9:AC:64:VAL:HG23  | 1.84                     | 0.59              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AC:141:HIS:CD2   | 9:AC:193:GLU:H    | 2.21                     | 0.59              |
| 10:AD:34:VAL:HG13  | 10:AD:35:THR:H    | 1.66                     | 0.59              |
| 10:AD:184:ARG:NH1  | 22:AP:4:ILE:HG21  | 2.18                     | 0.59              |
| 14:AH:8:LYS:HD2    | 14:AH:9:VAL:N     | 2.16                     | 0.59              |
| 18:AL:57:LEU:H     | 18:AL:57:LEU:CD1  | 2.12                     | 0.59              |
| 18:AL:77:ILE:HG23  | 18:AL:78:ARG:N    | 2.16                     | 0.59              |
| 18:AL:110:VAL:O    | 18:AL:111:ILE:CD1 | 2.50                     | 0.59              |
| 21:AO:19:GLN:C     | 21:AO:21:LEU:H    | 2.04                     | 0.59              |
| 22:AP:62:LYS:HE2   | 22:AP:74:GLN:HG3  | 1.84                     | 0.59              |
| 22:AP:92:ARG:O     | 22:AP:92:ARG:HG3  | 2.02                     | 0.59              |
| 23:AQ:35:PHE:HB3   | 23:AQ:39:ILE:HD12 | 1.83                     | 0.59              |
| 24:AR:23:GLU:HB2   | 24:AR:96:VAL:CG1  | 2.33                     | 0.59              |
| 33:BA:541:G:C2     | 33:BA:542:G:C4    | 2.90                     | 0.59              |
| 33:BA:693:G:H2'    | 33:BA:694:A:O4'   | 2.02                     | 0.59              |
| 33:BA:858:G:H1     | 33:BA:869:G:H2'   | 1.66                     | 0.59              |
| 33:BA:928:G:H2'    | 33:BA:929:G:O4'   | 2.02                     | 0.59              |
| 33:BA:1503:A:H2    | 33:BA:1531:A:C2   | 2.21                     | 0.59              |
| 34:BB:15:PHE:CD1   | 34:BB:16:GLY:N    | 2.64                     | 0.59              |
| 34:BB:49:PHE:O     | 34:BB:53:LEU:HD23 | 2.02                     | 0.59              |
| 39:BG:115:MET:SD   | 39:BG:118:ARG:HB3 | 2.42                     | 0.59              |
| 40:BH:128:VAL:HG12 | 40:BH:129:ALA:N   | 2.18                     | 0.59              |
| 4:C3:9:ALA:C       | 4:C3:11:LYS:H     | 2.05                     | 0.59              |
| 8:CB:305:C:C5      | 8:CB:306:U:H5     | 2.20                     | 0.59              |
| 8:CB:323:C:OP2     | 8:CB:324:A:OP1    | 2.20                     | 0.59              |
| 8:CB:588:U:C5'     | 18:CL:29:LYS:HD2  | 2.32                     | 0.59              |
| 8:CB:662:G:O2'     | 8:CB:663:G:H5'    | 2.02                     | 0.59              |
| 8:CB:738:G:H1'     | 8:CB:759:G:N2     | 2.17                     | 0.59              |
| 8:CB:1003:G:H5''   | 8:CB:1003:G:C8    | 2.34                     | 0.59              |
| 8:CB:1041:G:H2'    | 8:CB:1042:G:C8    | 2.37                     | 0.59              |
| 8:CB:1885:A:C2     | 8:CB:1886:U:C2    | 2.90                     | 0.59              |
| 8:CB:2044:C:H42    | 8:CB:2045:C:N4    | 1.99                     | 0.59              |
| 8:CB:2058:A:C5'    | 8:CB:2058:A:C8    | 2.86                     | 0.59              |
| 8:CB:2082:A:N6     | 8:CB:2239:G:C4    | 2.71                     | 0.59              |
| 8:CB:2241:A:C2     | 8:CB:2242:G:C4    | 2.91                     | 0.59              |
| 8:CB:2378:A:H3'    | 8:CB:2378:A:C8    | 2.38                     | 0.59              |
| 8:CB:2784:U:C2     | 8:CB:2785:C:C5    | 2.91                     | 0.59              |
| 8:CB:2803:G:H2'    | 8:CB:2804:U:C6    | 2.36                     | 0.59              |
| 8:CB:2811:G:O5'    | 8:CB:2811:G:H8    | 1.84                     | 0.59              |
| 11:CE:154:ASP:O    | 11:CE:155:GLU:HB2 | 2.02                     | 0.59              |
| 13:CG:76:ILE:HA    | 13:CG:79:THR:HG22 | 1.85                     | 0.59              |
| 14:CH:27:ARG:H     | 14:CH:31:VAL:CG2  | 2.14                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:CI:41:PHE:HE1   | 15:CI:70:THR:HB    | 1.68                     | 0.59              |
| 19:CM:33:LEU:HD22  | 19:CM:124:LEU:HD12 | 1.83                     | 0.59              |
| 20:CN:63:ARG:HG3   | 20:CN:80:PHE:HE1   | 1.66                     | 0.59              |
| 21:CO:56:LYS:O     | 21:CO:62:LEU:HD12  | 2.02                     | 0.59              |
| 23:CQ:25:GLY:O     | 23:CQ:29:ARG:HG3   | 2.02                     | 0.59              |
| 25:CS:29:VAL:HG22  | 25:CS:71:VAL:HG23  | 1.85                     | 0.59              |
| 33:DA:586:C:O3'    | 40:DH:80:PRO:HB3   | 2.03                     | 0.59              |
| 33:DA:622:A:N7     | 33:DA:623:C:C6     | 2.71                     | 0.59              |
| 33:DA:688:G:N3     | 33:DA:704:A:H2     | 2.00                     | 0.59              |
| 33:DA:720:C:C4'    | 50:DR:38:ILE:HD11  | 2.33                     | 0.59              |
| 33:DA:778:G:H2'    | 33:DA:779:C:O4'    | 2.02                     | 0.59              |
| 33:DA:1114:C:N3    | 33:DA:1115:U:C4    | 2.70                     | 0.59              |
| 33:DA:1349:A:C2    | 33:DA:1350:A:H1'   | 2.38                     | 0.59              |
| 35:DC:69:THR:HG22  | 35:DC:70:ALA:H     | 1.66                     | 0.59              |
| 36:DD:25:ARG:HH11  | 36:DD:25:ARG:HB2   | 1.66                     | 0.59              |
| 37:DE:12:GLU:HA    | 37:DE:37:VAL:O     | 2.03                     | 0.59              |
| 37:DE:133:ILE:HG23 | 37:DE:134:ASN:HD22 | 1.67                     | 0.59              |
| 41:DI:83:THR:HG21  | 41:DI:102:PHE:HB3  | 1.85                     | 0.59              |
| 45:DM:23:GLY:HA2   | 45:DM:68:LEU:HD13  | 1.84                     | 0.59              |
| 45:DM:79:LEU:HD12  | 45:DM:80:MET:N     | 2.17                     | 0.59              |
| 48:DP:66:THR:HG22  | 48:DP:67:ILE:H     | 1.67                     | 0.59              |
| 49:DQ:64:ARG:HG2   | 49:DQ:64:ARG:O     | 2.01                     | 0.59              |
| 2:A1:12:SER:HA     | 2:A1:50:GLU:HA     | 1.84                     | 0.59              |
| 2:A1:13:SER:O      | 2:A1:50:GLU:OE2    | 2.19                     | 0.59              |
| 7:AA:74:U:H2'      | 7:AA:75:G:C8       | 2.37                     | 0.59              |
| 8:AB:103:A:C2'     | 8:AB:104:A:O5'     | 2.50                     | 0.59              |
| 8:AB:523:C:O2      | 8:AB:554:U:H4'     | 2.03                     | 0.59              |
| 8:AB:666:A:C5      | 8:AB:667:U:C5      | 2.90                     | 0.59              |
| 8:AB:1051:G:H8     | 8:AB:1051:G:O5'    | 1.84                     | 0.59              |
| 8:AB:1127:A:C2     | 8:AB:2518:A:C5     | 2.91                     | 0.59              |
| 8:AB:1401:G:C6     | 8:AB:1402:U:C4     | 2.90                     | 0.59              |
| 8:AB:1506:U:H2'    | 8:AB:1507:C:H6     | 1.68                     | 0.59              |
| 8:AB:1819:A:P      | 9:AC:153:LEU:HB2   | 2.41                     | 0.59              |
| 8:AB:2438:U:O3'    | 8:AB:2439:A:H3'    | 2.03                     | 0.59              |
| 8:AB:2860:A:H8     | 8:AB:2860:A:C5'    | 2.14                     | 0.59              |
| 9:AC:217:PRO:O     | 9:AC:218:THR:C     | 2.41                     | 0.59              |
| 10:AD:191:GLY:O    | 10:AD:192:ALA:HB3  | 2.01                     | 0.59              |
| 11:AE:60:TRP:CD1   | 11:AE:70:SER:CB    | 2.85                     | 0.59              |
| 13:AG:64:ALA:O     | 13:AG:67:ALA:N     | 2.35                     | 0.59              |
| 14:AH:55:GLU:C     | 14:AH:57:LYS:H     | 2.05                     | 0.59              |
| 16:AJ:38:GLY:CA    | 16:AJ:41:LYS:HE3   | 2.13                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 18:AL:78:ARG:CZ   | 18:AL:81:ASP:H    | 2.15                     | 0.59              |
| 23:AQ:75:TYR:O    | 23:AQ:79:ILE:HG12 | 2.01                     | 0.59              |
| 23:AQ:88:GLU:HG2  | 24:AR:53:PHE:CD2  | 2.38                     | 0.59              |
| 32:AZ:31:ASP:OD2  | 32:AZ:33:ASN:OD1  | 2.20                     | 0.59              |
| 33:BA:33:A:H2'    | 33:BA:34:C:C6     | 2.38                     | 0.59              |
| 33:BA:515:G:C6    | 33:BA:537:G:N2    | 2.71                     | 0.59              |
| 33:BA:521:G:C2    | 33:BA:522:C:C6    | 2.91                     | 0.59              |
| 33:BA:815:A:OP2   | 33:BA:816:A:H8    | 1.86                     | 0.59              |
| 33:BA:831:A:O5'   | 33:BA:831:A:H8    | 1.86                     | 0.59              |
| 33:BA:908:A:C4    | 33:BA:909:A:C8    | 2.90                     | 0.59              |
| 33:BA:1075:U:H6   | 33:BA:1075:U:H5'  | 1.68                     | 0.59              |
| 33:BA:1201:A:H1'  | 33:BA:1202:U:OP2  | 2.03                     | 0.59              |
| 33:BA:1225:A:H3'  | 33:BA:1226:C:C5   | 2.38                     | 0.59              |
| 33:BA:1272:G:O5'  | 33:BA:1272:G:H8   | 1.84                     | 0.59              |
| 33:BA:1273:C:H2'  | 33:BA:1274:A:O4'  | 2.02                     | 0.59              |
| 33:BA:1305:G:O2'  | 33:BA:1306:A:H8   | 1.85                     | 0.59              |
| 33:BA:1343:G:C6   | 33:BA:1344:C:N4   | 2.70                     | 0.59              |
| 35:BC:166:TRP:O   | 35:BC:167:TYR:HB2 | 2.01                     | 0.59              |
| 38:BF:51:ILE:HD11 | 38:BF:86:ARG:HG3  | 1.82                     | 0.59              |
| 40:BH:5:PRO:O     | 40:BH:32:LYS:HE3  | 2.03                     | 0.59              |
| 40:BH:24:VAL:HG12 | 40:BH:60:LEU:O    | 2.03                     | 0.59              |
| 43:BK:57:SER:O    | 43:BK:90:PRO:HB2  | 2.02                     | 0.59              |
| 47:BO:16:ARG:NH1  | 47:BO:76:ARG:NH1  | 2.51                     | 0.59              |
| 48:BP:42:ILE:HB   | 48:BP:46:LYS:HE2  | 1.84                     | 0.59              |
| 7:CA:12:C:H5      | 29:CW:50:VAL:CA   | 2.08                     | 0.59              |
| 8:CB:80:G:H5'     | 8:CB:346:A:C1'    | 2.32                     | 0.59              |
| 8:CB:138:U:O2'    | 8:CB:139:U:H2'    | 2.02                     | 0.59              |
| 8:CB:364:C:H2'    | 8:CB:365:U:C6     | 2.37                     | 0.59              |
| 8:CB:460:A:N1     | 8:CB:470:A:C4     | 2.71                     | 0.59              |
| 8:CB:582:A:OP2    | 23:CQ:31:TYR:CE1  | 2.56                     | 0.59              |
| 8:CB:647:G:C6     | 8:CB:648:G:C6     | 2.91                     | 0.59              |
| 8:CB:789:A:N6     | 8:CB:1614:A:OP2   | 2.36                     | 0.59              |
| 8:CB:953:G:O2'    | 8:CB:2266:A:P     | 2.60                     | 0.59              |
| 8:CB:1218:G:C6    | 8:CB:1219:U:N3    | 2.70                     | 0.59              |
| 8:CB:1454:C:C4'   | 20:CN:60:VAL:HG22 | 2.32                     | 0.59              |
| 8:CB:1833:C:O2    | 8:CB:1969:A:H2    | 1.86                     | 0.59              |
| 8:CB:2016:U:H2'   | 8:CB:2017:U:O4'   | 2.02                     | 0.59              |
| 8:CB:2028:U:H3'   | 8:CB:2029:G:H8    | 1.68                     | 0.59              |
| 8:CB:2144:G:C3'   | 8:CB:2145:C:H5'   | 2.33                     | 0.59              |
| 8:CB:2244:U:O2    | 8:CB:2245:U:C6    | 2.56                     | 0.59              |
| 9:CC:124:LYS:NZ   | 9:CC:125:PRO:HD2  | 2.16                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:CH:117:LEU:C    | 14:CH:119:ASN:H    | 2.05                     | 0.59              |
| 15:CI:37:PHE:HB2   | 15:CI:66:PHE:CE2   | 2.36                     | 0.59              |
| 15:CI:49:GLU:HB2   | 15:CI:52:LEU:CD1   | 2.33                     | 0.59              |
| 18:CL:110:VAL:CG2  | 18:CL:126:ARG:HH12 | 2.15                     | 0.59              |
| 20:CN:59:SER:O     | 20:CN:60:VAL:HB    | 1.99                     | 0.59              |
| 20:CN:111:ALA:O    | 20:CN:112:TYR:HD2  | 1.86                     | 0.59              |
| 21:CO:97:PHE:CG    | 21:CO:98:GLN:N     | 2.68                     | 0.59              |
| 22:CP:26:GLU:HB3   | 22:CP:46:VAL:HG12  | 1.84                     | 0.59              |
| 25:CS:21:ALA:HA    | 25:CS:24:ILE:HG13  | 1.83                     | 0.59              |
| 25:CS:32:ALA:CA    | 25:CS:35:ILE:HG22  | 2.28                     | 0.59              |
| 27:CU:52:ASN:O     | 27:CU:54:PRO:HD3   | 2.01                     | 0.59              |
| 29:CW:36:ILE:CG2   | 29:CW:68:PHE:HD1   | 2.15                     | 0.59              |
| 33:DA:380:G:C4     | 33:DA:382:A:OP2    | 2.55                     | 0.59              |
| 33:DA:787:A:C4     | 33:DA:788:U:C5     | 2.91                     | 0.59              |
| 33:DA:853:C:C4     | 33:DA:854:U:C5     | 2.84                     | 0.59              |
| 33:DA:893:C:H2'    | 33:DA:894:G:C8     | 2.38                     | 0.59              |
| 33:DA:931:C:H42    | 33:DA:1386:G:H1    | 1.48                     | 0.59              |
| 33:DA:946:A:O2'    | 33:DA:1333:A:H2'   | 2.01                     | 0.59              |
| 33:DA:1063:C:H6    | 33:DA:1063:C:O5'   | 1.85                     | 0.59              |
| 33:DA:1289:A:N1    | 33:DA:1372:U:O4'   | 2.36                     | 0.59              |
| 33:DA:1412:C:C2'   | 33:DA:1413:A:H8    | 2.06                     | 0.59              |
| 33:DA:1427:C:O2'   | 33:DA:1428:A:H5'   | 2.03                     | 0.59              |
| 36:DD:76:LYS:O     | 36:DD:79:ALA:HB3   | 2.03                     | 0.59              |
| 43:DK:109:ILE:HD13 | 53:DU:19:LYS:HZ1   | 1.68                     | 0.59              |
| 47:DO:53:ARG:HA    | 47:DO:56:LEU:CD1   | 2.31                     | 0.59              |
| 52:DT:5:SER:C      | 52:DT:7:LYS:H      | 2.05                     | 0.59              |
| 4:A3:29:ARG:NH1    | 4:A3:31:ILE:HD13   | 2.17                     | 0.59              |
| 8:AB:39:G:H2'      | 8:AB:40:U:C6       | 2.38                     | 0.59              |
| 8:AB:39:G:C4       | 8:AB:40:U:C5       | 2.90                     | 0.59              |
| 8:AB:100:U:C3'     | 27:AU:90:LYS:HB3   | 2.33                     | 0.59              |
| 8:AB:118:A:O2'     | 8:AB:178:G:H5'     | 2.01                     | 0.59              |
| 8:AB:467:G:C2      | 8:AB:468:G:C8      | 2.91                     | 0.59              |
| 8:AB:852:U:O4      | 8:AB:853:C:N4      | 2.35                     | 0.59              |
| 8:AB:1010:A:H2'    | 8:AB:1011:G:O5'    | 2.03                     | 0.59              |
| 8:AB:1196:C:C2     | 8:AB:1197:G:N7     | 2.71                     | 0.59              |
| 8:AB:1222:U:O2     | 8:AB:1228:G:C2     | 2.56                     | 0.59              |
| 8:AB:1233:C:O2'    | 8:AB:1234:U:H5'    | 2.03                     | 0.59              |
| 8:AB:1581:G:C5     | 8:AB:1582:C:C5     | 2.91                     | 0.59              |
| 8:AB:2073:C:O2'    | 8:AB:2074:U:H5'    | 2.03                     | 0.59              |
| 8:AB:2216:G:H2'    | 8:AB:2217:G:H5'    | 1.84                     | 0.59              |
| 8:AB:2259:U:C2     | 8:AB:2260:C:C5     | 2.91                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2539:C:C3'    | 8:AB:2540:C:H5''   | 2.33                     | 0.59              |
| 8:AB:2650:U:C2     | 8:AB:2671:G:N2     | 2.70                     | 0.59              |
| 11:AE:136:GLN:HE21 | 11:AE:137:LYS:HE3  | 1.68                     | 0.59              |
| 13:AG:175:LYS:O    | 13:AG:175:LYS:HD3  | 2.03                     | 0.59              |
| 19:AM:33:LEU:CD2   | 19:AM:124:LEU:HD12 | 2.32                     | 0.59              |
| 24:AR:5:PHE:HB3    | 24:AR:12:HIS:ND1   | 2.17                     | 0.59              |
| 25:AS:24:ILE:HG22  | 25:AS:28:LYS:CE    | 2.32                     | 0.59              |
| 26:AT:38:ALA:O     | 26:AT:42:GLU:HB3   | 2.02                     | 0.59              |
| 27:AU:5:ARG:CG     | 27:AU:6:ARG:H      | 2.08                     | 0.59              |
| 29:AW:32:ALA:O     | 29:AW:66:VAL:HG21  | 2.01                     | 0.59              |
| 32:AZ:3:LYS:HD3    | 32:AZ:51:VAL:HG21  | 1.85                     | 0.59              |
| 32:AZ:29:GLY:O     | 32:AZ:30:HIS:HB2   | 2.01                     | 0.59              |
| 33:BA:349:A:C2'    | 33:BA:350:G:H5''   | 2.32                     | 0.59              |
| 33:BA:355:C:C2     | 33:BA:356:A:N7     | 2.71                     | 0.59              |
| 33:BA:363:A:N6     | 33:BA:364:A:C6     | 2.71                     | 0.59              |
| 33:BA:412:A:HO2'   | 33:BA:413:G:H5''   | 1.67                     | 0.59              |
| 33:BA:607:A:N6     | 33:BA:608:A:N6     | 2.51                     | 0.59              |
| 33:BA:746:A:C8     | 33:BA:746:A:H3'    | 2.37                     | 0.59              |
| 33:BA:783:C:H42    | 33:BA:800:G:N2     | 2.00                     | 0.59              |
| 33:BA:891:U:O2'    | 33:BA:892:A:H5'    | 2.02                     | 0.59              |
| 33:BA:975:A:N7     | 33:BA:1357:A:C2    | 2.70                     | 0.59              |
| 33:BA:1005:A:C8    | 33:BA:1006:G:H8    | 2.20                     | 0.59              |
| 33:BA:1055:A:C8    | 33:BA:1055:A:H3'   | 2.38                     | 0.59              |
| 33:BA:1071:C:C2'   | 33:BA:1072:G:H5'   | 2.33                     | 0.59              |
| 36:BD:85:THR:HA    | 36:BD:88:ASN:HD22  | 1.66                     | 0.59              |
| 38:BF:101:PRO:N    | 50:BR:23:LYS:HB2   | 2.17                     | 0.59              |
| 40:BH:9:MET:O      | 40:BH:13:ILE:HG13  | 2.02                     | 0.59              |
| 42:BJ:56:HIS:O     | 42:BJ:57:VAL:HG12  | 2.03                     | 0.59              |
| 44:BL:104:SER:OG   | 44:BL:107:LYS:HE3  | 2.03                     | 0.59              |
| 50:BR:62:ARG:HB3   | 50:BR:69:TYR:CE1   | 2.38                     | 0.59              |
| 8:CB:83:A:H2'      | 8:CB:84:A:C8       | 2.38                     | 0.59              |
| 8:CB:406:G:H2'     | 8:CB:407:G:O4'     | 2.02                     | 0.59              |
| 8:CB:533:G:H8      | 8:CB:533:G:C5'     | 2.15                     | 0.59              |
| 8:CB:600:G:C5      | 8:CB:601:C:C4      | 2.91                     | 0.59              |
| 8:CB:774:G:O3'     | 8:CB:777:G:H1'     | 2.02                     | 0.59              |
| 8:CB:965:C:HO2'    | 8:CB:2272:U:HO2'   | 1.50                     | 0.59              |
| 8:CB:1005:C:H2'    | 8:CB:1006:C:H6     | 1.68                     | 0.59              |
| 8:CB:1036:G:C6     | 8:CB:1120:G:C4     | 2.91                     | 0.59              |
| 8:CB:2452:C:C4     | 8:CB:2453:A:C6     | 2.91                     | 0.59              |
| 8:CB:2469:A:N1     | 8:CB:2482:A:C8     | 2.71                     | 0.59              |
| 8:CB:2529:G:H5'    | 8:CB:2530:A:C5'    | 2.33                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2620:C:OP1   | 10:CD:157:LYS:HG2 | 2.02                     | 0.59              |
| 8:CB:2807:U:H5'   | 8:CB:2808:G:OP2   | 2.02                     | 0.59              |
| 12:CF:12:VAL:HG13 | 12:CF:27:VAL:HG21 | 1.84                     | 0.59              |
| 21:CO:38:GLN:N    | 21:CO:50:ALA:HB3  | 2.18                     | 0.59              |
| 22:CP:110:LYS:HA  | 22:CP:110:LYS:HE2 | 1.84                     | 0.59              |
| 26:CT:31:VAL:O    | 26:CT:32:LEU:HD12 | 2.01                     | 0.59              |
| 29:CW:36:ILE:O    | 29:CW:37:VAL:CG2  | 2.51                     | 0.59              |
| 29:CW:42:THR:OG1  | 29:CW:65:LYS:HA   | 2.02                     | 0.59              |
| 33:DA:15:G:C4     | 33:DA:16:A:C8     | 2.90                     | 0.59              |
| 33:DA:105:G:C5    | 33:DA:106:C:C5    | 2.91                     | 0.59              |
| 33:DA:274:A:H1'   | 33:DA:275:G:O4'   | 2.03                     | 0.59              |
| 33:DA:428:G:H4'   | 33:DA:429:U:OP1   | 2.01                     | 0.59              |
| 33:DA:721:G:H3'   | 50:DR:42:ARG:NH2  | 2.17                     | 0.59              |
| 33:DA:824:G:N1    | 33:DA:877:G:C6    | 2.71                     | 0.59              |
| 33:DA:963:G:O5'   | 33:DA:963:G:H8    | 1.86                     | 0.59              |
| 33:DA:1061:G:N7   | 33:DA:1062:U:C5   | 2.70                     | 0.59              |
| 33:DA:1104:G:N2   | 33:DA:1105:A:C5   | 2.71                     | 0.59              |
| 33:DA:1182:G:H4'  | 33:DA:1183:U:H5'  | 1.85                     | 0.59              |
| 33:DA:1225:A:H3'  | 33:DA:1226:C:H6   | 1.66                     | 0.59              |
| 33:DA:1436:U:H2'  | 33:DA:1437:A:H8   | 1.67                     | 0.59              |
| 33:DA:1468:A:C2   | 33:DA:1469:C:C6   | 2.90                     | 0.59              |
| 33:DA:1505:G:H4'  | 33:DA:1506:U:C5'  | 2.31                     | 0.59              |
| 35:DC:155:ARG:NH2 | 35:DC:192:TYR:HD1 | 2.01                     | 0.59              |
| 37:DE:81:GLN:HE22 | 37:DE:149:PRO:HD3 | 1.68                     | 0.59              |
| 37:DE:100:GLU:HA  | 37:DE:121:ASN:ND2 | 2.18                     | 0.59              |
| 42:DJ:36:VAL:HA   | 42:DJ:76:ILE:HG23 | 1.85                     | 0.59              |
| 48:DP:6:LEU:HB3   | 48:DP:17:TYR:HB3  | 1.83                     | 0.59              |
| 48:DP:6:LEU:O     | 48:DP:7:ALA:HB2   | 2.02                     | 0.59              |
| 49:DQ:64:ARG:HH11 | 49:DQ:64:ARG:HB3  | 1.65                     | 0.59              |
| 1:A0:27:LEU:O     | 1:A0:36:LYS:HB3   | 2.02                     | 0.59              |
| 8:AB:377:G:C2     | 8:AB:398:C:O2     | 2.56                     | 0.59              |
| 8:AB:538:A:C8     | 8:AB:539:G:N7     | 2.71                     | 0.59              |
| 8:AB:638:G:C6     | 8:AB:639:U:N3     | 2.71                     | 0.59              |
| 8:AB:693:A:C2     | 8:AB:694:U:C2     | 2.90                     | 0.59              |
| 8:AB:769:U:H1'    | 8:AB:1379:U:C6    | 2.38                     | 0.59              |
| 8:AB:848:C:H2'    | 8:AB:849:A:H8     | 1.67                     | 0.59              |
| 8:AB:905:A:N1     | 8:AB:906:U:C5     | 2.70                     | 0.59              |
| 8:AB:993:G:OP1    | 24:AR:77:PHE:CD2  | 2.56                     | 0.59              |
| 8:AB:1018:U:H2'   | 8:AB:1019:U:H6    | 1.68                     | 0.59              |
| 8:AB:1242:U:H2'   | 8:AB:1243:C:C6    | 2.38                     | 0.59              |
| 8:AB:1256:G:N3    | 8:AB:1257:C:C5    | 2.71                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1623:G:C5    | 8:AB:1624:U:C5     | 2.90                     | 0.59              |
| 8:AB:1831:G:C2    | 8:AB:1975:G:C2     | 2.91                     | 0.59              |
| 8:AB:1854:A:C2    | 8:AB:2087:G:N3     | 2.70                     | 0.59              |
| 8:AB:2270:A:H2'   | 8:AB:2271:G:C5'    | 2.33                     | 0.59              |
| 8:AB:2290:G:H2'   | 8:AB:2291:U:H6     | 1.68                     | 0.59              |
| 8:AB:2307:G:H2'   | 8:AB:2307:G:N3     | 2.18                     | 0.59              |
| 8:AB:2692:G:O6    | 8:AB:2718:G:C6     | 2.55                     | 0.59              |
| 8:AB:2714:G:O2'   | 8:AB:2715:C:H5'    | 2.03                     | 0.59              |
| 9:AC:82:TYR:HD1   | 9:AC:83:ASP:H      | 1.48                     | 0.59              |
| 10:AD:1:MET:HG2   | 10:AD:1:MET:O      | 2.02                     | 0.59              |
| 10:AD:81:GLU:O    | 10:AD:82:PHE:HB2   | 2.02                     | 0.59              |
| 18:AL:38:GLN:C    | 18:AL:40:SER:N     | 2.54                     | 0.59              |
| 19:AM:28:PHE:HB3  | 19:AM:64:TRP:CZ3   | 2.38                     | 0.59              |
| 19:AM:100:LYS:O   | 19:AM:101:VAL:HG23 | 2.03                     | 0.59              |
| 21:AO:94:ARG:HG2  | 21:AO:96:GLY:H     | 1.68                     | 0.59              |
| 23:AQ:57:ARG:HH21 | 23:AQ:92:LYS:HZ1   | 1.47                     | 0.59              |
| 24:AR:84:ARG:NH1  | 24:AR:84:ARG:CG    | 2.54                     | 0.59              |
| 31:AY:7:THR:CG2   | 31:AY:34:THR:HB    | 2.33                     | 0.59              |
| 31:AY:16:LEU:C    | 31:AY:18:LYS:H     | 2.06                     | 0.59              |
| 33:BA:477:C:H2'   | 33:BA:478:A:C8     | 2.38                     | 0.59              |
| 33:BA:527:G:C2    | 33:BA:528:C:C5     | 2.91                     | 0.59              |
| 33:BA:553:A:C4    | 33:BA:554:A:N7     | 2.71                     | 0.59              |
| 33:BA:668:G:N3    | 47:BO:45:HIS:CD2   | 2.71                     | 0.59              |
| 33:BA:679:C:N3    | 33:BA:712:A:H2     | 1.98                     | 0.59              |
| 33:BA:1309:G:N2   | 33:BA:1329:A:H1'   | 2.18                     | 0.59              |
| 33:BA:1447:A:OP2  | 33:BA:1448:C:N4    | 2.36                     | 0.59              |
| 34:BB:34:ARG:HH11 | 34:BB:34:ARG:C     | 2.06                     | 0.59              |
| 39:BG:21:LEU:H    | 39:BG:21:LEU:HD23  | 1.66                     | 0.59              |
| 43:BK:82:GLU:CG   | 43:BK:107:THR:HB   | 2.33                     | 0.59              |
| 47:BO:52:ARG:HA   | 47:BO:55:LEU:HB3   | 1.84                     | 0.59              |
| 48:BP:34:GLU:HG3  | 48:BP:34:GLU:O     | 2.01                     | 0.59              |
| 1:C0:47:TYR:CG    | 1:C0:51:ARG:HA     | 2.37                     | 0.59              |
| 7:CA:114:C:H5''   | 21:CO:47:VAL:HG23  | 1.83                     | 0.59              |
| 8:CB:347:A:H8     | 8:CB:347:A:C5'     | 2.12                     | 0.59              |
| 8:CB:416:U:C4     | 8:CB:417:C:N4      | 2.70                     | 0.59              |
| 8:CB:796:C:C6     | 8:CB:796:C:C3'     | 2.85                     | 0.59              |
| 8:CB:848:C:H2'    | 8:CB:849:A:H8      | 1.68                     | 0.59              |
| 8:CB:1003:G:H8    | 8:CB:1003:G:C5'    | 2.15                     | 0.59              |
| 8:CB:1339:G:H5''  | 26:CT:19:LYS:HG3   | 1.84                     | 0.59              |
| 8:CB:1469:A:C2    | 8:CB:1470:A:C4     | 2.90                     | 0.59              |
| 8:CB:2051:A:H5''  | 8:CB:2051:A:C8     | 2.37                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2439:A:H4'   | 8:CB:2440:C:C5'    | 2.33                     | 0.59              |
| 9:CC:63:ILE:HD11  | 9:CC:83:ASP:OD1    | 2.03                     | 0.59              |
| 9:CC:107:LYS:HB2  | 9:CC:194:VAL:HG11  | 1.84                     | 0.59              |
| 10:CD:52:THR:O    | 10:CD:75:ALA:HA    | 2.03                     | 0.59              |
| 10:CD:54:ALA:C    | 10:CD:56:LYS:H     | 2.04                     | 0.59              |
| 11:CE:46:GLN:OE1  | 11:CE:86:ALA:HB1   | 2.03                     | 0.59              |
| 11:CE:59:PRO:HB2  | 11:CE:60:TRP:CD1   | 2.38                     | 0.59              |
| 15:CI:27:LEU:CD2  | 15:CI:34:ILE:HD12  | 2.33                     | 0.59              |
| 16:CJ:64:VAL:HG21 | 16:CJ:90:GLU:OE2   | 2.03                     | 0.59              |
| 17:CK:35:VAL:HG11 | 17:CK:69:VAL:HG22  | 1.85                     | 0.59              |
| 19:CM:41:LEU:CD1  | 19:CM:95:LEU:HD13  | 2.29                     | 0.59              |
| 29:CW:36:ILE:HG23 | 29:CW:68:PHE:CD1   | 2.35                     | 0.59              |
| 29:CW:43:LYS:O    | 29:CW:44:PHE:HB2   | 2.02                     | 0.59              |
| 33:DA:15:G:C4     | 33:DA:16:A:N7      | 2.71                     | 0.59              |
| 33:DA:54:C:O2'    | 33:DA:55:A:H5''    | 2.03                     | 0.59              |
| 33:DA:719:C:C6    | 33:DA:720:C:C5     | 2.88                     | 0.59              |
| 33:DA:922:G:C2    | 33:DA:1396:A:C2    | 2.91                     | 0.59              |
| 33:DA:976:G:H1'   | 33:DA:1363:A:H62   | 1.66                     | 0.59              |
| 33:DA:1138:G:H2'  | 33:DA:1140:C:H5''  | 1.84                     | 0.59              |
| 35:DC:166:TRP:CG  | 35:DC:167:TYR:N    | 2.70                     | 0.59              |
| 35:DC:174:LEU:O   | 35:DC:174:LEU:HD23 | 2.03                     | 0.59              |
| 36:DD:179:GLY:O   | 36:DD:180:THR:HB   | 2.03                     | 0.59              |
| 45:DM:16:ILE:C    | 45:DM:18:LEU:H     | 2.05                     | 0.59              |
| 49:DQ:64:ARG:NH1  | 49:DQ:64:ARG:HB3   | 2.18                     | 0.59              |
| 8:AB:160:A:H2'    | 8:AB:161:A:C8      | 2.38                     | 0.59              |
| 8:AB:195:A:H3'    | 8:AB:196:A:H4'     | 1.84                     | 0.59              |
| 8:AB:399:U:P      | 32:AZ:49:ARG:HH22  | 2.26                     | 0.59              |
| 8:AB:581:C:H5'    | 23:AQ:30:VAL:HG12  | 1.85                     | 0.59              |
| 8:AB:699:A:C2     | 8:AB:734:A:H1'     | 2.38                     | 0.59              |
| 8:AB:751:A:C5     | 8:AB:789:A:C6      | 2.91                     | 0.59              |
| 8:AB:794:A:H2'    | 8:AB:795:C:C6      | 2.36                     | 0.59              |
| 8:AB:955:U:H5''   | 8:AB:956:G:OP2     | 2.02                     | 0.59              |
| 8:AB:1298:C:N3    | 8:AB:1642:G:N2     | 2.42                     | 0.59              |
| 8:AB:1438:U:O2'   | 8:AB:1439:A:O4'    | 2.18                     | 0.59              |
| 8:AB:1854:A:H62   | 8:AB:1888:G:H8     | 1.50                     | 0.59              |
| 8:AB:2074:U:N3    | 8:AB:2436:G:N2     | 2.51                     | 0.59              |
| 8:AB:2369:A:H2'   | 8:AB:2370:G:H8     | 1.67                     | 0.59              |
| 8:AB:2814:A:H2'   | 8:AB:2815:C:H6     | 1.67                     | 0.59              |
| 11:AE:37:ALA:HA   | 11:AE:40:ARG:NH2   | 2.16                     | 0.59              |
| 13:AG:169:ARG:NH1 | 13:AG:170:THR:H    | 2.01                     | 0.59              |
| 17:AK:2:ILE:HG21  | 17:AK:67:LYS:CE    | 2.32                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:AP:47:ILE:CG2  | 22:AP:48:ALA:N     | 2.66                     | 0.59              |
| 25:AS:4:ILE:HG12  | 25:AS:106:VAL:HG12 | 1.84                     | 0.59              |
| 31:AY:7:THR:HG22  | 31:AY:34:THR:HB    | 1.83                     | 0.59              |
| 32:AZ:34:LEU:HA   | 32:AZ:44:PHE:HB2   | 1.84                     | 0.59              |
| 33:BA:858:G:C2    | 33:BA:869:G:H2'    | 2.38                     | 0.59              |
| 33:BA:881:G:C2    | 33:BA:882:C:C2     | 2.91                     | 0.59              |
| 33:BA:974:A:OP2   | 46:BN:70:HIS:HB3   | 2.03                     | 0.59              |
| 33:BA:1038:C:O5'  | 33:BA:1038:C:H6    | 1.85                     | 0.59              |
| 33:BA:1077:G:C6   | 33:BA:1081:A:N6    | 2.71                     | 0.59              |
| 34:BB:45:THR:HG23 | 34:BB:200:PRO:CG   | 2.24                     | 0.59              |
| 36:BD:77:GLU:O    | 36:BD:81:LEU:HG    | 2.03                     | 0.59              |
| 37:BE:151:MET:HB2 | 37:BE:155:LYS:HB2  | 1.84                     | 0.59              |
| 45:BM:33:LEU:HD23 | 45:BM:36:ALA:HB3   | 1.85                     | 0.59              |
| 47:BO:34:GLN:O    | 47:BO:38:LEU:HD23  | 2.02                     | 0.59              |
| 1:C0:53:VAL:HG13  | 1:C0:54:ILE:H      | 1.67                     | 0.59              |
| 5:C4:32:LYS:O     | 5:C4:34:LYS:N      | 2.35                     | 0.59              |
| 7:CA:69:G:H5'     | 7:CA:70:C:OP2      | 2.02                     | 0.59              |
| 8:CB:75:G:H4'     | 30:CX:48:ARG:NH1   | 2.18                     | 0.59              |
| 8:CB:529:A:N7     | 8:CB:2023:C:N4     | 2.50                     | 0.59              |
| 8:CB:857:G:O2'    | 8:CB:858:G:H5'     | 2.03                     | 0.59              |
| 8:CB:873:C:C6     | 8:CB:874:G:C8      | 2.90                     | 0.59              |
| 8:CB:1116:G:H2'   | 8:CB:1117:C:H5'    | 1.83                     | 0.59              |
| 8:CB:1447:C:H2'   | 8:CB:1448:G:C8     | 2.37                     | 0.59              |
| 8:CB:1581:G:C5    | 8:CB:1582:C:C5     | 2.90                     | 0.59              |
| 8:CB:1708:C:H2'   | 8:CB:1709:U:C5     | 2.37                     | 0.59              |
| 8:CB:2020:A:O2'   | 8:CB:2021:C:H5'    | 2.03                     | 0.59              |
| 8:CB:2103:C:H3'   | 8:CB:2104:C:O2     | 2.03                     | 0.59              |
| 8:CB:2547:A:H2'   | 8:CB:2548:U:C6     | 2.38                     | 0.59              |
| 8:CB:2886:A:N3    | 8:CB:2887:A:N7     | 2.51                     | 0.59              |
| 10:CD:34:VAL:HG22 | 10:CD:35:THR:H     | 1.68                     | 0.59              |
| 17:CK:4:GLU:OE2   | 17:CK:23:LYS:HD2   | 2.02                     | 0.59              |
| 18:CL:110:VAL:H   | 18:CL:126:ARG:NH2  | 2.01                     | 0.59              |
| 19:CM:58:LYS:CD   | 19:CM:60:GLN:HB2   | 2.29                     | 0.59              |
| 21:CO:14:ALA:O    | 21:CO:17:LYS:N     | 2.35                     | 0.59              |
| 24:CR:47:VAL:HG13 | 24:CR:48:LYS:H     | 1.67                     | 0.59              |
| 24:CR:50:GLY:O    | 24:CR:51:VAL:CB    | 2.50                     | 0.59              |
| 26:CT:77:ARG:HG2  | 26:CT:78:SER:H     | 1.68                     | 0.59              |
| 33:DA:40:C:H2'    | 33:DA:41:G:H8      | 1.67                     | 0.59              |
| 33:DA:405:U:H4'   | 33:DA:498:A:C5     | 2.37                     | 0.59              |
| 33:DA:765:G:H1'   | 33:DA:812:G:H22    | 1.65                     | 0.59              |
| 33:DA:1525:G:H5'' | 33:DA:1525:G:H8    | 1.68                     | 0.59              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:DB:66:ILE:HG23  | 34:DB:159:ALA:HB3  | 1.83                     | 0.59              |
| 37:DE:44:ARG:HB3   | 37:DE:70:MET:HB3   | 1.85                     | 0.59              |
| 50:DR:31:TYR:N     | 50:DR:31:TYR:CD1   | 2.71                     | 0.59              |
| 8:AB:366:C:H6      | 8:AB:366:C:O5'     | 1.86                     | 0.58              |
| 8:AB:1178:C:H2'    | 8:AB:1179:G:H8     | 1.64                     | 0.58              |
| 8:AB:1218:G:C6     | 8:AB:1219:U:N3     | 2.71                     | 0.58              |
| 8:AB:1616:A:H4'    | 8:AB:1617:C:OP2    | 2.02                     | 0.58              |
| 8:AB:1906:G:H3'    | 8:AB:1906:G:C8     | 2.38                     | 0.58              |
| 8:AB:2407:A:C6     | 8:AB:2408:U:O4     | 2.56                     | 0.58              |
| 8:AB:2519:U:C2     | 8:AB:2541:A:N1     | 2.70                     | 0.58              |
| 8:AB:2891:U:H3'    | 8:AB:2891:U:C6     | 2.35                     | 0.58              |
| 9:AC:212:TRP:CZ2   | 9:AC:216:ARG:HD2   | 2.38                     | 0.58              |
| 10:AD:25:THR:HA    | 10:AD:188:LEU:HD12 | 1.85                     | 0.58              |
| 10:AD:49:GLN:NE2   | 10:AD:51:THR:OG1   | 2.35                     | 0.58              |
| 10:AD:78:GLY:C     | 10:AD:79:LEU:HG    | 2.23                     | 0.58              |
| 14:AH:117:LEU:HD21 | 14:AH:128:HIS:HE1  | 1.67                     | 0.58              |
| 15:AI:18:ASN:H     | 15:AI:19:PRO:CD    | 2.09                     | 0.58              |
| 15:AI:83:ALA:HB2   | 15:AI:100:ILE:HD11 | 1.84                     | 0.58              |
| 16:AJ:7:LYS:HD3    | 16:AJ:7:LYS:N      | 2.18                     | 0.58              |
| 16:AJ:65:THR:OG1   | 16:AJ:66:GLY:N     | 2.36                     | 0.58              |
| 16:AJ:89:PHE:HD2   | 16:AJ:89:PHE:H     | 1.48                     | 0.58              |
| 16:AJ:110:PRO:HB2  | 16:AJ:115:GLY:HA3  | 1.83                     | 0.58              |
| 18:AL:131:ALA:HA   | 18:AL:134:ALA:HB3  | 1.84                     | 0.58              |
| 22:AP:62:LYS:HA    | 22:AP:74:GLN:CD    | 2.23                     | 0.58              |
| 24:AR:5:PHE:CD1    | 24:AR:40:MET:HB2   | 2.38                     | 0.58              |
| 29:AW:27:GLY:HA2   | 29:AW:60:ALA:HA    | 1.84                     | 0.58              |
| 29:AW:40:ARG:HG3   | 29:AW:40:ARG:NH1   | 2.16                     | 0.58              |
| 33:BA:9:G:N2       | 33:BA:26:A:C4      | 2.71                     | 0.58              |
| 33:BA:71:A:H1'     | 33:BA:72:A:H5'     | 1.85                     | 0.58              |
| 33:BA:227:G:C4     | 33:BA:228:A:C8     | 2.90                     | 0.58              |
| 33:BA:248:C:H2'    | 33:BA:249:U:H6     | 1.67                     | 0.58              |
| 33:BA:509:A:H3'    | 33:BA:509:A:C8     | 2.37                     | 0.58              |
| 33:BA:582:C:H5''   | 33:BA:583:A:OP2    | 2.03                     | 0.58              |
| 33:BA:947:G:H1'    | 33:BA:1333:A:H2    | 1.64                     | 0.58              |
| 33:BA:1014:A:H5''  | 51:BS:13:HIS:HB3   | 1.85                     | 0.58              |
| 33:BA:1107:C:H2'   | 33:BA:1108:G:O5'   | 2.03                     | 0.58              |
| 33:BA:1434:A:H2'   | 33:BA:1435:G:C8    | 2.38                     | 0.58              |
| 35:BC:87:ARG:HG2   | 35:BC:87:ARG:O     | 2.03                     | 0.58              |
| 37:BE:23:THR:C     | 37:BE:24:VAL:HG12  | 2.22                     | 0.58              |
| 40:BH:28:SER:HB2   | 40:BH:56:PRO:HB2   | 1.84                     | 0.58              |
| 44:BL:33:CYS:HB3   | 44:BL:77:SER:O     | 2.03                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:BS:29:PRO:HG3  | 51:BS:47:THR:HB    | 1.84                     | 0.58              |
| 53:BU:14:ALA:HA   | 53:BU:16:ARG:CZ    | 2.32                     | 0.58              |
| 7:CA:49:C:H2'     | 7:CA:50:A:H8       | 1.68                     | 0.58              |
| 8:CB:64:A:H8      | 26:CT:69:ARG:HD2   | 1.68                     | 0.58              |
| 8:CB:422:A:H2'    | 8:CB:423:A:C8      | 2.38                     | 0.58              |
| 8:CB:565:C:H4'    | 8:CB:1253:A:C6     | 2.37                     | 0.58              |
| 8:CB:657:U:C2'    | 8:CB:658:U:C6      | 2.77                     | 0.58              |
| 8:CB:748:G:C8     | 8:CB:750:A:C8      | 2.90                     | 0.58              |
| 8:CB:813:U:H2'    | 8:CB:814:C:C6      | 2.37                     | 0.58              |
| 8:CB:827:U:O5'    | 8:CB:828:U:C5      | 2.56                     | 0.58              |
| 8:CB:1456:G:C5    | 8:CB:1457:U:C5     | 2.91                     | 0.58              |
| 8:CB:2234:G:H2'   | 8:CB:2235:G:C8     | 2.36                     | 0.58              |
| 8:CB:2303:G:C6    | 8:CB:2304:G:N7     | 2.70                     | 0.58              |
| 8:CB:2304:G:H4'   | 12:CF:129:MET:N    | 2.18                     | 0.58              |
| 8:CB:2307:G:N2    | 8:CB:2308:G:O2'    | 2.36                     | 0.58              |
| 8:CB:2571:U:HO2'  | 8:CB:2572:A:P      | 2.26                     | 0.58              |
| 8:CB:2595:G:O6    | 9:CC:237:ARG:NH2   | 2.36                     | 0.58              |
| 8:CB:2744:G:C4    | 8:CB:2761:A:C2     | 2.91                     | 0.58              |
| 8:CB:2856:A:H5'   | 8:CB:2856:A:C8     | 2.38                     | 0.58              |
| 15:CI:54:ILE:O    | 15:CI:54:ILE:HG22  | 2.02                     | 0.58              |
| 17:CK:43:ILE:HG22 | 17:CK:54:LYS:HA    | 1.85                     | 0.58              |
| 18:CL:33:ARG:CG   | 24:CR:85:LYS:HE2   | 2.33                     | 0.58              |
| 22:CP:62:LYS:HE2  | 22:CP:74:GLN:HG3   | 1.83                     | 0.58              |
| 25:CS:4:ILE:HG22  | 25:CS:5:ALA:H      | 1.67                     | 0.58              |
| 29:CW:27:GLY:HA2  | 29:CW:60:ALA:HA    | 1.84                     | 0.58              |
| 29:CW:46:ALA:O    | 29:CW:48:ALA:N     | 2.36                     | 0.58              |
| 33:DA:324:G:N2    | 33:DA:327:A:C5     | 2.71                     | 0.58              |
| 33:DA:765:G:C5    | 33:DA:812:G:C4     | 2.91                     | 0.58              |
| 33:DA:857:C:H2'   | 33:DA:857:C:O2     | 2.02                     | 0.58              |
| 33:DA:1278:G:H5'' | 33:DA:1279:G:C8    | 2.37                     | 0.58              |
| 33:DA:1304:G:H2'  | 33:DA:1305:G:N3    | 2.18                     | 0.58              |
| 33:DA:1353:G:C2'  | 33:DA:1354:U:H5''  | 2.33                     | 0.58              |
| 33:DA:1398:A:H5'  | 33:DA:1399:C:OP1   | 2.03                     | 0.58              |
| 33:DA:1441:A:H8   | 33:DA:1442:G:C8    | 2.21                     | 0.58              |
| 34:DB:83:ALA:HB1  | 34:DB:90:PHE:CD2   | 2.38                     | 0.58              |
| 36:DD:53:GLN:HB2  | 36:DD:198:LEU:HG   | 1.84                     | 0.58              |
| 38:DF:7:VAL:HG22  | 38:DF:8:PHE:N      | 2.18                     | 0.58              |
| 40:DH:84:ILE:HG22 | 40:DH:124:ILE:HG23 | 1.84                     | 0.58              |
| 41:DI:51:LEU:N    | 41:DI:51:LEU:HD23  | 2.18                     | 0.58              |
| 44:DL:35:ARG:HE   | 44:DL:36:VAL:H     | 1.50                     | 0.58              |
| 52:DT:2:ASN:CG    | 52:DT:3:ILE:N      | 2.51                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:A2:13:ASN:O     | 3:A2:16:HIS:N     | 2.30                     | 0.58              |
| 4:A3:16:THR:HG23  | 4:A3:20:GLY:O     | 2.03                     | 0.58              |
| 5:A4:1:MET:HG3    | 8:AB:2479:U:P     | 2.42                     | 0.58              |
| 7:AA:46:A:N7      | 7:AA:47:C:C4      | 2.70                     | 0.58              |
| 8:AB:382:A:C2     | 8:AB:383:C:C1'    | 2.86                     | 0.58              |
| 8:AB:507:A:H1'    | 8:AB:509:C:N3     | 2.18                     | 0.58              |
| 8:AB:532:A:N7     | 8:AB:2021:C:C2'   | 2.66                     | 0.58              |
| 8:AB:567:U:H5''   | 55:AB:4382:HOH:O  | 2.03                     | 0.58              |
| 8:AB:571:U:N3     | 8:AB:575:A:N7     | 2.51                     | 0.58              |
| 8:AB:792:A:C6     | 8:AB:2440:C:C5    | 2.91                     | 0.58              |
| 8:AB:856:G:C4'    | 29:AW:23:LYS:HZ2  | 2.15                     | 0.58              |
| 8:AB:1586:A:H3'   | 8:AB:1586:A:H8    | 1.67                     | 0.58              |
| 8:AB:1601:G:OP2   | 26:AT:62:VAL:HG11 | 2.01                     | 0.58              |
| 8:AB:1756:G:C8    | 8:AB:1756:G:C3'   | 2.79                     | 0.58              |
| 8:AB:1829:A:C8    | 8:AB:1829:A:H5'   | 2.36                     | 0.58              |
| 8:AB:2455:G:N2    | 8:AB:2456:C:C2    | 2.71                     | 0.58              |
| 8:AB:2751:G:C5'   | 13:AG:1:SER:HB2   | 2.33                     | 0.58              |
| 8:AB:2776:A:O5'   | 8:AB:2776:A:H2'   | 2.03                     | 0.58              |
| 9:AC:128:THR:HG23 | 9:AC:189:ALA:O    | 2.03                     | 0.58              |
| 9:AC:204:LEU:CD1  | 9:AC:210:ALA:HB1  | 2.33                     | 0.58              |
| 9:AC:208:GLY:O    | 9:AC:210:ALA:N    | 2.36                     | 0.58              |
| 9:AC:268:ARG:NE   | 9:AC:268:ARG:HA   | 2.17                     | 0.58              |
| 12:AF:69:ALA:O    | 12:AF:70:ARG:HG3  | 2.02                     | 0.58              |
| 16:AJ:21:THR:HG22 | 16:AJ:58:ASN:OD1  | 2.02                     | 0.58              |
| 18:AL:29:LYS:O    | 18:AL:30:THR:HG23 | 2.03                     | 0.58              |
| 21:AO:35:ILE:HG21 | 21:AO:72:ALA:HA   | 1.84                     | 0.58              |
| 22:AP:17:PRO:HA   | 22:AP:83:ILE:CG2  | 2.33                     | 0.58              |
| 22:AP:26:GLU:HB3  | 22:AP:46:VAL:HG12 | 1.85                     | 0.58              |
| 22:AP:80:VAL:O    | 22:AP:81:ASP:HB3  | 2.03                     | 0.58              |
| 23:AQ:94:LEU:C    | 23:AQ:96:ASP:N    | 2.54                     | 0.58              |
| 24:AR:5:PHE:N     | 24:AR:12:HIS:ND1  | 2.51                     | 0.58              |
| 33:BA:576:C:H3'   | 33:BA:577:G:C5'   | 2.28                     | 0.58              |
| 33:BA:608:A:O5'   | 33:BA:608:A:C8    | 2.55                     | 0.58              |
| 33:BA:625:U:H4'   | 48:BP:16:PHE:CZ   | 2.38                     | 0.58              |
| 33:BA:714:G:O2'   | 33:BA:715:A:H5'   | 2.03                     | 0.58              |
| 33:BA:988:G:H1    | 33:BA:1217:C:N4   | 2.00                     | 0.58              |
| 33:BA:1008:U:H3'  | 33:BA:1009:U:H5'' | 1.83                     | 0.58              |
| 33:BA:1192:C:C5   | 33:BA:1193:G:C8   | 2.90                     | 0.58              |
| 33:BA:1244:G:H2'  | 33:BA:1245:C:O4'  | 2.03                     | 0.58              |
| 33:BA:1347:G:N2   | 33:BA:1373:G:C4   | 2.70                     | 0.58              |
| 34:BB:103:TRP:HA  | 34:BB:106:VAL:HB  | 1.86                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:BE:100:GLU:HA  | 37:BE:121:ASN:ND2 | 2.18                     | 0.58              |
| 42:BJ:51:VAL:HG13 | 46:BN:80:ARG:HA   | 1.84                     | 0.58              |
| 46:BN:64:ARG:HG3  | 46:BN:64:ARG:NH1  | 1.95                     | 0.58              |
| 3:C2:26:ASN:HB3   | 8:CB:682:G:H4'    | 1.85                     | 0.58              |
| 5:C4:26:ILE:O     | 5:C4:27:CYS:HB2   | 2.03                     | 0.58              |
| 8:CB:136:G:N2     | 26:CT:3:ARG:NE    | 2.36                     | 0.58              |
| 8:CB:250:G:H5'    | 18:CL:60:ARG:CD   | 2.32                     | 0.58              |
| 8:CB:277:G:H4'    | 8:CB:278:A:N7     | 2.19                     | 0.58              |
| 8:CB:465:G:N2     | 8:CB:466:A:C2     | 2.72                     | 0.58              |
| 8:CB:478:A:C6     | 8:CB:480:A:C6     | 2.90                     | 0.58              |
| 8:CB:568:U:O2     | 8:CB:570:G:O5'    | 2.21                     | 0.58              |
| 8:CB:680:C:O2     | 8:CB:681:G:C8     | 2.56                     | 0.58              |
| 8:CB:945:A:C2     | 8:CB:2448:A:C1'   | 2.85                     | 0.58              |
| 8:CB:1053:C:N3    | 8:CB:1106:G:N2    | 2.50                     | 0.58              |
| 8:CB:1093:G:N2    | 8:CB:1098:A:H62   | 2.02                     | 0.58              |
| 8:CB:1195:G:H5''  | 8:CB:1195:G:C8    | 2.38                     | 0.58              |
| 8:CB:1569:A:N6    | 8:CB:1570:A:C6    | 2.71                     | 0.58              |
| 8:CB:1598:A:C2    | 8:CB:1599:U:N1    | 2.69                     | 0.58              |
| 8:CB:1899:A:O2'   | 8:CB:1901:A:H5''  | 2.02                     | 0.58              |
| 8:CB:1913:A:N7    | 33:DA:1492:A:C2   | 2.71                     | 0.58              |
| 8:CB:1959:G:C6    | 8:CB:1960:A:C5    | 2.92                     | 0.58              |
| 8:CB:2588:G:H2'   | 8:CB:2589:A:H5'   | 1.85                     | 0.58              |
| 9:CC:78:GLU:O     | 9:CC:79:ARG:CB    | 2.50                     | 0.58              |
| 9:CC:141:HIS:HB3  | 9:CC:190:THR:HB   | 1.85                     | 0.58              |
| 9:CC:179:GLU:CG   | 9:CC:266:ILE:CA   | 2.79                     | 0.58              |
| 10:CD:23:PRO:HA   | 10:CD:190:LYS:HA  | 1.84                     | 0.58              |
| 10:CD:77:ARG:HH11 | 10:CD:77:ARG:CB   | 2.15                     | 0.58              |
| 12:CF:67:THR:HG1  | 12:CF:85:GLY:HA3  | 1.68                     | 0.58              |
| 14:CH:47:PHE:O    | 14:CH:50:ARG:HG2  | 2.02                     | 0.58              |
| 14:CH:72:ILE:O    | 14:CH:75:LEU:HG   | 2.04                     | 0.58              |
| 23:CQ:13:HIS:CE1  | 23:CQ:31:TYR:CE1  | 2.92                     | 0.58              |
| 28:CV:56:PHE:CD2  | 28:CV:56:PHE:C    | 2.77                     | 0.58              |
| 29:CW:35:ILE:HG13 | 29:CW:36:ILE:H    | 1.68                     | 0.58              |
| 29:CW:66:VAL:HG13 | 29:CW:67:LYS:N    | 2.18                     | 0.58              |
| 33:DA:161:A:O2'   | 33:DA:162:A:H5'   | 2.03                     | 0.58              |
| 33:DA:515:G:N2    | 33:DA:537:G:N3    | 2.51                     | 0.58              |
| 33:DA:600:A:H1'   | 33:DA:639:G:N2    | 2.18                     | 0.58              |
| 33:DA:711:G:H5''  | 33:DA:711:G:H8    | 1.68                     | 0.58              |
| 33:DA:725:G:C4    | 33:DA:726:C:C5    | 2.91                     | 0.58              |
| 33:DA:731:G:H2'   | 33:DA:732:C:H5'   | 1.85                     | 0.58              |
| 33:DA:947:G:C5'   | 45:DM:106:ARG:HB2 | 2.28                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:1053:G:OP1  | 33:DA:1054:C:H6    | 1.86                     | 0.58              |
| 33:DA:1420:U:H2'  | 33:DA:1421:G:H5'   | 1.84                     | 0.58              |
| 33:DA:1424:U:C2   | 33:DA:1425:U:O2    | 2.56                     | 0.58              |
| 33:DA:1468:A:H2'  | 33:DA:1469:C:H6    | 1.67                     | 0.58              |
| 33:DA:1516:G:N1   | 33:DA:1520:C:O2    | 2.36                     | 0.58              |
| 37:DE:20:VAL:HG22 | 37:DE:21:SER:H     | 1.68                     | 0.58              |
| 38:DF:71:ILE:HG13 | 38:DF:74:LEU:HD12  | 1.86                     | 0.58              |
| 2:A1:8:ILE:HG21   | 2:A1:27:ARG:NE     | 2.17                     | 0.58              |
| 8:AB:38:A:N3      | 11:AE:44:ARG:HB3   | 2.17                     | 0.58              |
| 8:AB:448:U:H3'    | 8:AB:449:A:H5'     | 1.85                     | 0.58              |
| 8:AB:529:A:C5     | 8:AB:2042:A:C2     | 2.91                     | 0.58              |
| 8:AB:562:U:H1'    | 8:AB:2035:G:O2'    | 2.03                     | 0.58              |
| 8:AB:636:G:N1     | 18:AL:76:GLU:HG2   | 2.17                     | 0.58              |
| 8:AB:836:G:C5     | 8:AB:837:C:C5      | 2.91                     | 0.58              |
| 8:AB:962:G:H2'    | 8:AB:963:U:O4'     | 2.03                     | 0.58              |
| 8:AB:1130:U:C5    | 8:AB:2026:U:OP2    | 2.56                     | 0.58              |
| 8:AB:1210:G:C5'   | 8:AB:1211:C:H3'    | 2.32                     | 0.58              |
| 8:AB:1211:C:H4'   | 8:AB:1212:G:OP2    | 2.03                     | 0.58              |
| 8:AB:1255:U:O4    | 8:AB:2060:A:H5'    | 2.02                     | 0.58              |
| 8:AB:1901:A:O2'   | 8:AB:1902:C:H5'    | 2.03                     | 0.58              |
| 8:AB:2136:G:C5    | 8:AB:2137:U:C5     | 2.91                     | 0.58              |
| 8:AB:2519:U:C4    | 8:AB:2541:A:C6     | 2.92                     | 0.58              |
| 8:AB:2542:A:H5''  | 8:AB:2766:A:O2'    | 2.03                     | 0.58              |
| 8:AB:2733:A:C2    | 8:AB:2734:A:C4     | 2.91                     | 0.58              |
| 9:AC:116:GLN:N    | 9:AC:127:ASN:HB2   | 2.17                     | 0.58              |
| 9:AC:257:ARG:HH21 | 9:AC:261:ARG:HG2   | 1.68                     | 0.58              |
| 13:AG:84:LYS:H    | 13:AG:131:VAL:HG23 | 1.67                     | 0.58              |
| 16:AJ:89:PHE:CD2  | 16:AJ:92:MET:HB2   | 2.38                     | 0.58              |
| 19:AM:43:ALA:C    | 19:AM:45:GLN:N     | 2.56                     | 0.58              |
| 20:AN:9:GLN:HG3   | 20:AN:10:LEU:N     | 2.18                     | 0.58              |
| 20:AN:103:ARG:HB3 | 20:AN:106:ASP:OD1  | 2.03                     | 0.58              |
| 21:AO:61:GLN:O    | 21:AO:62:LEU:HB3   | 2.02                     | 0.58              |
| 22:AP:64:SER:HB3  | 22:AP:71:ARG:HH11  | 1.68                     | 0.58              |
| 29:AW:39:GLN:OE1  | 29:AW:66:VAL:CG2   | 2.50                     | 0.58              |
| 33:BA:231:U:H2'   | 33:BA:232:G:H5''   | 1.84                     | 0.58              |
| 33:BA:674:G:H1'   | 50:BR:69:TYR:CE2   | 2.38                     | 0.58              |
| 33:BA:1344:C:H1'  | 33:BA:1349:A:H4'   | 1.84                     | 0.58              |
| 33:BA:1431:A:C5   | 33:BA:1432:G:N1    | 2.71                     | 0.58              |
| 36:BD:61:ARG:HH12 | 36:BD:62:ARG:HH21  | 1.49                     | 0.58              |
| 37:BE:32:PHE:HD2  | 37:BE:32:PHE:H     | 1.51                     | 0.58              |
| 47:BO:32:THR:HA   | 47:BO:62:ARG:NH1   | 2.18                     | 0.58              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 48:BP:46:LYS:NZ    | 48:BP:49:GLY:HA2  | 2.19                     | 0.58              |
| 3:C2:44:VAL:O      | 3:C2:45:SER:C     | 2.40                     | 0.58              |
| 4:C3:15:LYS:HE2    | 4:C3:21:PHE:HE1   | 1.67                     | 0.58              |
| 7:CA:105:G:C4      | 7:CA:106:G:C8     | 2.91                     | 0.58              |
| 8:CB:98:G:H5''     | 8:CB:98:G:H8      | 1.68                     | 0.58              |
| 8:CB:221:A:C2      | 8:CB:233:A:C8     | 2.91                     | 0.58              |
| 8:CB:252:G:N3      | 8:CB:253:C:H6     | 2.01                     | 0.58              |
| 8:CB:298:G:H8      | 8:CB:298:G:O5'    | 1.85                     | 0.58              |
| 8:CB:519:U:O2'     | 8:CB:520:G:H5'    | 2.03                     | 0.58              |
| 8:CB:588:U:OP1     | 18:CL:29:LYS:HD2  | 2.04                     | 0.58              |
| 8:CB:1242:U:H2'    | 8:CB:1243:C:C6    | 2.38                     | 0.58              |
| 8:CB:1275:A:N3     | 8:CB:1275:A:C3'   | 2.64                     | 0.58              |
| 8:CB:1562:U:C2     | 8:CB:1563:U:C6    | 2.92                     | 0.58              |
| 8:CB:1566:A:C6     | 9:CC:213:ARG:CZ   | 2.87                     | 0.58              |
| 8:CB:1701:A:H2'    | 8:CB:1702:G:H5'   | 1.83                     | 0.58              |
| 8:CB:1771:C:H42    | 8:CB:1772:A:N6    | 2.01                     | 0.58              |
| 8:CB:2048:G:H1     | 8:CB:2620:C:N4    | 2.00                     | 0.58              |
| 8:CB:2331:G:HO2'   | 29:CW:69:GLU:HG3  | 1.68                     | 0.58              |
| 8:CB:2345:G:C2     | 8:CB:2381:A:C5    | 2.91                     | 0.58              |
| 8:CB:2519:U:C6     | 8:CB:2542:A:N6    | 2.71                     | 0.58              |
| 8:CB:2843:G:O2'    | 8:CB:2844:G:H5'   | 2.03                     | 0.58              |
| 9:CC:19:VAL:HG12   | 9:CC:20:ASN:N     | 2.18                     | 0.58              |
| 11:CE:24:ASN:ND2   | 11:CE:107:SER:HB3 | 2.18                     | 0.58              |
| 13:CG:108:PHE:CZ   | 13:CG:151:ARG:NH1 | 2.71                     | 0.58              |
| 14:CH:5:LEU:O      | 14:CH:6:LEU:HD23  | 2.03                     | 0.58              |
| 21:CO:27:VAL:HG21  | 21:CO:38:GLN:HB3  | 1.84                     | 0.58              |
| 23:CQ:44:TYR:O     | 23:CQ:48:ASP:CB   | 2.49                     | 0.58              |
| 23:CQ:97:ILE:HD12  | 24:CR:13:ARG:HG2  | 1.86                     | 0.58              |
| 24:CR:5:PHE:CB     | 24:CR:12:HIS:ND1  | 2.66                     | 0.58              |
| 25:CS:17:VAL:HG12  | 25:CS:43:ALA:HB1  | 1.86                     | 0.58              |
| 25:CS:56:ALA:HA    | 25:CS:59:GLU:CB   | 2.31                     | 0.58              |
| 33:DA:401:C:H2'    | 33:DA:402:G:H8    | 1.68                     | 0.58              |
| 33:DA:696:A:H2'    | 33:DA:697:U:H6    | 1.67                     | 0.58              |
| 33:DA:743:A:H3'    | 33:DA:743:A:C8    | 2.38                     | 0.58              |
| 33:DA:756:C:O2'    | 33:DA:757:U:H5'   | 2.03                     | 0.58              |
| 33:DA:978:A:C6     | 33:DA:1319:A:N3   | 2.70                     | 0.58              |
| 33:DA:1227:A:H8    | 33:DA:1227:A:C5'  | 2.15                     | 0.58              |
| 33:DA:1250:A:H5'   | 41:DI:69:GLY:O    | 2.03                     | 0.58              |
| 33:DA:1427:C:H2'   | 33:DA:1428:A:H5'  | 1.85                     | 0.58              |
| 34:DB:216:VAL:HG23 | 34:DB:217:ALA:N   | 2.19                     | 0.58              |
| 35:DC:146:LYS:HD3  | 35:DC:203:LYS:O   | 2.03                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 49:DQ:45:VAL:HG22 | 49:DQ:72:TRP:HB2  | 1.86                     | 0.58              |
| 7:AA:69:G:H5'     | 7:AA:70:C:OP2     | 2.02                     | 0.58              |
| 7:AA:80:U:O2'     | 7:AA:81:G:H5'     | 2.03                     | 0.58              |
| 7:AA:84:G:N1      | 7:AA:85:G:C5      | 2.72                     | 0.58              |
| 7:AA:106:G:C6     | 7:AA:107:G:C6     | 2.91                     | 0.58              |
| 8:AB:62:U:C5      | 8:AB:63:A:C6      | 2.90                     | 0.58              |
| 8:AB:415:A:C2     | 8:AB:2409:G:C2    | 2.92                     | 0.58              |
| 8:AB:416:U:C4     | 8:AB:417:C:N4     | 2.71                     | 0.58              |
| 8:AB:428:A:H2'    | 8:AB:429:A:H8     | 1.68                     | 0.58              |
| 8:AB:540:C:O5'    | 8:AB:540:C:H6     | 1.86                     | 0.58              |
| 8:AB:807:U:H2'    | 8:AB:808:G:O5'    | 2.03                     | 0.58              |
| 8:AB:1108:U:C6    | 8:AB:1109:C:H5    | 2.21                     | 0.58              |
| 8:AB:1341:G:OP2   | 8:AB:1394:U:O2'   | 2.18                     | 0.58              |
| 8:AB:1526:C:H2'   | 8:AB:1527:G:O4'   | 2.04                     | 0.58              |
| 8:AB:1561:C:H2'   | 8:AB:1562:U:H6    | 1.67                     | 0.58              |
| 8:AB:1806:C:C6    | 8:AB:1806:C:C3'   | 2.87                     | 0.58              |
| 8:AB:2144:G:N2    | 8:AB:2146:C:H4'   | 2.17                     | 0.58              |
| 8:AB:2386:A:O2'   | 29:AW:37:VAL:HB   | 2.03                     | 0.58              |
| 8:AB:2386:A:H4'   | 29:AW:38:ARG:HB2  | 1.85                     | 0.58              |
| 8:AB:2466:C:C2    | 8:AB:2467:C:C5    | 2.91                     | 0.58              |
| 8:AB:2488:G:C2    | 8:AB:2489:U:C5    | 2.90                     | 0.58              |
| 8:AB:2803:G:H2'   | 8:AB:2804:U:C6    | 2.37                     | 0.58              |
| 8:AB:2811:G:H8    | 8:AB:2811:G:O5'   | 1.86                     | 0.58              |
| 11:AE:138:LEU:C   | 11:AE:139:LYS:HE2 | 2.23                     | 0.58              |
| 15:AI:72:THR:HB   | 15:AI:73:PRO:HD2  | 1.84                     | 0.58              |
| 18:AL:117:THR:CG2 | 18:AL:119:PRO:HD2 | 2.31                     | 0.58              |
| 19:AM:22:GLN:HA   | 19:AM:97:GLN:HE22 | 1.69                     | 0.58              |
| 22:AP:42:PHE:CD1  | 22:AP:42:PHE:O    | 2.57                     | 0.58              |
| 23:AQ:40:LYS:O    | 23:AQ:42:GLY:N    | 2.36                     | 0.58              |
| 24:AR:17:GLY:O    | 24:AR:18:GLN:HG2  | 2.04                     | 0.58              |
| 24:AR:95:ASP:C    | 24:AR:95:ASP:OD2  | 2.41                     | 0.58              |
| 25:AS:24:ILE:O    | 25:AS:25:ARG:CB   | 2.52                     | 0.58              |
| 33:BA:98:A:O5'    | 33:BA:98:A:H8     | 1.86                     | 0.58              |
| 33:BA:644:U:H5    | 55:BA:5134:HOH:O  | 1.86                     | 0.58              |
| 33:BA:872:A:C5    | 33:BA:874:G:C8    | 2.91                     | 0.58              |
| 33:BA:1080:A:H5'  | 37:BE:20:VAL:HG11 | 1.85                     | 0.58              |
| 33:BA:1423:G:H2'  | 33:BA:1424:U:H6   | 1.67                     | 0.58              |
| 36:BD:32:LYS:O    | 36:BD:35:GLN:HB2  | 2.03                     | 0.58              |
| 36:BD:169:TRP:CD1 | 36:BD:185:PRO:HG3 | 2.37                     | 0.58              |
| 8:CB:20:C:H2'     | 8:CB:21:A:H8      | 1.69                     | 0.58              |
| 8:CB:137:U:C4     | 8:CB:138:U:N3     | 2.71                     | 0.58              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:142:A:C8      | 8:CB:142:A:OP2    | 2.57                     | 0.58              |
| 8:CB:301:G:N2      | 8:CB:302:C:N3     | 2.51                     | 0.58              |
| 8:CB:364:C:H2'     | 8:CB:365:U:H6     | 1.68                     | 0.58              |
| 8:CB:688:U:C6      | 8:CB:688:U:C3'    | 2.86                     | 0.58              |
| 8:CB:709:U:H2'     | 8:CB:710:U:O4'    | 2.04                     | 0.58              |
| 8:CB:983:A:H2'     | 8:CB:984:A:C8     | 2.37                     | 0.58              |
| 8:CB:1216:G:C2     | 8:CB:1217:U:H6    | 2.21                     | 0.58              |
| 8:CB:1820:U:C6     | 9:CC:157:ALA:O    | 2.57                     | 0.58              |
| 8:CB:2101:A:H2'    | 8:CB:2102:G:C8    | 2.37                     | 0.58              |
| 8:CB:2204:G:O6     | 8:CB:2221:G:C6    | 2.56                     | 0.58              |
| 8:CB:2210:U:H4'    | 8:CB:2211:A:H5'   | 1.85                     | 0.58              |
| 8:CB:2366:A:H3'    | 8:CB:2367:G:H8    | 1.68                     | 0.58              |
| 8:CB:2549:G:H2'    | 8:CB:2550:G:H5'   | 1.85                     | 0.58              |
| 11:CE:126:VAL:HG13 | 11:CE:128:ALA:H   | 1.68                     | 0.58              |
| 12:CF:135:ILE:HG23 | 45:DM:70:ARG:HH12 | 1.67                     | 0.58              |
| 14:CH:114:GLU:OE1  | 14:CH:133:GLN:HG3 | 2.04                     | 0.58              |
| 16:CJ:106:LYS:HG3  | 16:CJ:106:LYS:O   | 2.03                     | 0.58              |
| 18:CL:22:GLY:C     | 18:CL:23:ILE:HD13 | 2.23                     | 0.58              |
| 19:CM:18:ARG:HH12  | 19:CM:92:TRP:HZ3  | 1.49                     | 0.58              |
| 19:CM:93:VAL:CG1   | 19:CM:95:LEU:HB3  | 2.32                     | 0.58              |
| 22:CP:25:VAL:HG12  | 22:CP:25:VAL:O    | 2.01                     | 0.58              |
| 23:CQ:13:HIS:NE2   | 23:CQ:31:TYR:CE1  | 2.71                     | 0.58              |
| 30:CX:1:MET:HB2    | 30:CX:5:GLU:CB    | 2.32                     | 0.58              |
| 30:CX:26:PHE:O     | 30:CX:29:ARG:HB2  | 2.03                     | 0.58              |
| 30:CX:51:ALA:O     | 30:CX:53:VAL:N    | 2.33                     | 0.58              |
| 33:DA:311:C:OP1    | 48:DP:31:ARG:NH1  | 2.36                     | 0.58              |
| 33:DA:312:C:H2'    | 33:DA:313:A:H8    | 1.61                     | 0.58              |
| 33:DA:585:G:N2     | 33:DA:879:C:H4'   | 2.18                     | 0.58              |
| 33:DA:657:U:H6     | 33:DA:657:U:O5'   | 1.85                     | 0.58              |
| 33:DA:788:U:C2'    | 33:DA:789:U:H5'   | 2.33                     | 0.58              |
| 33:DA:792:A:C2     | 33:DA:794:A:C2    | 2.91                     | 0.58              |
| 33:DA:1329:A:H5'   | 45:DM:28:ARG:HD3  | 1.84                     | 0.58              |
| 33:DA:1492:A:H3'   | 33:DA:1493:A:O4'  | 2.04                     | 0.58              |
| 36:DD:10:LEU:HD22  | 36:DD:62:ARG:HD3  | 1.86                     | 0.58              |
| 36:DD:87:GLU:O     | 36:DD:90:LEU:N    | 2.36                     | 0.58              |
| 40:DH:17:GLN:NE2   | 40:DH:69:ALA:HB1  | 2.18                     | 0.58              |
| 40:DH:31:LEU:HG    | 40:DH:35:ILE:HD11 | 1.85                     | 0.58              |
| 47:DO:52:ARG:O     | 47:DO:56:LEU:HD12 | 2.03                     | 0.58              |
| 7:AA:6:G:H8        | 7:AA:6:G:C5'      | 2.15                     | 0.58              |
| 7:AA:100:G:H2'     | 8:AB:863:A:O2'    | 2.03                     | 0.58              |
| 7:AA:106:G:C3'     | 7:AA:107:G:H8     | 2.17                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:257:C:H3'    | 8:AB:258:G:H8      | 1.68                     | 0.58              |
| 8:AB:749:A:O2'    | 8:AB:1617:C:O2'    | 2.15                     | 0.58              |
| 8:AB:828:U:O2'    | 8:AB:829:A:H5''    | 2.04                     | 0.58              |
| 8:AB:870:U:O3'    | 19:AM:8:LYS:HA     | 2.03                     | 0.58              |
| 8:AB:1218:G:C6    | 8:AB:1219:U:C4     | 2.92                     | 0.58              |
| 8:AB:1233:C:C2    | 8:AB:1234:U:C5     | 2.92                     | 0.58              |
| 8:AB:1281:G:H1    | 8:AB:1286:A:H62    | 1.50                     | 0.58              |
| 8:AB:1362:C:C2    | 8:AB:1363:C:C6     | 2.92                     | 0.58              |
| 8:AB:1567:G:O4'   | 8:AB:1568:G:C2     | 2.56                     | 0.58              |
| 8:AB:2090:A:H2    | 32:AZ:30:HIS:HE2   | 1.47                     | 0.58              |
| 8:AB:2303:G:C6    | 8:AB:2304:G:N7     | 2.72                     | 0.58              |
| 8:AB:2534:A:H5''  | 8:AB:2534:A:C8     | 2.37                     | 0.58              |
| 8:AB:2549:G:H2'   | 8:AB:2550:G:H5'    | 1.85                     | 0.58              |
| 8:AB:2722:G:H2'   | 8:AB:2723:C:H6     | 1.67                     | 0.58              |
| 8:AB:2892:G:H3'   | 8:AB:2892:G:H8     | 1.67                     | 0.58              |
| 14:AH:79:THR:HG22 | 14:AH:147:VAL:HG22 | 1.86                     | 0.58              |
| 18:AL:38:GLN:CG   | 18:AL:39:LYS:H     | 2.17                     | 0.58              |
| 18:AL:89:VAL:HG22 | 18:AL:89:VAL:O     | 2.03                     | 0.58              |
| 19:AM:47:GLU:HA   | 19:AM:50:ARG:HB2   | 1.84                     | 0.58              |
| 20:AN:33:ILE:CG2  | 20:AN:112:TYR:HD1  | 2.17                     | 0.58              |
| 20:AN:96:ARG:O    | 20:AN:113:ILE:HA   | 2.01                     | 0.58              |
| 22:AP:25:VAL:O    | 22:AP:27:VAL:HG12  | 2.04                     | 0.58              |
| 24:AR:41:ILE:O    | 24:AR:43:ASN:N     | 2.36                     | 0.58              |
| 25:AS:95:ARG:HH11 | 25:AS:95:ARG:CG    | 2.15                     | 0.58              |
| 27:AU:3:LYS:HD3   | 27:AU:81:ARG:HD2   | 1.84                     | 0.58              |
| 27:AU:27:VAL:HG22 | 27:AU:28:LEU:N     | 2.18                     | 0.58              |
| 33:BA:577:G:N3    | 33:BA:578:C:C6     | 2.72                     | 0.58              |
| 33:BA:665:A:H2    | 33:BA:732:C:C4     | 2.22                     | 0.58              |
| 33:BA:831:A:C8    | 33:BA:831:A:H3'    | 2.38                     | 0.58              |
| 33:BA:858:G:H1    | 33:BA:869:G:C2'    | 2.17                     | 0.58              |
| 33:BA:858:G:H22   | 33:BA:869:G:H2'    | 1.66                     | 0.58              |
| 33:BA:939:G:C2    | 33:BA:940:C:C4     | 2.91                     | 0.58              |
| 33:BA:1147:C:H2'  | 33:BA:1148:U:H6    | 1.69                     | 0.58              |
| 36:BD:121:ALA:O   | 36:BD:122:ILE:HG12 | 2.03                     | 0.58              |
| 38:BF:38:ARG:HH21 | 38:BF:63:ASN:HD21  | 1.50                     | 0.58              |
| 43:BK:91:GLY:O    | 43:BK:95:THR:HB    | 2.04                     | 0.58              |
| 44:BL:13:ARG:HD2  | 44:BL:13:ARG:H     | 1.68                     | 0.58              |
| 44:BL:35:ARG:HE   | 44:BL:36:VAL:H     | 1.51                     | 0.58              |
| 44:BL:107:LYS:HD2 | 44:BL:107:LYS:H    | 1.68                     | 0.58              |
| 46:BN:81:ILE:HG22 | 46:BN:84:ARG:HD3   | 1.84                     | 0.58              |
| 53:BU:15:LEU:HA   | 53:BU:18:PHE:CD1   | 2.38                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:C3:40:LYS:O     | 4:C3:43:LEU:HD13   | 2.03                     | 0.58              |
| 4:C3:46:LYS:HD2   | 4:C3:47:ALA:O      | 2.03                     | 0.58              |
| 8:CB:218:A:H2'    | 8:CB:219:A:C8      | 2.39                     | 0.58              |
| 8:CB:321:U:O2'    | 11:CE:159:LEU:HD12 | 2.03                     | 0.58              |
| 8:CB:839:U:H2'    | 8:CB:840:C:C5      | 2.38                     | 0.58              |
| 8:CB:1210:G:C5'   | 8:CB:1211:C:H3'    | 2.32                     | 0.58              |
| 8:CB:1216:G:C2'   | 8:CB:1217:U:H5'    | 2.33                     | 0.58              |
| 8:CB:1292:G:C6    | 8:CB:1293:C:N4     | 2.71                     | 0.58              |
| 8:CB:1712:U:H2'   | 8:CB:1713:A:N7     | 2.19                     | 0.58              |
| 8:CB:2197:U:H1'   | 8:CB:2198:A:H2'    | 1.85                     | 0.58              |
| 8:CB:2284:A:H8    | 8:CB:2284:A:O5'    | 1.87                     | 0.58              |
| 8:CB:2458:G:H1'   | 8:CB:2460:U:O4     | 2.04                     | 0.58              |
| 9:CC:15:VAL:CG1   | 9:CC:16:VAL:HG13   | 2.33                     | 0.58              |
| 9:CC:220:ARG:HH11 | 9:CC:220:ARG:CG    | 2.10                     | 0.58              |
| 10:CD:1:MET:HB2   | 10:CD:81:GLU:HG2   | 1.85                     | 0.58              |
| 13:CG:62:ALA:C    | 13:CG:64:ALA:H     | 2.05                     | 0.58              |
| 16:CJ:81:ILE:HA   | 16:CJ:84:ILE:CD1   | 2.30                     | 0.58              |
| 16:CJ:94:ALA:HA   | 16:CJ:97:PRO:CG    | 2.32                     | 0.58              |
| 23:CQ:64:ILE:CG1  | 23:CQ:95:ALA:HB2   | 2.32                     | 0.58              |
| 24:CR:84:ARG:NH1  | 24:CR:84:ARG:HB2   | 2.18                     | 0.58              |
| 27:CU:82:VAL:CB   | 27:CU:94:PHE:HB3   | 2.27                     | 0.58              |
| 32:CZ:3:LYS:HE3   | 32:CZ:30:HIS:N     | 2.17                     | 0.58              |
| 33:DA:13:U:C5     | 33:DA:21:G:N2      | 2.71                     | 0.58              |
| 33:DA:596:A:N3    | 33:DA:597:G:C8     | 2.71                     | 0.58              |
| 33:DA:680:C:C2    | 33:DA:711:G:N2     | 2.71                     | 0.58              |
| 33:DA:773:G:C8    | 33:DA:773:G:C3'    | 2.86                     | 0.58              |
| 33:DA:798:U:O2    | 33:DA:799:G:O4'    | 2.22                     | 0.58              |
| 33:DA:873:A:H8    | 33:DA:873:A:OP1    | 1.86                     | 0.58              |
| 33:DA:1121:U:H2'  | 33:DA:1122:U:H6    | 1.67                     | 0.58              |
| 33:DA:1310:G:H1   | 33:DA:1328:C:H1'   | 1.68                     | 0.58              |
| 33:DA:1346:A:N1   | 33:DA:1374:A:H5''  | 2.18                     | 0.58              |
| 33:DA:1462:C:C2'  | 33:DA:1463:U:H5'   | 2.34                     | 0.58              |
| 39:DG:148:LYS:HG3 | 39:DG:151:ALA:CB   | 2.33                     | 0.58              |
| 40:DH:88:LYS:HG3  | 40:DH:119:GLY:CA   | 2.33                     | 0.58              |
| 51:DS:24:SER:HB2  | 51:DS:27:LYS:HE2   | 1.85                     | 0.58              |
| 8:AB:35:G:H22     | 8:AB:450:G:H1'     | 1.69                     | 0.58              |
| 8:AB:85:G:C5      | 8:AB:98:G:C2       | 2.92                     | 0.58              |
| 8:AB:108:G:C6     | 8:AB:109:C:C4      | 2.91                     | 0.58              |
| 8:AB:196:A:C3'    | 8:AB:197:A:H5''    | 2.31                     | 0.58              |
| 8:AB:362:A:C5     | 8:AB:363:G:N7      | 2.72                     | 0.58              |
| 8:AB:705:A:C2     | 8:AB:706:A:C4      | 2.92                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2737:G:H2'   | 8:AB:2738:A:C8     | 2.39                     | 0.58              |
| 8:AB:2751:G:H21   | 13:AG:2:ARG:N      | 2.02                     | 0.58              |
| 8:AB:2859:G:C2'   | 8:AB:2860:A:H5''   | 2.33                     | 0.58              |
| 9:AC:141:HIS:HB3  | 9:AC:190:THR:HB    | 1.84                     | 0.58              |
| 11:AE:61:ARG:HH21 | 11:AE:64:GLY:HA3   | 1.69                     | 0.58              |
| 11:AE:172:ALA:C   | 11:AE:174:GLY:H    | 2.06                     | 0.58              |
| 14:AH:99:ILE:CG2  | 14:AH:115:VAL:HG11 | 2.33                     | 0.58              |
| 15:AI:27:LEU:H    | 15:AI:27:LEU:HD23  | 1.69                     | 0.58              |
| 16:AJ:16:TYR:HD1  | 16:AJ:16:TYR:H     | 1.51                     | 0.58              |
| 22:AP:93:LYS:CE   | 22:AP:97:TYR:CZ    | 2.84                     | 0.58              |
| 26:AT:1:MET:O     | 26:AT:2:ILE:HD13   | 2.03                     | 0.58              |
| 29:AW:16:GLU:HA   | 29:AW:18:LYS:HD2   | 1.84                     | 0.58              |
| 33:BA:31:G:H4'    | 33:BA:32:A:OP2     | 2.03                     | 0.58              |
| 33:BA:189:A:H8    | 33:BA:189:A:C5'    | 2.15                     | 0.58              |
| 33:BA:411:A:O2'   | 33:BA:412:A:H4'    | 2.03                     | 0.58              |
| 33:BA:524:G:C6    | 33:BA:525:C:N4     | 2.72                     | 0.58              |
| 33:BA:552:U:H5'   | 44:BL:82:ARG:HE    | 1.68                     | 0.58              |
| 33:BA:569:C:O4'   | 33:BA:574:A:C5     | 2.56                     | 0.58              |
| 33:BA:804:U:C4    | 33:BA:805:C:H5     | 2.22                     | 0.58              |
| 33:BA:844:G:HO2'  | 33:BA:845:A:H8     | 1.52                     | 0.58              |
| 33:BA:979:C:H2'   | 33:BA:980:C:O4'    | 2.03                     | 0.58              |
| 33:BA:1320:C:H1'  | 51:BS:72:GLU:HG2   | 1.85                     | 0.58              |
| 33:BA:1395:C:O2'  | 33:BA:1396:A:H5'   | 2.03                     | 0.58              |
| 33:BA:1398:A:C8   | 33:BA:1398:A:H3'   | 2.39                     | 0.58              |
| 33:BA:1430:A:N6   | 33:BA:1431:A:N1    | 2.51                     | 0.58              |
| 35:BC:134:LYS:HE3 | 35:BC:167:TYR:HE2  | 1.67                     | 0.58              |
| 37:BE:32:PHE:CD2  | 37:BE:32:PHE:N     | 2.70                     | 0.58              |
| 39:BG:17:PHE:CE2  | 39:BG:58:LEU:HD22  | 2.39                     | 0.58              |
| 46:BN:50:LEU:HG   | 46:BN:51:PRO:CD    | 2.23                     | 0.58              |
| 7:CA:95:U:H2'     | 7:CA:96:G:H8       | 1.66                     | 0.58              |
| 8:CB:116:C:H2'    | 8:CB:117:G:C8      | 2.38                     | 0.58              |
| 8:CB:255:A:H5''   | 8:CB:255:A:H8      | 1.68                     | 0.58              |
| 8:CB:808:G:O5'    | 8:CB:808:G:H8      | 1.86                     | 0.58              |
| 8:CB:978:G:C2     | 8:CB:986:C:C2      | 2.91                     | 0.58              |
| 8:CB:1006:C:H1'   | 16:CJ:108:MET:SD   | 2.44                     | 0.58              |
| 8:CB:1227:G:H5''  | 8:CB:1227:G:H8     | 1.67                     | 0.58              |
| 8:CB:1343:G:N2    | 8:CB:1405:U:C4     | 2.72                     | 0.58              |
| 8:CB:1347:A:H2'   | 8:CB:1348:C:H5''   | 1.85                     | 0.58              |
| 8:CB:1854:A:H62   | 8:CB:1888:G:H8     | 1.49                     | 0.58              |
| 8:CB:1907:G:N2    | 8:CB:1924:C:H1'    | 2.18                     | 0.58              |
| 8:CB:2058:A:H5''  | 8:CB:2058:A:C8     | 2.28                     | 0.58              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:2241:A:N1     | 8:CB:2242:G:C6    | 2.71                     | 0.58              |
| 8:CB:2262:U:O4     | 8:CB:2279:G:N1    | 2.36                     | 0.58              |
| 8:CB:2454:G:C2'    | 8:CB:2455:G:H5'   | 2.34                     | 0.58              |
| 9:CC:34:GLU:CD     | 9:CC:34:GLU:C     | 2.62                     | 0.58              |
| 9:CC:61:TYR:CD2    | 9:CC:84:PRO:HD3   | 2.37                     | 0.58              |
| 12:CF:84:ILE:O     | 12:CF:84:ILE:HG13 | 2.04                     | 0.58              |
| 14:CH:90:LEU:HD12  | 14:CH:91:PHE:H    | 1.69                     | 0.58              |
| 18:CL:34:GLY:HA3   | 24:CR:85:LYS:CD   | 2.21                     | 0.58              |
| 20:CN:29:VAL:HG21  | 20:CN:75:ILE:HD11 | 1.84                     | 0.58              |
| 23:CQ:40:LYS:HA    | 23:CQ:44:TYR:HB2  | 1.86                     | 0.58              |
| 23:CQ:40:LYS:CD    | 23:CQ:44:TYR:HD2  | 2.14                     | 0.58              |
| 23:CQ:101:ASP:O    | 23:CQ:104:ALA:HB3 | 2.04                     | 0.58              |
| 30:CX:1:MET:HB2    | 30:CX:5:GLU:HB2   | 1.84                     | 0.58              |
| 33:DA:11:G:C4      | 33:DA:12:U:C6     | 2.92                     | 0.58              |
| 33:DA:542:G:N2     | 33:DA:543:U:C2    | 2.72                     | 0.58              |
| 33:DA:722:G:C2     | 33:DA:724:G:C8    | 2.92                     | 0.58              |
| 33:DA:833:G:C2     | 33:DA:834:U:C2    | 2.91                     | 0.58              |
| 33:DA:1252:A:C3'   | 33:DA:1253:G:H5'' | 2.33                     | 0.58              |
| 33:DA:1408:A:H3'   | 33:DA:1408:A:C8   | 2.38                     | 0.58              |
| 33:DA:1438:G:H2'   | 33:DA:1439:G:H8   | 1.69                     | 0.58              |
| 33:DA:1463:U:H6    | 33:DA:1463:U:H3'  | 1.66                     | 0.58              |
| 40:DH:5:PRO:HG2    | 40:DH:6:ILE:CD1   | 2.33                     | 0.58              |
| 40:DH:125:ILE:HG22 | 40:DH:126:CYS:SG  | 2.43                     | 0.58              |
| 43:DK:33:ILE:O     | 43:DK:41:LEU:HB2  | 2.03                     | 0.58              |
| 45:DM:80:MET:HA    | 45:DM:87:GLY:CA   | 2.34                     | 0.58              |
| 46:DN:62:ARG:CG    | 46:DN:69:PRO:HD3  | 2.33                     | 0.58              |
| 51:DS:40:PHE:HB3   | 51:DS:41:PRO:CD   | 2.33                     | 0.58              |
| 53:DU:36:PHE:O     | 53:DU:37:TYR:C    | 2.41                     | 0.58              |
| 5:A4:27:CYS:C      | 5:A4:29:ALA:H     | 2.07                     | 0.58              |
| 8:AB:121:G:O5'     | 8:AB:121:G:H8     | 1.86                     | 0.58              |
| 8:AB:186:G:N2      | 8:AB:211:C:C2     | 2.72                     | 0.58              |
| 8:AB:299:A:H2      | 8:AB:319:G:N3     | 2.00                     | 0.58              |
| 8:AB:484:C:N4      | 8:AB:496:G:H1     | 1.94                     | 0.58              |
| 8:AB:800:A:O4'     | 8:AB:801:G:H5'    | 2.03                     | 0.58              |
| 8:AB:871:U:H3'     | 8:AB:871:U:C6     | 2.39                     | 0.58              |
| 8:AB:979:A:H3'     | 8:AB:980:A:C5'    | 2.33                     | 0.58              |
| 8:AB:1334:G:C6     | 8:AB:1335:C:N3    | 2.72                     | 0.58              |
| 8:AB:1353:A:N3     | 8:AB:1354:A:C8    | 2.71                     | 0.58              |
| 8:AB:1392:A:C5     | 8:AB:1393:A:C6    | 2.92                     | 0.58              |
| 8:AB:2069:G:C6     | 8:AB:2070:A:N7    | 2.72                     | 0.58              |
| 8:AB:2266:A:C3'    | 8:AB:2267:A:H5'   | 2.33                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2314:A:H2'   | 8:AB:2315:G:C8    | 2.39                     | 0.58              |
| 8:AB:2444:G:P     | 11:AE:63:LYS:NZ   | 2.76                     | 0.58              |
| 8:AB:2458:G:H1'   | 8:AB:2460:U:O4    | 2.04                     | 0.58              |
| 8:AB:2531:A:C2    | 8:AB:2532:G:C8    | 2.91                     | 0.58              |
| 9:AC:21:PRO:C     | 9:AC:202:ARG:NE   | 2.56                     | 0.58              |
| 9:AC:229:HIS:CG   | 9:AC:230:PRO:CD   | 2.86                     | 0.58              |
| 9:AC:257:ARG:NH1  | 9:AC:259:ASN:O    | 2.35                     | 0.58              |
| 10:AD:135:GLY:O   | 10:AD:137:SER:N   | 2.30                     | 0.58              |
| 12:AF:112:ASP:OD1 | 45:BM:70:ARG:HD2  | 2.03                     | 0.58              |
| 15:AI:116:MET:SD  | 15:AI:124:MET:HB2 | 2.44                     | 0.58              |
| 16:AJ:39:LYS:C    | 16:AJ:41:LYS:N    | 2.57                     | 0.58              |
| 18:AL:61:LEU:HG   | 18:AL:62:PRO:HD2  | 1.85                     | 0.58              |
| 22:AP:47:ILE:HA   | 22:AP:63:ILE:CG2  | 2.34                     | 0.58              |
| 22:AP:76:HIS:HB3  | 22:AP:78:PRO:HD2  | 1.85                     | 0.58              |
| 23:AQ:35:PHE:N    | 23:AQ:35:PHE:HD2  | 1.99                     | 0.58              |
| 24:AR:20:VAL:HG12 | 24:AR:97:LYS:CE   | 2.34                     | 0.58              |
| 25:AS:94:ASP:O    | 25:AS:96:ILE:HG22 | 2.03                     | 0.58              |
| 26:AT:58:VAL:HG12 | 26:AT:59:ASN:N    | 2.18                     | 0.58              |
| 27:AU:85:ARG:O    | 27:AU:87:GLU:HG3  | 2.03                     | 0.58              |
| 29:AW:28:GLU:OE1  | 29:AW:61:LYS:HD2  | 2.03                     | 0.58              |
| 29:AW:43:LYS:HA   | 29:AW:63:ASP:OD1  | 2.04                     | 0.58              |
| 32:AZ:17:SER:HB2  | 32:AZ:21:VAL:CG2  | 2.17                     | 0.58              |
| 32:AZ:48:GLN:OE1  | 32:AZ:49:ARG:O    | 2.22                     | 0.58              |
| 33:BA:130:A:C8    | 49:BQ:64:ARG:HG3  | 2.39                     | 0.58              |
| 33:BA:370:C:H2'   | 33:BA:371:A:H5'   | 1.85                     | 0.58              |
| 33:BA:701:U:H4'   | 33:BA:703:G:C8    | 2.38                     | 0.58              |
| 33:BA:774:G:C5    | 33:BA:775:G:N7    | 2.72                     | 0.58              |
| 33:BA:916:U:H5''  | 33:BA:916:U:H6    | 1.68                     | 0.58              |
| 33:BA:971:G:OP1   | 33:BA:971:G:H3'   | 2.03                     | 0.58              |
| 33:BA:1080:A:H5'  | 37:BE:20:VAL:CG1  | 2.33                     | 0.58              |
| 33:BA:1477:U:H2'  | 33:BA:1478:U:O4'  | 2.04                     | 0.58              |
| 33:BA:1495:U:H2'  | 33:BA:1496:C:C6   | 2.38                     | 0.58              |
| 33:BA:1530:G:H2'  | 33:BA:1531:A:C8   | 2.38                     | 0.58              |
| 34:BB:114:LYS:C   | 34:BB:116:LEU:H   | 2.07                     | 0.58              |
| 48:BP:39:PHE:CD1  | 48:BP:74:LEU:HD13 | 2.39                     | 0.58              |
| 49:BQ:10:ARG:HG3  | 49:BQ:11:VAL:N    | 2.19                     | 0.58              |
| 8:CB:55:G:C2      | 8:CB:56:A:C8      | 2.92                     | 0.58              |
| 8:CB:156:A:C5     | 8:CB:157:C:C5     | 2.91                     | 0.58              |
| 8:CB:571:U:N3     | 8:CB:575:A:N7     | 2.52                     | 0.58              |
| 8:CB:586:A:OP1    | 11:CE:84:THR:HB   | 2.03                     | 0.58              |
| 8:CB:738:G:C6     | 8:CB:739:A:N1     | 2.71                     | 0.58              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:751:A:C5      | 8:CB:789:A:C6     | 2.91                     | 0.58              |
| 8:CB:1010:A:H8     | 8:CB:1010:A:O5'   | 1.86                     | 0.58              |
| 8:CB:1050:A:C2     | 8:CB:2751:G:C5    | 2.92                     | 0.58              |
| 8:CB:1172:C:H2'    | 8:CB:1173:U:H1'   | 1.86                     | 0.58              |
| 8:CB:1443:U:H2'    | 8:CB:1444:G:C8    | 2.38                     | 0.58              |
| 8:CB:1456:G:C2'    | 8:CB:1457:U:H5'   | 2.34                     | 0.58              |
| 8:CB:1797:G:O3'    | 9:CC:253:GLY:HA2  | 2.03                     | 0.58              |
| 8:CB:1809:A:C2     | 8:CB:1810:A:C5    | 2.92                     | 0.58              |
| 8:CB:1885:A:H2'    | 8:CB:1886:U:C6    | 2.38                     | 0.58              |
| 8:CB:2255:G:H2'    | 8:CB:2256:G:C8    | 2.32                     | 0.58              |
| 8:CB:2421:G:H8     | 8:CB:2421:G:C5'   | 2.16                     | 0.58              |
| 8:CB:2584:U:H3'    | 8:CB:2584:U:C6    | 2.37                     | 0.58              |
| 8:CB:2885:G:C5     | 8:CB:2886:A:C8    | 2.91                     | 0.58              |
| 9:CC:17:LYS:HA     | 9:CC:17:LYS:HZ3   | 1.68                     | 0.58              |
| 9:CC:179:GLU:HG3   | 9:CC:266:ILE:HA   | 1.85                     | 0.58              |
| 10:CD:31:ALA:HB3   | 10:CD:95:SER:H    | 1.68                     | 0.58              |
| 10:CD:61:THR:N     | 10:CD:62:LYS:HZ1  | 2.01                     | 0.58              |
| 10:CD:68:PHE:O     | 10:CD:90:PHE:CG   | 2.57                     | 0.58              |
| 15:CI:126:ARG:HG2  | 15:CI:129:GLU:HB2 | 1.85                     | 0.58              |
| 16:CJ:81:ILE:HG13  | 16:CJ:83:GLY:H    | 1.69                     | 0.58              |
| 25:CS:27:LYS:C     | 25:CS:28:LYS:HD2  | 2.24                     | 0.58              |
| 26:CT:70:HIS:HD2   | 26:CT:74:ILE:HG13 | 1.69                     | 0.58              |
| 33:DA:59:A:C6      | 33:DA:354:G:C6    | 2.90                     | 0.58              |
| 33:DA:393:A:C4     | 33:DA:394:G:H8    | 2.21                     | 0.58              |
| 33:DA:596:A:H2'    | 33:DA:597:G:H8    | 1.68                     | 0.58              |
| 33:DA:1092:A:C2    | 33:DA:1183:U:N3   | 2.72                     | 0.58              |
| 33:DA:1142:G:H8    | 33:DA:1142:G:O5'  | 1.86                     | 0.58              |
| 33:DA:1343:G:H2'   | 33:DA:1344:C:C5'  | 2.33                     | 0.58              |
| 33:DA:1349:A:H1'   | 33:DA:1374:A:H61  | 1.69                     | 0.58              |
| 33:DA:1466:C:C2    | 33:DA:1467:C:C6   | 2.91                     | 0.58              |
| 33:DA:1488:G:H2'   | 33:DA:1489:G:H5'  | 1.86                     | 0.58              |
| 39:DG:8:GLN:HG2    | 39:DG:10:LYS:CD   | 2.33                     | 0.58              |
| 43:DK:83:VAL:HB    | 43:DK:109:ILE:CG2 | 2.33                     | 0.58              |
| 43:DK:110:THR:HG22 | 53:DU:3:ILE:O     | 2.02                     | 0.58              |
| 48:DP:39:PHE:HE1   | 48:DP:74:LEU:HD22 | 1.69                     | 0.58              |
| 50:DR:23:LYS:C     | 50:DR:25:ILE:H    | 2.07                     | 0.58              |
| 3:A2:17:GLY:HA2    | 3:A2:21:ARG:NH1   | 2.18                     | 0.58              |
| 3:A2:35:ARG:NH1    | 3:A2:42:LEU:CD2   | 2.67                     | 0.58              |
| 7:AA:16:G:N2       | 7:AA:69:G:H1'     | 2.17                     | 0.58              |
| 8:AB:332:A:C2      | 8:AB:335:C:C5     | 2.92                     | 0.58              |
| 8:AB:463:G:H3'     | 8:AB:463:G:C8     | 2.39                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:770:G:H2'    | 8:AB:771:G:O4'    | 2.04                     | 0.58              |
| 8:AB:983:A:H2'    | 8:AB:984:A:N7     | 2.19                     | 0.58              |
| 8:AB:1443:U:H2'   | 8:AB:1444:G:C8    | 2.39                     | 0.58              |
| 8:AB:2094:A:C2'   | 8:AB:2095:A:H5''  | 2.34                     | 0.58              |
| 8:AB:2425:A:H5''  | 8:AB:2427:C:O4'   | 2.04                     | 0.58              |
| 8:AB:2587:A:H5''  | 8:AB:2587:A:H8    | 1.69                     | 0.58              |
| 8:AB:2715:C:C2'   | 8:AB:2716:C:H5'   | 2.33                     | 0.58              |
| 8:AB:2837:A:C6    | 8:AB:2838:G:N7    | 2.72                     | 0.58              |
| 9:AC:36:ASN:N     | 9:AC:36:ASN:OD1   | 2.36                     | 0.58              |
| 9:AC:80:LEU:HD22  | 9:AC:91:ALA:HB2   | 1.85                     | 0.58              |
| 10:AD:3:GLY:O     | 10:AD:4:LEU:CB    | 2.52                     | 0.58              |
| 19:AM:71:LYS:HD2  | 19:AM:71:LYS:N    | 2.19                     | 0.58              |
| 22:AP:32:VAL:O    | 22:AP:33:GLU:HB3  | 2.02                     | 0.58              |
| 22:AP:64:SER:CB   | 22:AP:71:ARG:HH11 | 2.17                     | 0.58              |
| 22:AP:92:ARG:HE   | 22:AP:110:LYS:C   | 2.07                     | 0.58              |
| 23:AQ:23:TYR:O    | 23:AQ:24:TYR:HB3  | 2.02                     | 0.58              |
| 23:AQ:35:PHE:C    | 23:AQ:37:ALA:H    | 2.07                     | 0.58              |
| 25:AS:53:SER:C    | 25:AS:55:ILE:H    | 2.06                     | 0.58              |
| 25:AS:98:LYS:O    | 25:AS:99:ARG:O    | 2.22                     | 0.58              |
| 26:AT:76:ARG:HG2  | 26:AT:77:ARG:N    | 2.07                     | 0.58              |
| 32:AZ:5:ILE:HD12  | 32:AZ:5:ILE:H     | 1.67                     | 0.58              |
| 33:BA:15:G:C4     | 33:BA:16:A:N7     | 2.72                     | 0.58              |
| 33:BA:154:U:H2'   | 33:BA:155:A:H8    | 1.63                     | 0.58              |
| 33:BA:376:G:OP1   | 48:BP:6:LEU:HB2   | 2.04                     | 0.58              |
| 33:BA:423:G:N3    | 33:BA:423:G:H3'   | 2.18                     | 0.58              |
| 33:BA:1250:A:H2   | 33:BA:1370:G:H1'  | 1.69                     | 0.58              |
| 40:BH:10:LEU:HD11 | 40:BH:76:ARG:HG3  | 1.85                     | 0.58              |
| 44:BL:54:VAL:HG22 | 44:BL:62:VAL:O    | 2.04                     | 0.58              |
| 52:BT:66:ILE:HD12 | 52:BT:66:ILE:H    | 1.68                     | 0.58              |
| 7:CA:79:G:O2'     | 7:CA:80:U:H5'     | 2.03                     | 0.58              |
| 8:CB:45:G:N2      | 8:CB:434:U:N3     | 2.52                     | 0.58              |
| 8:CB:85:G:C5      | 8:CB:98:G:N2      | 2.71                     | 0.58              |
| 8:CB:123:G:C2'    | 8:CB:124:G:H5''   | 2.34                     | 0.58              |
| 8:CB:219:A:O2'    | 8:CB:220:G:H5'    | 2.04                     | 0.58              |
| 8:CB:387:U:C5     | 8:CB:388:G:C6     | 2.92                     | 0.58              |
| 8:CB:463:G:C8     | 8:CB:463:G:C3'    | 2.87                     | 0.58              |
| 8:CB:490:C:H4'    | 8:CB:491:G:OP2    | 2.04                     | 0.58              |
| 8:CB:691:C:OP1    | 9:CC:216:ARG:NH1  | 2.37                     | 0.58              |
| 8:CB:740:C:H2'    | 8:CB:740:C:O2     | 2.04                     | 0.58              |
| 8:CB:943:A:P      | 18:CL:40:SER:HA   | 2.44                     | 0.58              |
| 8:CB:964:C:O2'    | 8:CB:2273:A:H1'   | 2.04                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1001:A:H2'   | 8:CB:1002:G:O4'   | 2.03                     | 0.58              |
| 8:CB:1011:G:C6    | 8:CB:1151:A:C6    | 2.92                     | 0.58              |
| 8:CB:1039:A:C2    | 8:CB:1040:A:C4    | 2.92                     | 0.58              |
| 8:CB:1130:U:C6    | 8:CB:2026:U:OP2   | 2.56                     | 0.58              |
| 8:CB:1789:A:C2'   | 8:CB:1790:C:H5'   | 2.34                     | 0.58              |
| 8:CB:1952:A:OP1   | 17:CK:42:THR:HG21 | 2.04                     | 0.58              |
| 8:CB:1974:C:C4    | 8:CB:1975:G:N7    | 2.71                     | 0.58              |
| 8:CB:2025:C:P     | 10:CD:154:LYS:NZ  | 2.76                     | 0.58              |
| 8:CB:2199:A:C2    | 8:CB:2225:A:C2    | 2.92                     | 0.58              |
| 8:CB:2469:A:C6    | 8:CB:2482:A:C8    | 2.92                     | 0.58              |
| 8:CB:2488:G:C2    | 8:CB:2489:U:C4    | 2.92                     | 0.58              |
| 9:CC:235:GLU:CG   | 9:CC:236:GLY:H    | 2.16                     | 0.58              |
| 10:CD:101:PHE:C   | 10:CD:101:PHE:CD1 | 2.75                     | 0.58              |
| 11:CE:25:GLU:O    | 11:CE:26:ALA:O    | 2.22                     | 0.58              |
| 11:CE:148:ILE:HB  | 11:CE:185:LYS:HB3 | 1.86                     | 0.58              |
| 11:CE:194:LYS:NZ  | 11:CE:194:LYS:N   | 2.43                     | 0.58              |
| 14:CH:47:PHE:CD2  | 14:CH:47:PHE:C    | 2.76                     | 0.58              |
| 14:CH:84:ALA:HB2  | 14:CH:148:ALA:HB2 | 1.85                     | 0.58              |
| 16:CJ:78:THR:N    | 16:CJ:84:ILE:HG21 | 2.09                     | 0.58              |
| 18:CL:37:GLY:O    | 18:CL:38:GLN:HG2  | 2.03                     | 0.58              |
| 18:CL:69:ARG:C    | 18:CL:71:ALA:H    | 2.07                     | 0.58              |
| 18:CL:111:ILE:H   | 18:CL:126:ARG:NH2 | 1.99                     | 0.58              |
| 19:CM:9:PHE:HZ    | 19:CM:12:MET:HB2  | 1.69                     | 0.58              |
| 21:CO:33:ARG:HG3  | 21:CO:34:HIS:CD2  | 2.38                     | 0.58              |
| 22:CP:7:LEU:HA    | 22:CP:10:GLU:HG3  | 1.86                     | 0.58              |
| 23:CQ:13:HIS:O    | 23:CQ:14:LYS:C    | 2.41                     | 0.58              |
| 23:CQ:99:VAL:HG13 | 23:CQ:100:PHE:CG  | 2.39                     | 0.58              |
| 24:CR:79:ARG:HD2  | 24:CR:79:ARG:C    | 2.23                     | 0.58              |
| 25:CS:7:HIS:O     | 25:CS:8:ARG:HB2   | 2.04                     | 0.58              |
| 27:CU:69:VAL:HB   | 27:CU:77:GLY:HA2  | 1.84                     | 0.58              |
| 29:CW:44:PHE:CZ   | 29:CW:60:ALA:HB3  | 2.38                     | 0.58              |
| 33:DA:11:G:C5     | 33:DA:12:U:C5     | 2.92                     | 0.58              |
| 33:DA:387:U:H5'   | 33:DA:387:U:C6    | 2.33                     | 0.58              |
| 33:DA:402:G:H1'   | 33:DA:620:C:H42   | 1.69                     | 0.58              |
| 33:DA:557:G:C6    | 33:DA:558:G:N1    | 2.72                     | 0.58              |
| 33:DA:721:G:H4'   | 33:DA:722:G:O4'   | 2.02                     | 0.58              |
| 33:DA:729:A:C8    | 33:DA:729:A:O5'   | 2.56                     | 0.58              |
| 33:DA:741:G:H2'   | 33:DA:742:G:C8    | 2.38                     | 0.58              |
| 33:DA:893:C:H2'   | 33:DA:894:G:O4'   | 2.03                     | 0.58              |
| 33:DA:1011:C:H2'  | 33:DA:1012:A:C8   | 2.37                     | 0.58              |
| 33:DA:1392:G:C2'  | 33:DA:1393:U:H5'  | 2.34                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1422:G:N3   | 33:DA:1423:G:C8   | 2.70                     | 0.58              |
| 33:DA:1515:G:H8   | 33:DA:1515:G:O5'  | 1.87                     | 0.58              |
| 34:DB:33:ALA:CB   | 34:DB:38:HIS:HA   | 2.33                     | 0.58              |
| 36:DD:11:SER:CB   | 36:DD:18:LEU:HD23 | 2.34                     | 0.58              |
| 40:DH:88:LYS:O    | 40:DH:88:LYS:HG2  | 2.02                     | 0.58              |
| 41:DI:33:SER:HB2  | 41:DI:36:GLN:HG2  | 1.84                     | 0.58              |
| 44:DL:43:LYS:CB   | 44:DL:44:PRO:HD3  | 2.31                     | 0.58              |
| 48:DP:20:VAL:HG13 | 48:DP:20:VAL:O    | 2.02                     | 0.58              |
| 3:A2:1:MET:O      | 8:AB:1620:G:H1'   | 2.04                     | 0.58              |
| 7:AA:52:A:H3'     | 7:AA:53:A:H8      | 1.69                     | 0.58              |
| 8:AB:18:U:H4'     | 23:AQ:22:GLY:CA   | 2.34                     | 0.58              |
| 8:AB:142:A:H2     | 26:AT:2:ILE:HD12  | 1.66                     | 0.58              |
| 8:AB:687:C:N4     | 8:AB:688:U:H3     | 2.02                     | 0.58              |
| 8:AB:941:A:H2     | 8:AB:1189:A:H2    | 1.50                     | 0.58              |
| 8:AB:1029:A:N3    | 8:AB:2486:C:H1'   | 2.18                     | 0.58              |
| 8:AB:1102:C:O2'   | 8:AB:1103:A:H5'   | 2.03                     | 0.58              |
| 8:AB:1131:G:C5    | 16:AJ:77:HIS:NE2  | 2.71                     | 0.58              |
| 8:AB:2074:U:OP1   | 55:AB:4602:HOH:O  | 2.17                     | 0.58              |
| 8:AB:2524:G:O6    | 8:AB:2540:C:C4    | 2.56                     | 0.58              |
| 8:AB:2547:A:N1    | 8:AB:2548:U:C4    | 2.72                     | 0.58              |
| 8:AB:2706:A:H8    | 8:AB:2706:A:O5'   | 1.86                     | 0.58              |
| 8:AB:2807:U:C1'   | 8:AB:2892:G:N2    | 2.61                     | 0.58              |
| 9:AC:19:VAL:HG12  | 9:AC:20:ASN:N     | 2.19                     | 0.58              |
| 9:AC:72:GLY:O     | 9:AC:73:ILE:HG13  | 2.04                     | 0.58              |
| 11:AE:6:LYS:NZ    | 11:AE:119:ILE:O   | 2.36                     | 0.58              |
| 11:AE:164:LEU:HG  | 11:AE:165:HIS:H   | 1.67                     | 0.58              |
| 12:AF:56:LEU:O    | 12:AF:56:LEU:HD23 | 2.03                     | 0.58              |
| 17:AK:102:PRO:HD3 | 22:AP:68:GLY:HA3  | 1.86                     | 0.58              |
| 21:AO:27:VAL:HG13 | 21:AO:94:ARG:HD3  | 1.86                     | 0.58              |
| 23:AQ:92:LYS:HA   | 23:AQ:95:ALA:HB3  | 1.85                     | 0.58              |
| 33:BA:250:A:H8    | 33:BA:252:U:O2    | 1.86                     | 0.58              |
| 33:BA:754:C:O4'   | 47:BO:68:TYR:HD1  | 1.84                     | 0.58              |
| 33:BA:878:A:N7    | 33:BA:879:C:H5    | 2.02                     | 0.58              |
| 33:BA:1069:C:O4'  | 33:BA:1191:A:H2   | 1.86                     | 0.58              |
| 33:BA:1258:G:H2'  | 33:BA:1259:C:H6   | 1.68                     | 0.58              |
| 33:BA:1430:A:H2'  | 33:BA:1430:A:N3   | 2.19                     | 0.58              |
| 34:BB:18:GLN:HB2  | 34:BB:187:ASP:OD1 | 2.04                     | 0.58              |
| 35:BC:33:ASP:O    | 35:BC:37:LYS:HG2  | 2.03                     | 0.58              |
| 45:BM:47:LEU:HG   | 45:BM:51:GLN:HB3  | 1.86                     | 0.58              |
| 46:BN:97:LYS:O    | 46:BN:98:ALA:HB2  | 2.01                     | 0.58              |
| 48:BP:7:ALA:HB3   | 48:BP:18:GLN:HB3  | 1.85                     | 0.58              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:C3:42:HIS:O     | 4:C3:43:LEU:HD12   | 2.04                     | 0.58              |
| 5:C4:3:VAL:HG12   | 5:C4:5:ALA:H       | 1.67                     | 0.58              |
| 7:CA:23:G:H2'     | 7:CA:24:G:C8       | 2.39                     | 0.58              |
| 8:CB:93:G:C2      | 8:CB:94:A:H1'      | 2.38                     | 0.58              |
| 8:CB:194:G:C4     | 8:CB:195:A:N7      | 2.71                     | 0.58              |
| 8:CB:223:A:C2     | 8:CB:408:G:C8      | 2.91                     | 0.58              |
| 8:CB:535:G:O3'    | 23:CQ:52:ARG:NH1   | 2.36                     | 0.58              |
| 8:CB:683:U:H2'    | 8:CB:684:G:O5'     | 2.04                     | 0.58              |
| 8:CB:702:U:H6     | 8:CB:702:U:H5''    | 1.68                     | 0.58              |
| 8:CB:748:G:N3     | 8:CB:750:A:N6      | 2.52                     | 0.58              |
| 8:CB:794:A:H2'    | 8:CB:795:C:C6      | 2.38                     | 0.58              |
| 8:CB:836:G:C6     | 8:CB:837:C:C4      | 2.92                     | 0.58              |
| 8:CB:961:C:C4     | 8:CB:2031:A:C5     | 2.92                     | 0.58              |
| 8:CB:1256:G:H2'   | 8:CB:1257:C:H6     | 1.68                     | 0.58              |
| 8:CB:1323:C:H3'   | 8:CB:1324:G:H5''   | 1.84                     | 0.58              |
| 8:CB:1375:U:C4    | 8:CB:1376:C:H5     | 2.20                     | 0.58              |
| 8:CB:1764:C:C6    | 8:CB:1764:C:C3'    | 2.87                     | 0.58              |
| 8:CB:1967:C:N4    | 8:CB:1968:G:C5     | 2.72                     | 0.58              |
| 8:CB:2095:A:C6    | 8:CB:2096:C:C4     | 2.92                     | 0.58              |
| 8:CB:2695:U:H3'   | 8:CB:2695:U:C6     | 2.37                     | 0.58              |
| 8:CB:2873:A:N3    | 20:CN:6:SER:HA     | 2.19                     | 0.58              |
| 8:CB:2892:G:H5''  | 8:CB:2894:G:H22    | 1.69                     | 0.58              |
| 9:CC:188:ARG:O    | 9:CC:189:ALA:HB2   | 2.03                     | 0.58              |
| 18:CL:58:TYR:HD2  | 18:CL:58:TYR:H     | 1.49                     | 0.58              |
| 19:CM:110:GLU:OE1 | 19:CM:126:ILE:HD12 | 2.03                     | 0.58              |
| 21:CO:17:LYS:HE3  | 21:CO:92:PHE:HB3   | 1.86                     | 0.58              |
| 21:CO:115:LEU:O   | 21:CO:116:GLN:HG3  | 2.04                     | 0.58              |
| 24:CR:39:LEU:N    | 24:CR:61:ALA:CB    | 2.66                     | 0.58              |
| 25:CS:53:SER:C    | 25:CS:55:ILE:H     | 2.05                     | 0.58              |
| 27:CU:26:ASN:O    | 27:CU:34:ILE:HD11  | 2.04                     | 0.58              |
| 27:CU:84:PHE:C    | 27:CU:85:ARG:HG3   | 2.24                     | 0.58              |
| 33:DA:592:G:H2'   | 33:DA:593:U:O4'    | 2.04                     | 0.58              |
| 33:DA:826:C:P     | 40:DH:12:ARG:HH21  | 2.26                     | 0.58              |
| 33:DA:907:A:O2'   | 33:DA:908:A:H5'    | 2.03                     | 0.58              |
| 33:DA:1112:C:C4   | 35:DC:177:LEU:HD23 | 2.39                     | 0.58              |
| 33:DA:1306:A:C4   | 33:DA:1307:U:C6    | 2.91                     | 0.58              |
| 33:DA:1415:G:N2   | 33:DA:1416:G:H1'   | 2.19                     | 0.58              |
| 33:DA:1522:U:N3   | 33:DA:1523:G:N7    | 2.52                     | 0.58              |
| 34:DB:16:GLY:HA2  | 34:DB:40:ILE:HG13  | 1.86                     | 0.58              |
| 34:DB:113:LEU:HG  | 34:DB:144:GLU:OE2  | 2.04                     | 0.58              |
| 35:DC:51:VAL:O    | 35:DC:114:LEU:HD12 | 2.04                     | 0.58              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 40:DH:50:VAL:O     | 40:DH:50:VAL:HG22 | 2.03                     | 0.58              |
| 49:DQ:80:LYS:O     | 49:DQ:81:ALA:CB   | 2.52                     | 0.58              |
| 53:DU:28:LEU:C     | 53:DU:30:GLU:H    | 2.07                     | 0.58              |
| 2:A1:29:LYS:HD3    | 8:AB:2286:G:OP1   | 2.04                     | 0.58              |
| 3:A2:3:ARG:HD3     | 55:A2:4001:HOH:O  | 2.03                     | 0.58              |
| 3:A2:5:PHE:HE1     | 8:AB:464:U:H5'    | 1.67                     | 0.58              |
| 8:AB:419:U:C2      | 8:AB:420:C:C5     | 2.92                     | 0.58              |
| 8:AB:428:A:H2'     | 8:AB:429:A:C8     | 2.38                     | 0.58              |
| 8:AB:587:C:N3      | 8:AB:671:C:C6     | 2.72                     | 0.58              |
| 8:AB:612:G:H1'     | 8:AB:616:A:H61    | 1.69                     | 0.58              |
| 8:AB:671:C:H42     | 8:AB:809:G:H1     | 1.51                     | 0.58              |
| 8:AB:678:C:OP1     | 8:AB:2072:C:OP1   | 2.22                     | 0.58              |
| 8:AB:683:U:H2'     | 8:AB:684:G:O5'    | 2.03                     | 0.58              |
| 8:AB:792:A:N7      | 8:AB:2440:C:C6    | 2.71                     | 0.58              |
| 8:AB:855:G:H21     | 29:AW:23:LYS:HD3  | 1.69                     | 0.58              |
| 8:AB:866:A:H8      | 8:AB:866:A:O5'    | 1.87                     | 0.58              |
| 8:AB:1024:G:H3'    | 8:AB:1025:G:H5''  | 1.86                     | 0.58              |
| 8:AB:1069:A:H4'    | 8:AB:1070:A:H5''  | 1.85                     | 0.58              |
| 8:AB:1150:C:C2     | 8:AB:1151:A:C8    | 2.92                     | 0.58              |
| 8:AB:1375:U:C3'    | 8:AB:1376:C:H5''  | 2.34                     | 0.58              |
| 8:AB:1479:G:O2'    | 8:AB:1480:C:H5'   | 2.03                     | 0.58              |
| 8:AB:1667:G:OP1    | 17:AK:6:THR:HA    | 2.04                     | 0.58              |
| 8:AB:2134:A:HO2'   | 8:AB:2135:A:H8    | 1.50                     | 0.58              |
| 8:AB:2391:G:N1     | 8:AB:2424:C:H3'   | 2.18                     | 0.58              |
| 8:AB:2446:G:N2     | 8:AB:2501:C:C4    | 2.72                     | 0.58              |
| 8:AB:2476:A:H2     | 8:AB:2481:G:O6    | 1.87                     | 0.58              |
| 8:AB:2507:C:H2'    | 8:AB:2508:G:H8    | 1.69                     | 0.58              |
| 8:AB:2623:G:H5''   | 8:AB:2623:G:C8    | 2.39                     | 0.58              |
| 8:AB:2886:A:N3     | 8:AB:2887:A:N7    | 2.51                     | 0.58              |
| 9:AC:244:VAL:H     | 9:AC:249:VAL:HG21 | 1.68                     | 0.58              |
| 10:AD:67:HIS:HD2   | 10:AD:74:GLU:OE1  | 1.87                     | 0.58              |
| 11:AE:1:MET:HG3    | 11:AE:2:GLU:N     | 2.14                     | 0.58              |
| 11:AE:16:GLU:O     | 11:AE:19:PHE:N    | 2.33                     | 0.58              |
| 11:AE:52:VAL:HG13  | 11:AE:53:THR:N    | 2.19                     | 0.58              |
| 13:AG:126:THR:HG23 | 13:AG:128:THR:H   | 1.69                     | 0.58              |
| 16:AJ:3:THR:HG21   | 23:AQ:93:ILE:HD11 | 1.86                     | 0.58              |
| 17:AK:2:ILE:CG2    | 17:AK:67:LYS:HE3  | 2.32                     | 0.58              |
| 19:AM:26:VAL:O     | 19:AM:27:SER:HB2  | 2.03                     | 0.58              |
| 21:AO:16:ARG:HE    | 21:AO:16:ARG:HA   | 1.68                     | 0.58              |
| 21:AO:38:GLN:HB2   | 21:AO:49:VAL:HG23 | 1.85                     | 0.58              |
| 22:AP:51:ASN:ND2   | 22:AP:97:TYR:CD2  | 2.70                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 23:AQ:12:ARG:O    | 23:AQ:15:LYS:HB3  | 2.04                     | 0.58              |
| 25:AS:70:LYS:O    | 25:AS:71:VAL:HB   | 2.03                     | 0.58              |
| 27:AU:12:VAL:CA   | 27:AU:68:ASN:HD21 | 2.12                     | 0.58              |
| 32:AZ:48:GLN:O    | 32:AZ:52:ALA:N    | 2.37                     | 0.58              |
| 33:BA:317:U:H2'   | 33:BA:318:G:C8    | 2.37                     | 0.58              |
| 33:BA:464:U:H6    | 33:BA:464:U:H5''  | 1.67                     | 0.58              |
| 33:BA:505:G:C5'   | 33:BA:534:U:C2    | 2.86                     | 0.58              |
| 33:BA:571:U:H2'   | 33:BA:571:U:O2    | 2.03                     | 0.58              |
| 33:BA:922:G:C4'   | 37:BE:24:VAL:HB   | 2.34                     | 0.58              |
| 33:BA:1026:G:H2'  | 33:BA:1027:C:O4'  | 2.04                     | 0.58              |
| 33:BA:1191:A:C5'  | 33:BA:1191:A:C8   | 2.85                     | 0.58              |
| 33:BA:1390:U:O5'  | 33:BA:1390:U:H6   | 1.86                     | 0.58              |
| 37:BE:102:THR:O   | 37:BE:121:ASN:HB3 | 2.04                     | 0.58              |
| 43:BK:105:ARG:NH2 | 53:BU:10:PRO:HG3  | 2.18                     | 0.58              |
| 46:BN:79:SER:O    | 46:BN:81:ILE:HD12 | 2.04                     | 0.58              |
| 5:C4:11:CYS:SG    | 5:C4:26:ILE:O     | 2.61                     | 0.58              |
| 7:CA:71:C:H2'     | 7:CA:72:G:H8      | 1.68                     | 0.58              |
| 8:CB:13:A:C2      | 8:CB:525:U:O2     | 2.57                     | 0.58              |
| 8:CB:120:U:C6     | 8:CB:149:A:C4     | 2.92                     | 0.58              |
| 8:CB:122:G:H3'    | 8:CB:123:G:H8     | 1.68                     | 0.58              |
| 8:CB:203:A:H3'    | 8:CB:204:A:H2'    | 1.86                     | 0.58              |
| 8:CB:244:A:H2'    | 8:CB:245:G:O5'    | 2.03                     | 0.58              |
| 8:CB:323:C:H1'    | 11:CE:164:LEU:CB  | 2.32                     | 0.58              |
| 8:CB:563:A:C2     | 8:CB:2018:G:N3    | 2.72                     | 0.58              |
| 8:CB:689:A:H61    | 8:CB:773:U:H3     | 1.51                     | 0.58              |
| 8:CB:969:G:C2     | 8:CB:970:U:C2     | 2.91                     | 0.58              |
| 8:CB:1062:G:H2'   | 8:CB:1063:G:C8    | 2.38                     | 0.58              |
| 8:CB:1191:G:O2'   | 8:CB:1192:G:H5'   | 2.04                     | 0.58              |
| 8:CB:1265:A:O4'   | 8:CB:1267:U:C6    | 2.57                     | 0.58              |
| 8:CB:1427:A:H1'   | 8:CB:1428:C:C5    | 2.39                     | 0.58              |
| 8:CB:1578:U:H6    | 8:CB:1578:U:H5''  | 1.69                     | 0.58              |
| 8:CB:1776:G:C6    | 8:CB:1777:U:C4    | 2.92                     | 0.58              |
| 8:CB:2024:G:C6    | 8:CB:2025:C:C4    | 2.92                     | 0.58              |
| 8:CB:2110:G:N1    | 8:CB:2180:U:O4    | 2.25                     | 0.58              |
| 8:CB:2261:C:H5''  | 8:CB:2262:U:OP2   | 2.04                     | 0.58              |
| 8:CB:2355:G:H1'   | 8:CB:2363:G:N2    | 2.19                     | 0.58              |
| 8:CB:2415:G:H4'   | 18:CL:66:PHE:HD2  | 1.67                     | 0.58              |
| 8:CB:2575:C:H5''  | 8:CB:2576:G:OP2   | 2.04                     | 0.58              |
| 8:CB:2581:G:H2'   | 8:CB:2610:C:H41   | 1.69                     | 0.58              |
| 8:CB:2677:G:C6    | 8:CB:2678:C:C4    | 2.92                     | 0.58              |
| 8:CB:2866:U:C2    | 8:CB:2868:A:H1'   | 2.39                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:CC:143:VAL:HB    | 9:CC:152:GLN:HG3   | 1.86                     | 0.58              |
| 10:CD:128:ARG:HH11 | 10:CD:128:ARG:H    | 1.49                     | 0.58              |
| 13:CG:157:LYS:CB   | 13:CG:159:LYS:HG3  | 2.34                     | 0.58              |
| 14:CH:79:THR:O     | 14:CH:80:ILE:HG23  | 2.04                     | 0.58              |
| 15:CI:130:GLY:HA2  | 15:CI:133:ARG:NH1  | 2.19                     | 0.58              |
| 16:CJ:110:PRO:HB2  | 16:CJ:115:GLY:HA3  | 1.85                     | 0.58              |
| 17:CK:22:ILE:HG23  | 17:CK:40:LYS:O     | 2.03                     | 0.58              |
| 18:CL:90:VAL:O     | 18:CL:122:VAL:HG13 | 2.02                     | 0.58              |
| 19:CM:50:ARG:CZ    | 19:CM:50:ARG:CA    | 2.70                     | 0.58              |
| 22:CP:51:ASN:ND2   | 22:CP:97:TYR:HD2   | 2.00                     | 0.58              |
| 25:CS:63:GLY:O     | 25:CS:64:ALA:HB2   | 2.03                     | 0.58              |
| 31:CY:23:LEU:O     | 31:CY:24:LEU:HD22  | 2.04                     | 0.58              |
| 33:DA:93:U:H3'     | 33:DA:94:G:H5''    | 1.86                     | 0.58              |
| 33:DA:119:A:C8     | 33:DA:240:G:O6     | 2.57                     | 0.58              |
| 33:DA:367:U:C6     | 33:DA:394:G:C2     | 2.91                     | 0.58              |
| 33:DA:510:A:H1'    | 33:DA:543:U:O4'    | 2.03                     | 0.58              |
| 33:DA:976:G:N2     | 33:DA:1363:A:OP2   | 2.36                     | 0.58              |
| 33:DA:1216:A:H5''  | 46:DN:4:SER:HB3    | 1.85                     | 0.58              |
| 33:DA:1338:G:H2'   | 33:DA:1339:A:C8    | 2.38                     | 0.58              |
| 33:DA:1421:G:C6    | 33:DA:1480:A:N1    | 2.72                     | 0.58              |
| 33:DA:1435:G:H2'   | 33:DA:1436:U:C6    | 2.38                     | 0.58              |
| 36:DD:26:ALA:C     | 36:DD:28:ASP:N     | 2.57                     | 0.58              |
| 41:DI:40:ARG:H     | 41:DI:44:ARG:NE    | 2.02                     | 0.58              |
| 43:DK:26:PHE:HE1   | 43:DK:88:PRO:HB2   | 1.69                     | 0.58              |
| 46:DN:30:ILE:HD13  | 46:DN:41:TRP:HB3   | 1.85                     | 0.58              |
| 51:DS:22:VAL:HG22  | 51:DS:42:ASN:HD21  | 1.68                     | 0.58              |
| 1:A0:24:VAL:O      | 1:A0:25:THR:HG23   | 2.04                     | 0.57              |
| 1:A0:42:ILE:O      | 1:A0:46:GLY:HA2    | 2.04                     | 0.57              |
| 4:A3:23:HIS:CD2    | 4:A3:47:ALA:CA     | 2.84                     | 0.57              |
| 4:A3:31:ILE:HG21   | 8:AB:2392:A:P      | 2.43                     | 0.57              |
| 7:AA:94:A:C6       | 7:AA:95:U:C2       | 2.92                     | 0.57              |
| 8:AB:349:U:H2'     | 8:AB:350:G:C5'     | 2.34                     | 0.57              |
| 8:AB:423:A:H5''    | 8:AB:424:G:H5''    | 1.86                     | 0.57              |
| 8:AB:535:G:O2'     | 23:AQ:52:ARG:HD3   | 2.03                     | 0.57              |
| 8:AB:1041:G:H2'    | 8:AB:1042:G:C8     | 2.39                     | 0.57              |
| 8:AB:1272:A:O2'    | 8:AB:1273:U:H5'    | 2.04                     | 0.57              |
| 8:AB:1989:G:H2'    | 8:AB:1990:C:H5'    | 1.86                     | 0.57              |
| 8:AB:2053:G:P      | 10:AD:150:GLN:H    | 2.27                     | 0.57              |
| 8:AB:2210:U:H4'    | 8:AB:2211:A:C5'    | 2.33                     | 0.57              |
| 8:AB:2428:G:H5''   | 8:AB:2429:G:OP1    | 2.04                     | 0.57              |
| 8:AB:2514:U:H2'    | 8:AB:2515:C:C6     | 2.39                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2588:G:C2'    | 8:AB:2589:A:H5'    | 2.34                     | 0.57              |
| 8:AB:2749:A:H5''   | 8:AB:2750:A:C2'    | 2.34                     | 0.57              |
| 9:AC:142:ASN:O     | 9:AC:142:ASN:CG    | 2.40                     | 0.57              |
| 10:AD:62:LYS:CE    | 10:AD:62:LYS:H     | 2.17                     | 0.57              |
| 11:AE:159:LEU:HG   | 11:AE:169:VAL:HG11 | 1.85                     | 0.57              |
| 11:AE:164:LEU:HG   | 11:AE:166:LYS:HD3  | 1.85                     | 0.57              |
| 12:AF:104:THR:HG22 | 12:AF:105:ILE:HD12 | 1.85                     | 0.57              |
| 13:AG:6:ALA:N      | 13:AG:7:PRO:CD     | 2.67                     | 0.57              |
| 16:AJ:4:PHE:CE1    | 16:AJ:6:ALA:HA     | 2.39                     | 0.57              |
| 18:AL:56:PRO:HB3   | 18:AL:60:ARG:HH22  | 1.69                     | 0.57              |
| 21:AO:6:ALA:HB1    | 21:AO:10:ARG:NH1   | 2.19                     | 0.57              |
| 22:AP:25:VAL:O     | 22:AP:27:VAL:N     | 2.31                     | 0.57              |
| 33:BA:369:G:N2     | 33:BA:370:C:C2     | 2.72                     | 0.57              |
| 33:BA:510:A:OP1    | 55:BA:5098:HOH:O   | 2.17                     | 0.57              |
| 33:BA:544:G:H2'    | 33:BA:545:C:C6     | 2.39                     | 0.57              |
| 33:BA:662:U:C2'    | 33:BA:663:A:C8     | 2.78                     | 0.57              |
| 33:BA:681:A:H2     | 33:BA:709:U:H3     | 1.52                     | 0.57              |
| 33:BA:913:A:H4'    | 33:BA:914:A:O5'    | 2.04                     | 0.57              |
| 33:BA:1155:A:C6    | 33:BA:1156:G:N3    | 2.72                     | 0.57              |
| 33:BA:1221:G:H2'   | 33:BA:1222:G:C8    | 2.38                     | 0.57              |
| 33:BA:1395:C:C2'   | 33:BA:1396:A:H5'   | 2.33                     | 0.57              |
| 35:BC:148:ILE:HG23 | 35:BC:169:GLU:HB2  | 1.86                     | 0.57              |
| 38:BF:10:VAL:HG21  | 38:BF:21:MET:HE1   | 1.85                     | 0.57              |
| 38:BF:25:TYR:CE2   | 38:BF:74:LEU:HD11  | 2.39                     | 0.57              |
| 45:BM:18:LEU:O     | 45:BM:18:LEU:HD23  | 2.04                     | 0.57              |
| 45:BM:95:PRO:HD3   | 45:BM:108:ARG:HG2  | 1.86                     | 0.57              |
| 2:C1:34:GLU:HB2    | 2:C1:50:GLU:OE1    | 2.03                     | 0.57              |
| 7:CA:52:A:C2'      | 7:CA:53:A:H5'      | 2.34                     | 0.57              |
| 7:CA:53:A:C6       | 7:CA:54:G:C5       | 2.92                     | 0.57              |
| 8:CB:160:A:H1'     | 8:CB:2208:C:O2'    | 2.03                     | 0.57              |
| 8:CB:192:C:N4      | 8:CB:203:A:H1'     | 2.18                     | 0.57              |
| 8:CB:195:A:H3'     | 8:CB:196:A:H4'     | 1.84                     | 0.57              |
| 8:CB:208:C:C2      | 8:CB:209:C:C5      | 2.93                     | 0.57              |
| 8:CB:343:C:N3      | 8:CB:344:A:H8      | 2.01                     | 0.57              |
| 8:CB:377:G:C2      | 8:CB:398:C:O2      | 2.57                     | 0.57              |
| 8:CB:452:G:C2      | 8:CB:458:G:C8      | 2.92                     | 0.57              |
| 8:CB:1003:G:N2     | 8:CB:1153:C:C4     | 2.72                     | 0.57              |
| 8:CB:1291:C:H2'    | 8:CB:1292:G:O4'    | 2.03                     | 0.57              |
| 8:CB:1431:A:H2'    | 8:CB:1432:G:O4'    | 2.04                     | 0.57              |
| 8:CB:1531:C:H2'    | 8:CB:1532:A:H8     | 1.69                     | 0.57              |
| 8:CB:1574:C:H2'    | 8:CB:1575:C:C6     | 2.39                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1799:G:C6    | 8:CB:1819:A:C8     | 2.91                     | 0.57              |
| 8:CB:1820:U:H4'   | 8:CB:1821:A:OP2    | 2.04                     | 0.57              |
| 8:CB:1843:C:O3'   | 9:CC:252:LYS:HA    | 2.04                     | 0.57              |
| 8:CB:2031:A:N1    | 8:CB:2498:C:C6     | 2.72                     | 0.57              |
| 8:CB:2231:U:C2    | 8:CB:2232:C:C6     | 2.92                     | 0.57              |
| 8:CB:2279:G:N2    | 8:CB:2280:G:H1'    | 2.19                     | 0.57              |
| 8:CB:2455:G:N1    | 8:CB:2498:C:N4     | 2.51                     | 0.57              |
| 8:CB:2547:A:N1    | 8:CB:2548:U:C4     | 2.72                     | 0.57              |
| 8:CB:2860:A:C5'   | 8:CB:2860:A:C8     | 2.87                     | 0.57              |
| 8:CB:2861:U:H2'   | 8:CB:2862:G:C8     | 2.39                     | 0.57              |
| 9:CC:203:VAL:O    | 9:CC:204:LEU:C     | 2.41                     | 0.57              |
| 11:CE:189:THR:C   | 11:CE:191:ASP:N    | 2.57                     | 0.57              |
| 14:CH:42:LYS:HG2  | 14:CH:45:GLU:OE2   | 2.03                     | 0.57              |
| 15:CI:82:ALA:CB   | 15:CI:108:ILE:HD11 | 2.34                     | 0.57              |
| 18:CL:86:GLU:HG3  | 18:CL:86:GLU:O     | 2.04                     | 0.57              |
| 19:CM:117:PHE:CD1 | 19:CM:117:PHE:C    | 2.77                     | 0.57              |
| 31:CY:24:LEU:C    | 31:CY:26:LEU:N     | 2.55                     | 0.57              |
| 32:CZ:48:GLN:O    | 32:CZ:51:VAL:HB    | 2.03                     | 0.57              |
| 33:DA:60:A:C8     | 33:DA:60:A:OP2     | 2.57                     | 0.57              |
| 33:DA:190:A:H2'   | 33:DA:191:G:O4'    | 2.04                     | 0.57              |
| 33:DA:406:G:N2    | 33:DA:437:U:C2     | 2.72                     | 0.57              |
| 33:DA:412:A:O2'   | 33:DA:413:G:H5''   | 2.03                     | 0.57              |
| 33:DA:544:G:C2    | 33:DA:545:C:C4     | 2.93                     | 0.57              |
| 33:DA:714:G:C2'   | 33:DA:715:A:H8     | 2.17                     | 0.57              |
| 33:DA:763:G:N3    | 33:DA:764:C:C5     | 2.72                     | 0.57              |
| 33:DA:766:A:N3    | 33:DA:814:A:C2     | 2.72                     | 0.57              |
| 33:DA:1105:A:H2'  | 33:DA:1105:A:N3    | 2.17                     | 0.57              |
| 33:DA:1113:C:H2'  | 33:DA:1113:C:O2    | 2.04                     | 0.57              |
| 33:DA:1187:G:H2'  | 33:DA:1188:A:C8    | 2.39                     | 0.57              |
| 33:DA:1202:U:H2'  | 33:DA:1203:C:H5'   | 1.86                     | 0.57              |
| 33:DA:1475:G:H2'  | 33:DA:1476:A:O5'   | 2.04                     | 0.57              |
| 33:DA:1511:G:H8   | 33:DA:1511:G:O5'   | 1.87                     | 0.57              |
| 33:DA:1523:G:O2'  | 33:DA:1524:C:H5'   | 2.04                     | 0.57              |
| 36:DD:74:TYR:HB3  | 36:DD:89:LEU:HD11  | 1.86                     | 0.57              |
| 37:DE:88:HIS:O    | 37:DE:89:THR:CB    | 2.50                     | 0.57              |
| 41:DI:35:GLU:HA   | 41:DI:39:GLY:HA3   | 1.86                     | 0.57              |
| 42:DJ:42:LEU:CG   | 42:DJ:43:PRO:HD2   | 2.33                     | 0.57              |
| 52:DT:66:ILE:HG23 | 52:DT:70:LYS:CD    | 2.29                     | 0.57              |
| 53:DU:34:ARG:CG   | 53:DU:35:GLU:H     | 2.17                     | 0.57              |
| 4:A3:61:LEU:HD22  | 4:A3:63:TYR:OH     | 2.04                     | 0.57              |
| 8:AB:217:A:C2     | 8:AB:218:A:H1'     | 2.39                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:252:G:H8      | 8:AB:252:G:O5'     | 1.87                     | 0.57              |
| 8:AB:379:G:C2      | 8:AB:396:G:C6      | 2.92                     | 0.57              |
| 8:AB:435:C:H5'     | 8:AB:435:C:H6      | 1.68                     | 0.57              |
| 8:AB:634:C:H6      | 8:AB:634:C:O5'     | 1.87                     | 0.57              |
| 8:AB:647:G:C6      | 8:AB:648:G:C6      | 2.92                     | 0.57              |
| 8:AB:810:U:C4      | 18:AL:37:GLY:HA2   | 2.38                     | 0.57              |
| 8:AB:1275:A:N3     | 8:AB:1275:A:C3'    | 2.66                     | 0.57              |
| 8:AB:1765:U:O2     | 8:AB:1766:G:H8     | 1.87                     | 0.57              |
| 8:AB:1778:U:O4     | 8:AB:1784:A:H1'    | 2.04                     | 0.57              |
| 8:AB:2046:G:C2     | 8:AB:2047:C:C2     | 2.92                     | 0.57              |
| 8:AB:2070:A:C4     | 8:AB:2071:A:C8     | 2.91                     | 0.57              |
| 8:AB:2453:A:C8     | 8:AB:2453:A:C3'    | 2.85                     | 0.57              |
| 8:AB:2461:A:C4     | 8:AB:2462:C:C5     | 2.92                     | 0.57              |
| 8:AB:2646:C:N4     | 8:AB:2675:A:N1     | 2.51                     | 0.57              |
| 8:AB:2695:U:H3'    | 8:AB:2695:U:C6     | 2.38                     | 0.57              |
| 9:AC:30:ALA:O      | 9:AC:32:LEU:N      | 2.36                     | 0.57              |
| 10:AD:60:VAL:HB    | 10:AD:63:PRO:HG2   | 1.86                     | 0.57              |
| 14:AH:116:ARG:O    | 14:AH:116:ARG:HG2  | 2.05                     | 0.57              |
| 16:AJ:39:LYS:O     | 16:AJ:41:LYS:N     | 2.38                     | 0.57              |
| 16:AJ:89:PHE:CD2   | 16:AJ:89:PHE:N     | 2.72                     | 0.57              |
| 18:AL:74:THR:HG23  | 18:AL:106:GLU:OE2  | 2.05                     | 0.57              |
| 20:AN:16:HIS:O     | 20:AN:17:ARG:C     | 2.42                     | 0.57              |
| 33:BA:177:G:O2'    | 33:BA:1448:C:H4'   | 2.03                     | 0.57              |
| 33:BA:321:A:H2'    | 33:BA:328:C:C5     | 2.35                     | 0.57              |
| 33:BA:386:C:H6     | 33:BA:386:C:H3'    | 1.69                     | 0.57              |
| 33:BA:463:U:H6     | 33:BA:463:U:OP2    | 1.86                     | 0.57              |
| 33:BA:520:A:C2     | 33:BA:536:C:H1'    | 2.39                     | 0.57              |
| 33:BA:851:G:C2     | 33:BA:852:G:C8     | 2.92                     | 0.57              |
| 33:BA:898:G:H22    | 33:BA:900:A:H3'    | 1.69                     | 0.57              |
| 33:BA:922:G:N2     | 33:BA:1396:A:C2    | 2.72                     | 0.57              |
| 33:BA:1226:C:H2'   | 45:BM:102:LYS:O    | 2.05                     | 0.57              |
| 33:BA:1438:G:C4    | 33:BA:1439:G:N7    | 2.72                     | 0.57              |
| 34:BB:53:LEU:HD11  | 34:BB:216:VAL:HG22 | 1.86                     | 0.57              |
| 34:BB:96:LEU:HD23  | 34:BB:99:MET:CE    | 2.34                     | 0.57              |
| 34:BB:162:VAL:HG22 | 34:BB:163:ILE:H    | 1.69                     | 0.57              |
| 36:BD:56:GLU:HG2   | 36:BD:195:ASN:ND2  | 2.18                     | 0.57              |
| 41:BI:30:ASN:O     | 41:BI:31:GLN:HB2   | 2.04                     | 0.57              |
| 41:BI:46:VAL:HB    | 41:BI:49:GLN:NE2   | 2.19                     | 0.57              |
| 45:BM:13:HIS:HB2   | 45:BM:16:ILE:HB    | 1.86                     | 0.57              |
| 47:BO:14:PHE:HD2   | 47:BO:25:GLU:HG3   | 1.68                     | 0.57              |
| 48:BP:18:GLN:NE2   | 48:BP:35:ARG:HD2   | 2.14                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:BU:43:GLU:OE2  | 53:BU:47:ALA:HB2   | 2.04                     | 0.57              |
| 4:C3:54:LEU:C     | 4:C3:56:LEU:N      | 2.56                     | 0.57              |
| 8:CB:39:G:H2'     | 8:CB:40:U:H6       | 1.69                     | 0.57              |
| 8:CB:411:G:P      | 8:CB:2407:A:OP2    | 2.62                     | 0.57              |
| 8:CB:779:U:O2'    | 8:CB:780:G:H5'     | 2.04                     | 0.57              |
| 8:CB:945:A:C2     | 8:CB:2448:A:C4     | 2.92                     | 0.57              |
| 8:CB:966:G:C6     | 8:CB:967:U:O2      | 2.56                     | 0.57              |
| 8:CB:1195:G:H5''  | 8:CB:1195:G:H8     | 1.68                     | 0.57              |
| 8:CB:1960:A:N7    | 8:CB:1961:C:H5     | 2.01                     | 0.57              |
| 8:CB:2290:G:C4    | 8:CB:2291:U:C5     | 2.92                     | 0.57              |
| 8:CB:2311:A:H3'   | 8:CB:2311:A:OP1    | 2.05                     | 0.57              |
| 8:CB:2442:C:N4    | 8:CB:2443:C:N4     | 2.52                     | 0.57              |
| 8:CB:2534:A:H5''  | 8:CB:2534:A:C8     | 2.37                     | 0.57              |
| 8:CB:2623:G:C8    | 8:CB:2623:G:H5''   | 2.39                     | 0.57              |
| 9:CC:42:ARG:CG    | 9:CC:43:ASN:N      | 2.61                     | 0.57              |
| 9:CC:78:GLU:O     | 9:CC:79:ARG:HB2    | 2.03                     | 0.57              |
| 9:CC:179:GLU:HG3  | 9:CC:266:ILE:CA    | 2.34                     | 0.57              |
| 10:CD:24:VAL:HG23 | 10:CD:191:GLY:HA2  | 1.86                     | 0.57              |
| 12:CF:113:PHE:HZ  | 12:CF:175:PRO:HB3  | 1.69                     | 0.57              |
| 14:CH:117:LEU:HG  | 14:CH:119:ASN:O    | 2.03                     | 0.57              |
| 19:CM:100:LYS:O   | 19:CM:101:VAL:HG23 | 2.04                     | 0.57              |
| 19:CM:115:GLU:OE2 | 19:CM:115:GLU:N    | 2.37                     | 0.57              |
| 22:CP:61:ARG:HH12 | 22:CP:63:ILE:HD11  | 1.69                     | 0.57              |
| 23:CQ:90:ASP:CG   | 24:CR:10:LYS:HG2   | 2.23                     | 0.57              |
| 24:CR:6:GLN:HA    | 24:CR:10:LYS:CB    | 2.34                     | 0.57              |
| 24:CR:40:MET:HA   | 24:CR:54:VAL:HA    | 1.85                     | 0.57              |
| 26:CT:72:GLN:O    | 26:CT:73:ARG:HB2   | 2.04                     | 0.57              |
| 32:CZ:32:LEU:C    | 32:CZ:33:ASN:OD1   | 2.42                     | 0.57              |
| 33:DA:58:C:C3'    | 33:DA:59:A:H5''    | 2.35                     | 0.57              |
| 33:DA:370:C:H2'   | 33:DA:371:A:H5'    | 1.85                     | 0.57              |
| 33:DA:612:C:N3    | 33:DA:629:A:C2     | 2.72                     | 0.57              |
| 33:DA:721:G:O5'   | 33:DA:721:G:H2'    | 2.03                     | 0.57              |
| 33:DA:777:A:C2    | 33:DA:778:G:C4     | 2.92                     | 0.57              |
| 33:DA:943:U:H2'   | 33:DA:944:G:H5'    | 1.86                     | 0.57              |
| 33:DA:1117:A:C2'  | 33:DA:1118:U:H5'   | 2.34                     | 0.57              |
| 33:DA:1354:U:O2   | 33:DA:1355:G:C8    | 2.57                     | 0.57              |
| 34:DB:69:VAL:O    | 34:DB:163:ILE:HG22 | 2.03                     | 0.57              |
| 35:DC:77:GLY:HA3  | 35:DC:82:ASP:HB2   | 1.87                     | 0.57              |
| 39:DG:104:VAL:O   | 39:DG:107:ALA:HB3  | 2.04                     | 0.57              |
| 41:DI:41:GLU:O    | 41:DI:42:THR:HG23  | 2.04                     | 0.57              |
| 51:DS:36:ARG:HH11 | 51:DS:36:ARG:HG2   | 1.69                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:A1:7:LYS:HZ1    | 8:AB:2285:C:H5    | 1.51                     | 0.57              |
| 8:AB:485:C:O2'    | 8:AB:486:C:H5'    | 2.05                     | 0.57              |
| 8:AB:519:U:O2'    | 8:AB:520:G:H5'    | 2.04                     | 0.57              |
| 8:AB:569:U:H5'    | 8:AB:946:C:O2'    | 2.04                     | 0.57              |
| 8:AB:993:G:OP1    | 24:AR:77:PHE:CE2  | 2.58                     | 0.57              |
| 8:AB:1052:C:H3'   | 8:AB:1052:C:C6    | 2.38                     | 0.57              |
| 8:AB:1456:G:C5    | 8:AB:1457:U:C5    | 2.92                     | 0.57              |
| 8:AB:1617:C:N3    | 55:AB:4503:HOH:O  | 2.35                     | 0.57              |
| 8:AB:1664:A:H2'   | 8:AB:1665:A:C8    | 2.39                     | 0.57              |
| 8:AB:1754:A:H2'   | 8:AB:1755:A:H8    | 1.70                     | 0.57              |
| 8:AB:1870:C:H2'   | 8:AB:1870:C:O2    | 2.03                     | 0.57              |
| 8:AB:1889:A:C8    | 8:AB:1889:A:H3'   | 2.39                     | 0.57              |
| 8:AB:2384:U:H3'   | 8:AB:2385:C:C5'   | 2.34                     | 0.57              |
| 8:AB:2539:C:C2'   | 8:AB:2540:C:H5''  | 2.34                     | 0.57              |
| 8:AB:2581:G:H2'   | 8:AB:2610:C:H41   | 1.69                     | 0.57              |
| 8:AB:2721:A:H2'   | 8:AB:2722:G:H8    | 1.69                     | 0.57              |
| 8:AB:2867:G:H2'   | 8:AB:2867:G:N3    | 2.20                     | 0.57              |
| 9:AC:241:LYS:NZ   | 9:AC:241:LYS:CB   | 2.63                     | 0.57              |
| 9:AC:257:ARG:NH2  | 9:AC:261:ARG:HG2  | 2.18                     | 0.57              |
| 10:AD:208:LYS:HG2 | 10:AD:208:LYS:O   | 2.05                     | 0.57              |
| 14:AH:47:PHE:CD1  | 14:AH:47:PHE:C    | 2.77                     | 0.57              |
| 16:AJ:37:ARG:HG3  | 16:AJ:118:MET:HE2 | 1.85                     | 0.57              |
| 22:AP:5:LYS:HZ2   | 22:AP:5:LYS:HB3   | 1.70                     | 0.57              |
| 24:AR:16:GLU:HG2  | 24:AR:17:GLY:N    | 2.19                     | 0.57              |
| 29:AW:35:ILE:HG13 | 29:AW:36:ILE:H    | 1.67                     | 0.57              |
| 32:AZ:12:ILE:O    | 32:AZ:13:THR:HB   | 2.05                     | 0.57              |
| 33:BA:37:U:O2     | 33:BA:397:A:N1    | 2.36                     | 0.57              |
| 33:BA:42:G:H1     | 33:BA:400:C:N4    | 2.01                     | 0.57              |
| 33:BA:138:G:C6    | 33:BA:226:G:C6    | 2.92                     | 0.57              |
| 33:BA:293:G:H2'   | 33:BA:294:U:H6    | 1.68                     | 0.57              |
| 33:BA:604:G:C6    | 33:BA:635:A:N6    | 2.72                     | 0.57              |
| 33:BA:789:U:H1'   | 33:BA:791:G:N7    | 2.19                     | 0.57              |
| 33:BA:988:G:H21   | 33:BA:1015:G:H21  | 1.51                     | 0.57              |
| 33:BA:1505:G:P    | 55:BA:5276:HOH:O  | 2.62                     | 0.57              |
| 45:BM:83:GLY:HA3  | 51:BS:73:PHE:CZ   | 2.38                     | 0.57              |
| 47:BO:26:VAL:HG12 | 47:BO:27:GLN:N    | 2.18                     | 0.57              |
| 48:BP:6:LEU:HG    | 48:BP:17:TYR:HB3  | 1.86                     | 0.57              |
| 48:BP:51:ARG:HB3  | 48:BP:51:ARG:NH1  | 2.17                     | 0.57              |
| 51:BS:38:THR:HG23 | 51:BS:68:HIS:O    | 2.05                     | 0.57              |
| 8:CB:196:A:C3'    | 8:CB:197:A:H5''   | 2.32                     | 0.57              |
| 8:CB:257:C:H3'    | 8:CB:258:G:H8     | 1.69                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:363:G:H2'     | 8:CB:364:C:C6      | 2.39                     | 0.57              |
| 8:CB:586:A:C2      | 8:CB:810:U:O4'     | 2.57                     | 0.57              |
| 8:CB:649:G:H2'     | 8:CB:650:C:H6      | 1.70                     | 0.57              |
| 8:CB:695:G:C2      | 8:CB:696:G:C8      | 2.92                     | 0.57              |
| 8:CB:740:C:C6      | 8:CB:740:C:H5''    | 2.39                     | 0.57              |
| 8:CB:948:C:H1'     | 8:CB:984:A:N3      | 2.20                     | 0.57              |
| 8:CB:1057:A:N1     | 8:CB:1082:U:C2     | 2.73                     | 0.57              |
| 8:CB:1136:G:H5'    | 8:CB:1136:G:C8     | 2.39                     | 0.57              |
| 8:CB:1177:G:H2'    | 8:CB:1178:C:C6     | 2.39                     | 0.57              |
| 8:CB:1454:C:C6     | 20:CN:60:VAL:HG13  | 2.39                     | 0.57              |
| 8:CB:1526:C:H2'    | 8:CB:1527:G:O4'    | 2.05                     | 0.57              |
| 8:CB:1693:U:H5''   | 8:CB:1694:C:H5     | 1.69                     | 0.57              |
| 8:CB:1754:A:H2'    | 8:CB:1755:A:H8     | 1.70                     | 0.57              |
| 8:CB:2002:G:O6     | 8:CB:2003:A:N6     | 2.37                     | 0.57              |
| 8:CB:2049:G:O2'    | 8:CB:2050:C:H5'    | 2.04                     | 0.57              |
| 8:CB:2060:A:N1     | 8:CB:2502:G:C6     | 2.72                     | 0.57              |
| 8:CB:2310:C:H5'    | 8:CB:2311:A:OP2    | 2.03                     | 0.57              |
| 8:CB:2469:A:C6     | 8:CB:2482:A:N7     | 2.71                     | 0.57              |
| 9:CC:44:ASN:CG     | 9:CC:48:ILE:O      | 2.42                     | 0.57              |
| 9:CC:197:ALA:C     | 9:CC:199:HIS:N     | 2.58                     | 0.57              |
| 9:CC:222:THR:HG21  | 9:CC:238:ASN:ND2   | 2.19                     | 0.57              |
| 10:CD:175:LEU:HD22 | 10:CD:189:VAL:HG12 | 1.86                     | 0.57              |
| 10:CD:184:ARG:O    | 10:CD:186:LEU:HD13 | 2.03                     | 0.57              |
| 14:CH:115:VAL:CB   | 14:CH:132:PHE:CE1  | 2.88                     | 0.57              |
| 16:CJ:25:LEU:O     | 16:CJ:27:ARG:N     | 2.36                     | 0.57              |
| 19:CM:18:ARG:CG    | 19:CM:19:GLY:N     | 2.67                     | 0.57              |
| 22:CP:25:VAL:CG1   | 22:CP:87:ARG:HA    | 2.33                     | 0.57              |
| 24:CR:4:VAL:C      | 24:CR:41:ILE:HG12  | 2.25                     | 0.57              |
| 25:CS:58:ALA:HA    | 25:CS:62:ASP:HB2   | 1.85                     | 0.57              |
| 26:CT:65:GLY:O     | 26:CT:66:LYS:HB2   | 2.04                     | 0.57              |
| 33:DA:182:A:C2     | 33:DA:184:G:C5     | 2.93                     | 0.57              |
| 33:DA:457:G:C2     | 33:DA:458:U:O2     | 2.58                     | 0.57              |
| 33:DA:493:A:H3'    | 33:DA:494:G:H8     | 1.68                     | 0.57              |
| 33:DA:757:U:O2'    | 33:DA:758:C:H5'    | 2.05                     | 0.57              |
| 33:DA:1015:G:H2'   | 33:DA:1016:A:O5'   | 2.04                     | 0.57              |
| 33:DA:1078:U:H4'   | 37:DE:137:ARG:CZ   | 2.34                     | 0.57              |
| 33:DA:1401:G:H2'   | 33:DA:1402:C:O4'   | 2.04                     | 0.57              |
| 33:DA:1531:A:C5    | 33:DA:1532:U:N3    | 2.71                     | 0.57              |
| 34:DB:17:HIS:CE1   | 34:DB:202:ASN:OD1  | 2.57                     | 0.57              |
| 34:DB:72:LYS:HE2   | 34:DB:167:HIS:CB   | 2.34                     | 0.57              |
| 34:DB:93:HIS:O     | 34:DB:146:SER:HB3  | 2.02                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DC:10:ARG:HH11 | 35:DC:10:ARG:HG3   | 1.69                     | 0.57              |
| 35:DC:108:PRO:O   | 35:DC:115:VAL:HG22 | 2.03                     | 0.57              |
| 36:DD:140:ASP:O   | 36:DD:180:THR:HG23 | 2.05                     | 0.57              |
| 37:DE:93:VAL:HG12 | 37:DE:94:PHE:N     | 2.19                     | 0.57              |
| 37:DE:111:ARG:HG3 | 37:DE:112:ALA:H    | 1.69                     | 0.57              |
| 3:A2:35:ARG:NH1   | 3:A2:42:LEU:HD23   | 2.19                     | 0.57              |
| 5:A4:15:LYS:NZ    | 5:A4:24:ARG:C      | 2.58                     | 0.57              |
| 5:A4:31:PRO:HG3   | 8:AB:2528:U:OP1    | 2.04                     | 0.57              |
| 7:AA:76:G:N2      | 7:AA:77:U:C2       | 2.72                     | 0.57              |
| 8:AB:23:G:H5''    | 8:AB:23:G:H8       | 1.69                     | 0.57              |
| 8:AB:77:G:OP1     | 30:AX:52:ARG:NH1   | 2.37                     | 0.57              |
| 8:AB:280:U:H3'    | 8:AB:281:C:C5      | 2.39                     | 0.57              |
| 8:AB:297:G:OP2    | 55:AB:4280:HOH:O   | 2.17                     | 0.57              |
| 8:AB:370:G:H8     | 8:AB:370:G:OP2     | 1.88                     | 0.57              |
| 8:AB:663:G:H5''   | 18:AL:25:SER:CB    | 2.34                     | 0.57              |
| 8:AB:1093:G:C5    | 8:AB:1094:U:H5     | 2.23                     | 0.57              |
| 8:AB:1095:A:H2'   | 8:AB:1096:A:N7     | 2.19                     | 0.57              |
| 8:AB:1362:C:N3    | 8:AB:1363:C:C5     | 2.72                     | 0.57              |
| 8:AB:1596:A:C2'   | 8:AB:1597:A:H5'    | 2.34                     | 0.57              |
| 8:AB:1809:A:H3'   | 8:AB:1810:A:H8     | 1.69                     | 0.57              |
| 8:AB:1959:G:C6    | 8:AB:1960:A:C5     | 2.93                     | 0.57              |
| 8:AB:2050:C:N4    | 8:AB:2051:A:N1     | 2.51                     | 0.57              |
| 8:AB:2079:U:H2'   | 8:AB:2080:A:C8     | 2.34                     | 0.57              |
| 8:AB:2524:G:H2'   | 8:AB:2525:G:H8     | 1.68                     | 0.57              |
| 8:AB:2661:G:H2'   | 8:AB:2662:A:H8     | 1.66                     | 0.57              |
| 8:AB:2716:C:O2'   | 8:AB:2717:C:H5'    | 2.03                     | 0.57              |
| 8:AB:2777:G:C8    | 8:AB:2777:G:C3'    | 2.87                     | 0.57              |
| 8:AB:2891:U:C6    | 8:AB:2891:U:C3'    | 2.87                     | 0.57              |
| 9:AC:9:SER:HB2    | 9:AC:22:GLU:OE1    | 2.04                     | 0.57              |
| 9:AC:78:GLU:O     | 9:AC:79:ARG:CB     | 2.51                     | 0.57              |
| 9:AC:156:SER:O    | 9:AC:158:GLY:N     | 2.33                     | 0.57              |
| 11:AE:46:GLN:O    | 11:AE:48:THR:N     | 2.38                     | 0.57              |
| 11:AE:52:VAL:HG22 | 11:AE:53:THR:N     | 2.18                     | 0.57              |
| 18:AL:70:LYS:CG   | 18:AL:71:ALA:N     | 2.67                     | 0.57              |
| 18:AL:78:ARG:CZ   | 18:AL:81:ASP:N     | 2.67                     | 0.57              |
| 23:AQ:87:VAL:O    | 24:AR:53:PHE:CE1   | 2.58                     | 0.57              |
| 26:AT:3:ARG:NH2   | 26:AT:8:LEU:HD23   | 2.17                     | 0.57              |
| 27:AU:84:PHE:HD1  | 27:AU:94:PHE:CE1   | 2.22                     | 0.57              |
| 30:AX:46:VAL:O    | 30:AX:48:ARG:N     | 2.37                     | 0.57              |
| 33:BA:16:A:O2'    | 33:BA:17:U:H5'     | 2.04                     | 0.57              |
| 33:BA:266:G:N2    | 33:BA:270:A:N6     | 2.53                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:452:A:H8     | 33:BA:452:A:C5'    | 2.16                     | 0.57              |
| 33:BA:559:A:C4'    | 33:BA:560:A:H5''   | 2.31                     | 0.57              |
| 33:BA:665:A:N6     | 33:BA:724:G:H1     | 2.01                     | 0.57              |
| 33:BA:903:G:C6     | 33:BA:904:U:C2     | 2.92                     | 0.57              |
| 33:BA:947:G:H4'    | 45:BM:107:THR:OG1  | 2.04                     | 0.57              |
| 33:BA:1107:C:N3    | 33:BA:1108:G:C8    | 2.72                     | 0.57              |
| 33:BA:1499:A:H8    | 33:BA:1499:A:C5'   | 2.11                     | 0.57              |
| 34:BB:67:LEU:HD11  | 34:BB:157:PRO:HG2  | 1.86                     | 0.57              |
| 35:BC:168:ARG:O    | 35:BC:169:GLU:HG2  | 2.04                     | 0.57              |
| 37:BE:43:GLY:C     | 37:BE:44:ARG:HD3   | 2.25                     | 0.57              |
| 38:BF:93:LYS:NZ    | 50:BR:20:ILE:HD12  | 2.19                     | 0.57              |
| 45:BM:44:ILE:H     | 45:BM:44:ILE:CD1   | 2.02                     | 0.57              |
| 45:BM:68:LEU:O     | 45:BM:72:ILE:HB    | 2.04                     | 0.57              |
| 48:BP:1:MET:O      | 48:BP:3:THR:HG23   | 2.05                     | 0.57              |
| 1:C0:29:VAL:HG21   | 1:C0:34:GLY:N      | 2.20                     | 0.57              |
| 4:C3:7:ARG:CZ      | 8:CB:250:G:OP2     | 2.52                     | 0.57              |
| 4:C3:16:THR:O      | 4:C3:19:GLY:N      | 2.37                     | 0.57              |
| 7:CA:50:A:OP1      | 21:CO:68:LYS:CG    | 2.52                     | 0.57              |
| 8:CB:207:A:H2'     | 8:CB:208:C:O4'     | 2.05                     | 0.57              |
| 8:CB:245:G:N3      | 8:CB:384:A:C2      | 2.72                     | 0.57              |
| 8:CB:624:C:H41     | 18:CL:100:ILE:HD11 | 1.68                     | 0.57              |
| 8:CB:851:C:O2'     | 31:CY:45:GLY:HA3   | 2.03                     | 0.57              |
| 8:CB:870:U:H2'     | 8:CB:871:U:H5'     | 1.86                     | 0.57              |
| 8:CB:942:G:H4'     | 8:CB:1189:A:O2'    | 2.05                     | 0.57              |
| 8:CB:1255:U:H3     | 11:CE:66:GLY:CA    | 2.16                     | 0.57              |
| 8:CB:1334:G:H8     | 8:CB:1334:G:O5'    | 1.87                     | 0.57              |
| 8:CB:1687:G:H1'    | 8:CB:1702:G:N2     | 2.19                     | 0.57              |
| 8:CB:1710:G:C2     | 8:CB:1749:A:N3     | 2.72                     | 0.57              |
| 8:CB:2087:G:N2     | 8:CB:2233:U:O2     | 2.38                     | 0.57              |
| 8:CB:2213:U:C2     | 8:CB:2213:U:O5'    | 2.57                     | 0.57              |
| 8:CB:2571:U:N3     | 8:CB:2574:G:C8     | 2.73                     | 0.57              |
| 8:CB:2712:C:C6     | 8:CB:2715:C:OP1    | 2.57                     | 0.57              |
| 9:CC:177:SER:O     | 9:CC:179:GLU:CD    | 2.41                     | 0.57              |
| 10:CD:7:LYS:HA     | 10:CD:26:VAL:HA    | 1.86                     | 0.57              |
| 11:CE:67:ARG:HD2   | 11:CE:67:ARG:H     | 1.68                     | 0.57              |
| 13:CG:143:VAL:HG22 | 13:CG:147:LEU:CD1  | 2.34                     | 0.57              |
| 14:CH:27:ARG:HG2   | 14:CH:28:ASN:OD1   | 2.04                     | 0.57              |
| 18:CL:131:ALA:HA   | 18:CL:134:ALA:HB3  | 1.84                     | 0.57              |
| 21:CO:40:ILE:HG22  | 21:CO:46:GLU:HB3   | 1.85                     | 0.57              |
| 27:CU:98:ASN:HD22  | 27:CU:98:ASN:N     | 2.02                     | 0.57              |
| 28:CV:13:GLY:O     | 28:CV:14:LYS:C     | 2.43                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:CW:28:GLU:OE1   | 29:CW:61:LYS:HD2   | 2.04                     | 0.57              |
| 33:DA:11:G:H2'     | 33:DA:12:U:O4'     | 2.04                     | 0.57              |
| 33:DA:197:A:N1     | 33:DA:221:C:H5'    | 2.18                     | 0.57              |
| 33:DA:622:A:N7     | 33:DA:623:C:N1     | 2.53                     | 0.57              |
| 33:DA:684:U:C5     | 33:DA:685:G:C6     | 2.93                     | 0.57              |
| 33:DA:1469:C:C4    | 33:DA:1470:U:O2    | 2.57                     | 0.57              |
| 34:DB:89:PHE:CE2   | 34:DB:153:MET:HB2  | 2.39                     | 0.57              |
| 36:DD:144:ILE:HD12 | 36:DD:154:VAL:HG21 | 1.86                     | 0.57              |
| 38:DF:5:GLU:HA     | 38:DF:63:ASN:HA    | 1.85                     | 0.57              |
| 38:DF:66:ALA:HB1   | 38:DF:67:PRO:HD2   | 1.86                     | 0.57              |
| 39:DG:102:TRP:NE1  | 39:DG:136:LYS:HB3  | 2.19                     | 0.57              |
| 49:DQ:10:ARG:NE    | 49:DQ:11:VAL:H     | 2.02                     | 0.57              |
| 1:A0:28:SER:O      | 1:A0:36:LYS:HB2    | 2.03                     | 0.57              |
| 4:A3:16:THR:O      | 4:A3:19:GLY:N      | 2.35                     | 0.57              |
| 8:AB:51:G:N3       | 8:AB:118:A:N6      | 2.53                     | 0.57              |
| 8:AB:264:C:H2'     | 8:AB:265:A:H5''    | 1.84                     | 0.57              |
| 8:AB:365:U:C4      | 8:AB:366:C:N4      | 2.72                     | 0.57              |
| 8:AB:543:G:H2'     | 8:AB:544:C:H5''    | 1.85                     | 0.57              |
| 8:AB:771:G:C2      | 8:AB:772:C:C4      | 2.92                     | 0.57              |
| 8:AB:790:U:H5      | 8:AB:791:C:H5      | 1.51                     | 0.57              |
| 8:AB:836:G:C5      | 8:AB:837:C:C4      | 2.93                     | 0.57              |
| 8:AB:1162:G:C6     | 8:AB:1163:G:N7     | 2.72                     | 0.57              |
| 8:AB:1365:A:C4     | 8:AB:1366:A:C8     | 2.93                     | 0.57              |
| 8:AB:1814:G:N7     | 8:AB:1815:A:C6     | 2.73                     | 0.57              |
| 8:AB:2044:C:H42    | 8:AB:2045:C:N4     | 2.02                     | 0.57              |
| 8:AB:2205:A:C2     | 8:AB:2206:C:C2     | 2.92                     | 0.57              |
| 8:AB:2547:A:H2'    | 8:AB:2548:U:C6     | 2.39                     | 0.57              |
| 9:AC:171:VAL:HB    | 9:AC:182:LYS:HB3   | 1.86                     | 0.57              |
| 21:AO:1:MET:HG2    | 21:AO:2:ASP:OD1    | 2.04                     | 0.57              |
| 24:AR:40:MET:C     | 24:AR:54:VAL:HG13  | 2.25                     | 0.57              |
| 33:BA:122:G:H5''   | 33:BA:122:G:H8     | 1.69                     | 0.57              |
| 33:BA:383:A:O5'    | 33:BA:383:A:H8     | 1.88                     | 0.57              |
| 33:BA:451:A:O4'    | 33:BA:452:A:C8     | 2.57                     | 0.57              |
| 33:BA:627:G:HO2'   | 33:BA:628:G:H8     | 1.52                     | 0.57              |
| 33:BA:868:C:H5'    | 33:BA:873:A:N6     | 2.19                     | 0.57              |
| 40:BH:103:VAL:O    | 40:BH:103:VAL:HG23 | 2.04                     | 0.57              |
| 41:BI:7:GLY:N      | 41:BI:85:ALA:HB2   | 2.19                     | 0.57              |
| 41:BI:56:MET:SD    | 41:BI:57:VAL:N     | 2.77                     | 0.57              |
| 42:BJ:19:ASP:C     | 42:BJ:21:ALA:H     | 2.07                     | 0.57              |
| 42:BJ:51:VAL:O     | 42:BJ:62:ARG:HA    | 2.05                     | 0.57              |
| 44:BL:87:LYS:HA    | 44:BL:87:LYS:HZ1   | 1.69                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:BS:14:LEU:HD13 | 51:BS:70:LEU:HD22  | 1.86                     | 0.57              |
| 8:CB:23:G:H2'     | 8:CB:24:G:C8       | 2.39                     | 0.57              |
| 8:CB:23:G:H5''    | 8:CB:23:G:C8       | 2.39                     | 0.57              |
| 8:CB:35:G:H22     | 8:CB:450:G:H1'     | 1.68                     | 0.57              |
| 8:CB:62:U:C5      | 8:CB:63:A:C6       | 2.92                     | 0.57              |
| 8:CB:329:G:H8     | 8:CB:329:G:P       | 2.28                     | 0.57              |
| 8:CB:375:G:O6     | 8:CB:400:G:N3      | 2.38                     | 0.57              |
| 8:CB:573:U:O2'    | 8:CB:574:A:H3'     | 2.04                     | 0.57              |
| 8:CB:1479:G:O2'   | 8:CB:1480:C:H5'    | 2.05                     | 0.57              |
| 8:CB:1535:A:H8    | 8:CB:1537:G:O6     | 1.88                     | 0.57              |
| 8:CB:1771:C:N3    | 8:CB:1772:A:C5     | 2.72                     | 0.57              |
| 8:CB:1932:A:N3    | 8:CB:1932:A:H2'    | 2.20                     | 0.57              |
| 8:CB:2024:G:O5'   | 8:CB:2024:G:C8     | 2.58                     | 0.57              |
| 8:CB:2623:G:H2'   | 8:CB:2624:G:H5'    | 1.86                     | 0.57              |
| 8:CB:2714:G:O2'   | 8:CB:2715:C:H5'    | 2.04                     | 0.57              |
| 9:CC:62:ARG:NH1   | 9:CC:62:ARG:CG     | 2.66                     | 0.57              |
| 9:CC:136:VAL:HA   | 9:CC:165:ALA:C     | 2.24                     | 0.57              |
| 9:CC:174:ARG:HA   | 9:CC:180:MET:HA    | 1.85                     | 0.57              |
| 9:CC:244:VAL:H    | 9:CC:249:VAL:HG21  | 1.69                     | 0.57              |
| 10:CD:54:ALA:C    | 10:CD:56:LYS:N     | 2.57                     | 0.57              |
| 10:CD:62:LYS:H    | 10:CD:62:LYS:HD3   | 1.70                     | 0.57              |
| 11:CE:31:VAL:HG21 | 11:CE:104:ALA:HB2  | 1.86                     | 0.57              |
| 13:CG:169:ARG:HD2 | 13:CG:170:THR:HG23 | 1.85                     | 0.57              |
| 18:CL:7:SER:HB3   | 18:CL:8:PRO:HD3    | 1.85                     | 0.57              |
| 19:CM:77:PRO:HG3  | 19:CM:86:LYS:NZ    | 2.19                     | 0.57              |
| 20:CN:111:ALA:O   | 20:CN:112:TYR:CD2  | 2.58                     | 0.57              |
| 23:CQ:44:TYR:CD1  | 23:CQ:48:ASP:HB2   | 2.39                     | 0.57              |
| 25:CS:94:ASP:O    | 25:CS:96:ILE:HG22  | 2.05                     | 0.57              |
| 28:CV:15:GLY:O    | 28:CV:19:ARG:HG3   | 2.05                     | 0.57              |
| 29:CW:28:GLU:H    | 29:CW:61:LYS:HB2   | 1.68                     | 0.57              |
| 30:CX:28:LEU:HB2  | 30:CX:42:LEU:HD12  | 1.86                     | 0.57              |
| 33:DA:275:G:C6    | 33:DA:276:G:C6     | 2.92                     | 0.57              |
| 33:DA:363:A:N6    | 33:DA:364:A:C6     | 2.73                     | 0.57              |
| 33:DA:437:U:O2'   | 36:DD:119:HIS:HD2  | 1.87                     | 0.57              |
| 33:DA:445:G:N2    | 33:DA:446:G:C5     | 2.72                     | 0.57              |
| 33:DA:479:U:H3'   | 33:DA:479:U:C6     | 2.38                     | 0.57              |
| 33:DA:593:U:C4    | 33:DA:594:U:O4     | 2.58                     | 0.57              |
| 33:DA:617:G:N1    | 33:DA:618:C:C5     | 2.73                     | 0.57              |
| 33:DA:692:U:O2    | 33:DA:692:U:H2'    | 2.05                     | 0.57              |
| 33:DA:841:C:C6    | 33:DA:843:U:OP2    | 2.58                     | 0.57              |
| 33:DA:1359:C:H5'' | 55:DA:5262:HOH:O   | 2.05                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1410:A:C4   | 33:DA:1491:G:N2   | 2.72                     | 0.57              |
| 33:DA:1422:G:H2'  | 33:DA:1423:G:H5'  | 1.85                     | 0.57              |
| 37:DE:154:ALA:HB1 | 40:DH:65:PHE:CE2  | 2.40                     | 0.57              |
| 46:DN:60:ARG:O    | 46:DN:61:ASN:HB2  | 2.05                     | 0.57              |
| 49:DQ:20:ILE:CD1  | 49:DQ:47:ASP:HB3  | 2.35                     | 0.57              |
| 50:DR:19:GLU:OE1  | 50:DR:54:LEU:HA   | 2.05                     | 0.57              |
| 8:AB:98:G:C5'     | 8:AB:98:G:C8      | 2.88                     | 0.57              |
| 8:AB:208:C:H2'    | 8:AB:209:C:H6     | 1.67                     | 0.57              |
| 8:AB:396:G:C3'    | 32:AZ:28:VAL:HG21 | 2.34                     | 0.57              |
| 8:AB:460:A:N1     | 8:AB:470:A:C4     | 2.73                     | 0.57              |
| 8:AB:532:A:C8     | 8:AB:2021:C:C2    | 2.92                     | 0.57              |
| 8:AB:534:U:N3     | 8:AB:535:G:N7     | 2.52                     | 0.57              |
| 8:AB:650:C:N4     | 55:AB:4342:HOH:O  | 2.38                     | 0.57              |
| 8:AB:673:C:N3     | 8:AB:808:G:N2     | 2.51                     | 0.57              |
| 8:AB:797:G:C6     | 8:AB:798:G:N7     | 2.72                     | 0.57              |
| 8:AB:1165:A:C4    | 8:AB:1166:G:N7    | 2.73                     | 0.57              |
| 8:AB:1177:G:H2'   | 8:AB:1178:C:C6    | 2.39                     | 0.57              |
| 8:AB:1617:C:C4    | 55:AB:4503:HOH:O  | 2.53                     | 0.57              |
| 8:AB:1818:U:OP1   | 9:AC:86:ARG:HG3   | 2.04                     | 0.57              |
| 8:AB:1984:G:C5    | 8:AB:1985:C:C5    | 2.92                     | 0.57              |
| 8:AB:2338:C:H2'   | 8:AB:2339:C:H6    | 1.69                     | 0.57              |
| 8:AB:2519:U:C2    | 8:AB:2542:A:C6    | 2.93                     | 0.57              |
| 8:AB:2581:G:C2'   | 8:AB:2610:C:H41   | 2.17                     | 0.57              |
| 8:AB:2742:G:H8    | 8:AB:2742:G:O5'   | 1.86                     | 0.57              |
| 9:AC:144:GLU:CG   | 9:AC:150:GLY:HA2  | 2.24                     | 0.57              |
| 11:AE:173:THR:HA  | 11:AE:200:LEU:O   | 2.04                     | 0.57              |
| 12:AF:33:ILE:CG1  | 12:AF:34:THR:H    | 2.17                     | 0.57              |
| 16:AJ:64:VAL:HG21 | 16:AJ:90:GLU:OE2  | 2.05                     | 0.57              |
| 17:AK:80:ASP:HB2  | 22:AP:70:GLU:CD   | 2.24                     | 0.57              |
| 18:AL:79:LEU:HD12 | 18:AL:79:LEU:N    | 2.20                     | 0.57              |
| 18:AL:85:VAL:HG21 | 18:AL:98:ALA:HB3  | 1.85                     | 0.57              |
| 18:AL:90:VAL:CG1  | 18:AL:121:THR:H   | 2.10                     | 0.57              |
| 19:AM:117:PHE:CD1 | 19:AM:117:PHE:C   | 2.77                     | 0.57              |
| 20:AN:47:VAL:O    | 20:AN:51:LEU:HD13 | 2.04                     | 0.57              |
| 25:AS:72:THR:O    | 25:AS:73:LYS:HG2  | 2.04                     | 0.57              |
| 28:AV:24:ASN:HB3  | 28:AV:44:HIS:HB2  | 1.86                     | 0.57              |
| 33:BA:481:G:HO2'  | 33:BA:482:A:H8    | 1.51                     | 0.57              |
| 33:BA:585:G:H8    | 33:BA:585:G:O5'   | 1.86                     | 0.57              |
| 33:BA:587:G:C2    | 33:BA:755:G:C2    | 2.93                     | 0.57              |
| 33:BA:947:G:H5''  | 45:BM:106:ARG:CB  | 2.35                     | 0.57              |
| 33:BA:975:A:H2'   | 33:BA:975:A:N3    | 2.18                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1181:G:H2'   | 33:BA:1182:G:C8    | 2.40                     | 0.57              |
| 33:BA:1319:A:H5'   | 33:BA:1320:C:OP1   | 2.03                     | 0.57              |
| 33:BA:1495:U:O2'   | 33:BA:1496:C:H5'   | 2.04                     | 0.57              |
| 33:BA:1504:G:H3'   | 55:BA:5279:HOH:O   | 2.03                     | 0.57              |
| 33:BA:1515:G:N2    | 33:BA:1521:C:N3    | 2.53                     | 0.57              |
| 43:BK:69:CYS:O     | 43:BK:73:VAL:HG23  | 2.05                     | 0.57              |
| 8:CB:58:G:C5       | 8:CB:59:U:C5       | 2.93                     | 0.57              |
| 8:CB:321:U:C4'     | 11:CE:159:LEU:HB3  | 2.32                     | 0.57              |
| 8:CB:681:G:H2'     | 8:CB:682:G:C8      | 2.29                     | 0.57              |
| 8:CB:906:U:C2'     | 8:CB:907:G:O5'     | 2.53                     | 0.57              |
| 8:CB:969:G:H2'     | 8:CB:970:U:C6      | 2.39                     | 0.57              |
| 8:CB:1028:A:N3     | 8:CB:1029:A:C8     | 2.72                     | 0.57              |
| 8:CB:1183:U:H2'    | 8:CB:1184:U:C6     | 2.39                     | 0.57              |
| 8:CB:1404:C:H2'    | 8:CB:1405:U:H6     | 1.70                     | 0.57              |
| 8:CB:1531:C:O5'    | 8:CB:1531:C:H6     | 1.88                     | 0.57              |
| 8:CB:1611:C:N3     | 8:CB:1612:C:H5     | 2.02                     | 0.57              |
| 8:CB:1658:C:OP1    | 10:CD:136:ASN:O    | 2.22                     | 0.57              |
| 8:CB:1702:G:C5     | 8:CB:1703:G:C8     | 2.93                     | 0.57              |
| 8:CB:1998:A:N6     | 8:CB:1999:C:N4     | 2.52                     | 0.57              |
| 8:CB:2341:G:C5     | 8:CB:2342:C:C4     | 2.93                     | 0.57              |
| 8:CB:2787:C:H1'    | 10:CD:62:LYS:HB3   | 1.86                     | 0.57              |
| 11:CE:106:LYS:O    | 11:CE:108:ILE:HG12 | 2.05                     | 0.57              |
| 12:CF:169:LEU:HD12 | 12:CF:176:PHE:HE2  | 1.69                     | 0.57              |
| 13:CG:10:VAL:N     | 13:CG:11:PRO:HD3   | 2.19                     | 0.57              |
| 19:CM:32:GLY:HA2   | 19:CM:102:LEU:H    | 1.69                     | 0.57              |
| 22:CP:42:PHE:O     | 22:CP:42:PHE:HD1   | 1.88                     | 0.57              |
| 25:CS:20:VAL:HG22  | 25:CS:21:ALA:N     | 2.19                     | 0.57              |
| 26:CT:38:ALA:O     | 26:CT:42:GLU:HB3   | 2.04                     | 0.57              |
| 28:CV:70:ILE:CD1   | 28:CV:71:LYS:H     | 2.15                     | 0.57              |
| 29:CW:60:ALA:O     | 29:CW:80:SER:HB3   | 2.05                     | 0.57              |
| 33:DA:212:G:H2'    | 33:DA:213:G:C8     | 2.36                     | 0.57              |
| 33:DA:293:G:C4     | 33:DA:294:U:C6     | 2.93                     | 0.57              |
| 33:DA:393:A:C4     | 33:DA:394:G:C8     | 2.93                     | 0.57              |
| 33:DA:792:A:C2     | 33:DA:794:A:N3     | 2.72                     | 0.57              |
| 33:DA:842:U:O2'    | 33:DA:843:U:H5'    | 2.04                     | 0.57              |
| 33:DA:844:G:H2'    | 33:DA:845:A:C8     | 2.40                     | 0.57              |
| 33:DA:903:G:C6     | 33:DA:904:U:O2     | 2.57                     | 0.57              |
| 33:DA:959:A:H5''   | 33:DA:960:U:OP2    | 2.04                     | 0.57              |
| 37:DE:158:LYS:NZ   | 40:DH:65:PHE:HA    | 2.19                     | 0.57              |
| 40:DH:77:VAL:HG23  | 40:DH:125:ILE:O    | 2.04                     | 0.57              |
| 41:DI:18:VAL:HG21  | 41:DI:81:GLY:O     | 2.05                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:DN:12:ARG:O    | 46:DN:16:ALA:HB2   | 2.04                     | 0.57              |
| 47:DO:52:ARG:HB2  | 47:DO:55:LEU:HD23  | 1.86                     | 0.57              |
| 51:DS:62:THR:HG23 | 51:DS:63:ASP:H     | 1.68                     | 0.57              |
| 52:DT:49:ALA:O    | 52:DT:52:GLU:HB3   | 2.04                     | 0.57              |
| 4:A3:11:LYS:HD2   | 18:AL:62:PRO:C     | 2.24                     | 0.57              |
| 4:A3:32:LEU:CD2   | 8:AB:2420:C:H5''   | 2.35                     | 0.57              |
| 8:AB:20:C:H2'     | 8:AB:21:A:H8       | 1.68                     | 0.57              |
| 8:AB:121:G:C4     | 8:AB:131:A:N1      | 2.73                     | 0.57              |
| 8:AB:381:G:C6     | 8:AB:382:A:C8      | 2.93                     | 0.57              |
| 8:AB:518:G:H5''   | 8:AB:518:G:H8      | 1.69                     | 0.57              |
| 8:AB:682:G:N3     | 8:AB:683:U:C5      | 2.73                     | 0.57              |
| 8:AB:691:C:O2'    | 8:AB:692:C:H5'     | 2.05                     | 0.57              |
| 8:AB:800:A:OP1    | 55:AB:4377:HOH:O   | 2.17                     | 0.57              |
| 8:AB:802:A:C4     | 8:AB:803:U:C5      | 2.92                     | 0.57              |
| 8:AB:945:A:C2     | 8:AB:2448:A:C4     | 2.92                     | 0.57              |
| 8:AB:1076:C:O2    | 15:AI:92:PRO:HD2   | 2.05                     | 0.57              |
| 8:AB:1157:G:C8    | 8:AB:1157:G:C5'    | 2.86                     | 0.57              |
| 8:AB:2199:A:C6    | 8:AB:2200:C:O2     | 2.58                     | 0.57              |
| 8:AB:2200:C:H6    | 8:AB:2200:C:H3'    | 1.70                     | 0.57              |
| 8:AB:2543:G:C2    | 8:AB:2765:A:C5     | 2.93                     | 0.57              |
| 8:AB:2694:G:H8    | 8:AB:2694:G:H5'    | 1.69                     | 0.57              |
| 9:AC:254:LYS:HZ3  | 9:AC:254:LYS:N     | 2.02                     | 0.57              |
| 10:AD:37:VAL:HG21 | 10:AD:46:ARG:HD3   | 1.86                     | 0.57              |
| 10:AD:154:LYS:O   | 10:AD:155:VAL:CG1  | 2.45                     | 0.57              |
| 14:AH:78:VAL:HB   | 14:AH:144:VAL:HG13 | 1.87                     | 0.57              |
| 18:AL:77:ILE:CB   | 18:AL:110:VAL:HA   | 2.34                     | 0.57              |
| 18:AL:103:ILE:O   | 18:AL:103:ILE:CG2  | 2.53                     | 0.57              |
| 18:AL:141:LYS:O   | 18:AL:142:ILE:HG23 | 2.04                     | 0.57              |
| 21:AO:20:GLU:O    | 21:AO:21:LEU:C     | 2.43                     | 0.57              |
| 25:AS:29:VAL:HG11 | 25:AS:69:LEU:CB    | 2.28                     | 0.57              |
| 29:AW:67:LYS:CD   | 29:AW:71:LYS:HB3   | 2.33                     | 0.57              |
| 33:BA:109:A:N6    | 33:BA:326:G:C6     | 2.72                     | 0.57              |
| 33:BA:417:G:H5''  | 33:BA:417:G:C8     | 2.40                     | 0.57              |
| 33:BA:551:U:H2'   | 33:BA:552:U:C6     | 2.40                     | 0.57              |
| 33:BA:802:A:H2'   | 33:BA:803:G:O4'    | 2.05                     | 0.57              |
| 33:BA:1251:A:H1'  | 33:BA:1370:G:O4'   | 2.05                     | 0.57              |
| 38:BF:36:ILE:HG12 | 38:BF:64:VAL:CG1   | 2.34                     | 0.57              |
| 40:BH:125:ILE:CG2 | 40:BH:126:CYS:N    | 2.68                     | 0.57              |
| 48:BP:24:SER:HB3  | 48:BP:25:ARG:HD3   | 1.85                     | 0.57              |
| 51:BS:44:ILE:HD12 | 51:BS:62:THR:HA    | 1.87                     | 0.57              |
| 3:C2:16:HIS:HA    | 3:C2:21:ARG:NH1    | 2.19                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:CA:55:U:H5'      | 12:CF:24:VAL:CG2   | 2.35                     | 0.57              |
| 8:CB:192:C:C2'     | 8:CB:193:U:H5'     | 2.34                     | 0.57              |
| 8:CB:583:G:OP2     | 55:CB:5104:HOH:O   | 2.17                     | 0.57              |
| 8:CB:734:A:C4      | 8:CB:735:A:C8      | 2.92                     | 0.57              |
| 8:CB:810:U:C5      | 18:CL:37:GLY:HA2   | 2.39                     | 0.57              |
| 8:CB:868:U:O2      | 8:CB:868:U:C2'     | 2.53                     | 0.57              |
| 8:CB:1003:G:N2     | 8:CB:1153:C:C2     | 2.73                     | 0.57              |
| 8:CB:1045:C:H4'    | 8:CB:1047:G:C8     | 2.39                     | 0.57              |
| 8:CB:1375:U:C4     | 8:CB:1376:C:C5     | 2.91                     | 0.57              |
| 8:CB:1506:U:H2'    | 8:CB:1507:C:H6     | 1.68                     | 0.57              |
| 8:CB:1805:A:O2'    | 9:CC:50:THR:HA     | 2.04                     | 0.57              |
| 8:CB:2093:G:C2'    | 8:CB:2094:A:H5'    | 2.34                     | 0.57              |
| 8:CB:2223:G:C2'    | 8:CB:2224:G:H5'    | 2.35                     | 0.57              |
| 8:CB:2455:G:C2     | 8:CB:2456:C:N3     | 2.72                     | 0.57              |
| 8:CB:2754:U:O2'    | 8:CB:2755:C:H3'    | 2.04                     | 0.57              |
| 8:CB:2834:G:O6     | 8:CB:2879:A:H2'    | 2.04                     | 0.57              |
| 8:CB:2841:C:H2'    | 8:CB:2842:G:O4'    | 2.04                     | 0.57              |
| 8:CB:2841:C:C2     | 8:CB:2877:G:N2     | 2.73                     | 0.57              |
| 9:CC:96:LYS:HE2    | 9:CC:96:LYS:HA     | 1.87                     | 0.57              |
| 9:CC:218:THR:O     | 9:CC:220:ARG:HD2   | 2.05                     | 0.57              |
| 10:CD:126:ASN:HA   | 10:CD:128:ARG:CZ   | 2.34                     | 0.57              |
| 11:CE:133:LEU:O    | 11:CE:133:LEU:HD22 | 2.05                     | 0.57              |
| 13:CG:101:VAL:HG23 | 13:CG:101:VAL:O    | 2.04                     | 0.57              |
| 13:CG:141:GLY:HA2  | 13:CG:144:ALA:HB3  | 1.87                     | 0.57              |
| 13:CG:162:ARG:HB2  | 13:CG:166:GLU:OE2  | 2.04                     | 0.57              |
| 19:CM:34:LYS:HA    | 19:CM:99:GLY:HA2   | 1.87                     | 0.57              |
| 23:CQ:112:ALA:O    | 23:CQ:114:ALA:N    | 2.37                     | 0.57              |
| 33:DA:250:A:H8     | 33:DA:252:U:O2     | 1.87                     | 0.57              |
| 33:DA:266:G:N2     | 33:DA:270:A:H61    | 2.02                     | 0.57              |
| 33:DA:373:A:OP2    | 33:DA:373:A:H3'    | 2.04                     | 0.57              |
| 33:DA:435:A:C6     | 33:DA:436:C:C5     | 2.91                     | 0.57              |
| 33:DA:528:C:C5     | 33:DA:529:G:N7     | 2.73                     | 0.57              |
| 36:DD:2:ARG:NH2    | 36:DD:114:ARG:HD3  | 2.20                     | 0.57              |
| 36:DD:71:PHE:O     | 36:DD:74:TYR:HB2   | 2.04                     | 0.57              |
| 36:DD:194:ILE:HD11 | 36:DD:196:GLU:HB3  | 1.86                     | 0.57              |
| 40:DH:88:LYS:HG3   | 40:DH:119:GLY:HA2  | 1.87                     | 0.57              |
| 46:DN:5:MET:HA     | 46:DN:8:ARG:CB     | 2.34                     | 0.57              |
| 47:DO:32:THR:HA    | 47:DO:62:ARG:NH1   | 2.18                     | 0.57              |
| 3:A2:13:ASN:ND2    | 3:A2:14:ARG:N      | 2.49                     | 0.57              |
| 8:AB:61:C:C1'      | 30:AX:41:HIS:NE2   | 2.67                     | 0.57              |
| 8:AB:567:U:N3      | 8:AB:568:U:C5      | 2.72                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:709:U:H2'    | 8:AB:710:U:O4'     | 2.04                     | 0.57              |
| 8:AB:978:G:C2     | 8:AB:986:C:C2      | 2.92                     | 0.57              |
| 8:AB:1339:G:H5''  | 26:AT:19:LYS:HG3   | 1.87                     | 0.57              |
| 8:AB:1361:G:H2'   | 8:AB:1362:C:H6     | 1.70                     | 0.57              |
| 8:AB:1566:A:C6    | 9:AC:213:ARG:CZ    | 2.88                     | 0.57              |
| 8:AB:1833:C:H5''  | 8:AB:1833:C:H6     | 1.70                     | 0.57              |
| 8:AB:2073:C:C2'   | 8:AB:2074:U:H5'    | 2.35                     | 0.57              |
| 8:AB:2258:C:H6    | 8:AB:2258:C:H5''   | 1.70                     | 0.57              |
| 8:AB:2366:A:H3'   | 8:AB:2367:G:H8     | 1.69                     | 0.57              |
| 8:AB:2520:C:H2'   | 8:AB:2521:C:H5'    | 1.85                     | 0.57              |
| 8:AB:2543:G:N2    | 8:AB:2765:A:C8     | 2.73                     | 0.57              |
| 8:AB:2757:A:H5'   | 8:AB:2758:A:OP2    | 2.05                     | 0.57              |
| 8:AB:2860:A:C5'   | 8:AB:2860:A:C8     | 2.87                     | 0.57              |
| 9:AC:77:VAL:N     | 9:AC:112:GLY:HA2   | 2.20                     | 0.57              |
| 9:AC:125:PRO:O    | 9:AC:192:GLY:HA3   | 2.05                     | 0.57              |
| 10:AD:160:LYS:HB2 | 10:AD:160:LYS:HZ1  | 1.69                     | 0.57              |
| 11:AE:3:LEU:O     | 11:AE:12:LEU:HD22  | 2.05                     | 0.57              |
| 11:AE:106:LYS:HB2 | 11:AE:106:LYS:NZ   | 2.19                     | 0.57              |
| 21:AO:87:ILE:O    | 21:AO:90:VAL:HA    | 2.05                     | 0.57              |
| 23:AQ:92:LYS:O    | 23:AQ:94:LEU:HD13  | 2.05                     | 0.57              |
| 24:AR:23:GLU:HA   | 24:AR:96:VAL:HG22  | 1.86                     | 0.57              |
| 25:AS:75:PHE:N    | 25:AS:75:PHE:CD1   | 2.70                     | 0.57              |
| 33:BA:108:G:C6    | 52:BT:9:ARG:HG3    | 2.39                     | 0.57              |
| 33:BA:283:U:H2'   | 33:BA:284:C:H6     | 1.70                     | 0.57              |
| 33:BA:1055:A:N7   | 33:BA:1200:C:N4    | 2.52                     | 0.57              |
| 33:BA:1386:G:O2'  | 33:BA:1387:G:H5'   | 2.04                     | 0.57              |
| 35:BC:51:VAL:HG22 | 35:BC:52:SER:N     | 2.20                     | 0.57              |
| 37:BE:127:TYR:O   | 37:BE:128:GLY:C    | 2.43                     | 0.57              |
| 38:BF:5:GLU:HA    | 38:BF:63:ASN:HA    | 1.85                     | 0.57              |
| 41:BI:19:PHE:C    | 41:BI:20:ILE:HD12  | 2.25                     | 0.57              |
| 43:BK:81:LEU:O    | 43:BK:106:ILE:HA   | 2.05                     | 0.57              |
| 44:BL:89:LEU:HB3  | 44:BL:92:VAL:CG2   | 2.32                     | 0.57              |
| 48:BP:7:ALA:HB1   | 48:BP:29:ASN:HB3   | 1.87                     | 0.57              |
| 53:BU:11:PHE:CB   | 35:DC:105:VAL:HG11 | 2.34                     | 0.57              |
| 4:C3:12:ARG:NH1   | 18:CL:62:PRO:CG    | 2.62                     | 0.57              |
| 8:CB:35:G:C2      | 8:CB:36:G:H1'      | 2.40                     | 0.57              |
| 8:CB:93:G:H2'     | 8:CB:94:A:O4'      | 2.04                     | 0.57              |
| 8:CB:182:A:O5'    | 8:CB:182:A:H8      | 1.88                     | 0.57              |
| 8:CB:304:U:O2     | 8:CB:313:G:N2      | 2.35                     | 0.57              |
| 8:CB:346:A:H2'    | 8:CB:347:A:H5''    | 1.85                     | 0.57              |
| 8:CB:493:G:HO2'   | 25:CS:7:HIS:C      | 2.03                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:772:C:N3      | 8:CB:773:U:H5      | 2.01                     | 0.57              |
| 8:CB:911:A:H2      | 8:CB:2277:G:N3     | 2.02                     | 0.57              |
| 8:CB:915:C:H3'     | 8:CB:916:G:H8      | 1.70                     | 0.57              |
| 8:CB:968:C:C2      | 8:CB:969:G:C8      | 2.93                     | 0.57              |
| 8:CB:1322:A:H4'    | 25:CS:82:MET:HE3   | 1.86                     | 0.57              |
| 8:CB:1778:U:C5     | 8:CB:1784:A:N3     | 2.72                     | 0.57              |
| 8:CB:1783:A:H5''   | 8:CB:1784:A:P      | 2.45                     | 0.57              |
| 8:CB:1870:C:H2'    | 8:CB:1870:C:O2     | 2.03                     | 0.57              |
| 8:CB:2024:G:H8     | 8:CB:2024:G:O5'    | 1.87                     | 0.57              |
| 8:CB:2307:G:H2'    | 8:CB:2307:G:N3     | 2.19                     | 0.57              |
| 8:CB:2387:U:O2'    | 29:CW:37:VAL:HG11  | 2.04                     | 0.57              |
| 8:CB:2618:G:C4     | 8:CB:2619:C:C5     | 2.92                     | 0.57              |
| 9:CC:44:ASN:ND2    | 9:CC:47:ARG:O      | 2.37                     | 0.57              |
| 10:CD:3:GLY:C      | 10:CD:4:LEU:HD22   | 2.25                     | 0.57              |
| 16:CJ:12:LYS:O     | 16:CJ:50:THR:HG21  | 2.04                     | 0.57              |
| 16:CJ:99:ARG:CG    | 16:CJ:103:ILE:HD13 | 2.35                     | 0.57              |
| 18:CL:4:ASN:HD22   | 18:CL:5:THR:N      | 1.95                     | 0.57              |
| 18:CL:57:LEU:CA    | 18:CL:58:TYR:HD2   | 2.14                     | 0.57              |
| 21:CO:95:SER:C     | 21:CO:97:PHE:H     | 2.08                     | 0.57              |
| 24:CR:5:PHE:N      | 24:CR:41:ILE:HG12  | 2.20                     | 0.57              |
| 24:CR:65:ALA:H     | 24:CR:100:GLY:C    | 2.08                     | 0.57              |
| 25:CS:11:ARG:HH11  | 25:CS:11:ARG:CG    | 2.08                     | 0.57              |
| 28:CV:62:THR:HA    | 28:CV:70:ILE:HD11  | 1.86                     | 0.57              |
| 29:CW:42:THR:HG21  | 29:CW:67:LYS:CB    | 2.32                     | 0.57              |
| 33:DA:19:A:H1'     | 33:DA:864:A:H1'    | 1.85                     | 0.57              |
| 33:DA:42:G:N2      | 33:DA:401:C:H1'    | 2.19                     | 0.57              |
| 33:DA:96:U:H6      | 33:DA:96:U:O5'     | 1.88                     | 0.57              |
| 33:DA:367:U:O2     | 33:DA:369:G:C8     | 2.58                     | 0.57              |
| 33:DA:369:G:OP2    | 33:DA:388:G:N1     | 2.35                     | 0.57              |
| 33:DA:585:G:C2     | 33:DA:586:C:O2     | 2.57                     | 0.57              |
| 33:DA:788:U:H2'    | 33:DA:789:U:C5'    | 2.32                     | 0.57              |
| 33:DA:942:G:C2     | 33:DA:943:U:C4     | 2.93                     | 0.57              |
| 33:DA:1109:C:C4    | 33:DA:1110:A:C8    | 2.93                     | 0.57              |
| 33:DA:1356:G:C2    | 33:DA:1357:A:C5    | 2.93                     | 0.57              |
| 33:DA:1371:G:O3'   | 41:DI:70:GLY:HA3   | 2.05                     | 0.57              |
| 33:DA:1386:G:N3    | 33:DA:1387:G:N7    | 2.51                     | 0.57              |
| 33:DA:1424:U:O2    | 33:DA:1425:U:O2    | 2.23                     | 0.57              |
| 33:DA:1479:C:N3    | 33:DA:1480:A:N7    | 2.52                     | 0.57              |
| 35:DC:65:VAL:CG2   | 35:DC:100:ILE:HD12 | 2.33                     | 0.57              |
| 35:DC:156:LEU:HD12 | 35:DC:163:ARG:NE   | 2.19                     | 0.57              |
| 36:DD:90:LEU:HD21  | 36:DD:196:GLU:CG   | 2.34                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 52:DT:69:ASN:H    | 52:DT:69:ASN:HD22 | 1.52                     | 0.57              |
| 3:A2:35:ARG:HH12  | 3:A2:42:LEU:HD23  | 1.69                     | 0.57              |
| 8:AB:45:G:N2      | 8:AB:434:U:N3     | 2.52                     | 0.57              |
| 8:AB:95:A:O2'     | 30:AX:41:HIS:HB2  | 2.05                     | 0.57              |
| 8:AB:263:G:C2     | 8:AB:264:C:H1'    | 2.39                     | 0.57              |
| 8:AB:600:G:H2'    | 8:AB:601:C:C6     | 2.40                     | 0.57              |
| 8:AB:663:G:C6     | 8:AB:664:G:C5     | 2.92                     | 0.57              |
| 8:AB:751:A:C6     | 8:AB:789:A:C5     | 2.93                     | 0.57              |
| 8:AB:811:U:C5     | 18:AL:29:LYS:NZ   | 2.73                     | 0.57              |
| 8:AB:1041:G:N2    | 8:AB:1115:G:C2    | 2.73                     | 0.57              |
| 8:AB:1041:G:H21   | 8:AB:1115:G:N2    | 2.02                     | 0.57              |
| 8:AB:1285:A:H2'   | 8:AB:1286:A:C5'   | 2.34                     | 0.57              |
| 8:AB:1707:G:C6    | 8:AB:1708:C:C4    | 2.92                     | 0.57              |
| 8:AB:1779:U:C5    | 8:AB:1784:A:N7    | 2.73                     | 0.57              |
| 8:AB:1861:G:C2    | 8:AB:1882:U:O2    | 2.57                     | 0.57              |
| 8:AB:1970:A:H4'   | 8:AB:1970:A:OP1   | 2.05                     | 0.57              |
| 8:AB:2102:G:N2    | 8:AB:2188:U:C2    | 2.73                     | 0.57              |
| 8:AB:2324:U:H5'   | 8:AB:2325:G:H5'   | 1.87                     | 0.57              |
| 8:AB:2485:G:H4'   | 19:AM:121:ALA:HA  | 1.87                     | 0.57              |
| 8:AB:2527:C:C2    | 8:AB:2528:U:C6    | 2.92                     | 0.57              |
| 8:AB:2637:U:C2    | 8:AB:2782:G:N2    | 2.73                     | 0.57              |
| 8:AB:2807:U:H5'   | 8:AB:2808:G:OP2   | 2.04                     | 0.57              |
| 9:AC:180:MET:SD   | 9:AC:265:PHE:HD1  | 2.27                     | 0.57              |
| 9:AC:197:ALA:C    | 9:AC:199:HIS:N    | 2.59                     | 0.57              |
| 12:AF:113:PHE:HZ  | 12:AF:175:PRO:HB3 | 1.70                     | 0.57              |
| 15:AI:82:ALA:HB1  | 15:AI:104:GLN:NE2 | 2.19                     | 0.57              |
| 16:AJ:71:ASP:O    | 16:AJ:72:LYS:C    | 2.43                     | 0.57              |
| 18:AL:40:SER:HA   | 18:AL:41:ARG:HE   | 1.69                     | 0.57              |
| 20:AN:82:GLU:O    | 20:AN:86:ARG:HG3  | 2.05                     | 0.57              |
| 20:AN:102:PHE:H   | 20:AN:109:PRO:HA  | 1.69                     | 0.57              |
| 21:AO:111:ARG:HD3 | 21:AO:117:PHE:CE2 | 2.39                     | 0.57              |
| 23:AQ:63:ARG:HB3  | 23:AQ:63:ARG:NH1  | 2.11                     | 0.57              |
| 23:AQ:94:LEU:HD22 | 23:AQ:95:ALA:N    | 2.20                     | 0.57              |
| 33:BA:127:G:C2    | 33:BA:128:G:C8    | 2.92                     | 0.57              |
| 33:BA:755:G:H5''  | 33:BA:756:C:OP2   | 2.04                     | 0.57              |
| 33:BA:763:G:C5    | 33:BA:764:C:H5    | 2.23                     | 0.57              |
| 33:BA:994:A:H5'   | 33:BA:994:A:C8    | 2.33                     | 0.57              |
| 33:BA:1005:A:H8   | 33:BA:1006:G:H8   | 1.51                     | 0.57              |
| 33:BA:1387:G:H2'  | 33:BA:1388:C:H6   | 1.69                     | 0.57              |
| 36:BD:61:ARG:HH12 | 36:BD:62:ARG:NH2  | 2.03                     | 0.57              |
| 36:BD:84:ASN:HD22 | 36:BD:87:GLU:N    | 1.96                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BE:22:LYS:O     | 37:BE:29:ILE:HG12  | 2.05                     | 0.57              |
| 37:BE:35:LEU:CD1   | 37:BE:133:ILE:HA   | 2.32                     | 0.57              |
| 37:BE:35:LEU:HD21  | 37:BE:136:VAL:HG11 | 1.86                     | 0.57              |
| 39:BG:114:SER:O    | 39:BG:118:ARG:HB2  | 2.05                     | 0.57              |
| 40:BH:14:ARG:HH11  | 40:BH:14:ARG:CG    | 2.17                     | 0.57              |
| 45:BM:88:LEU:O     | 45:BM:92:ARG:HG3   | 2.05                     | 0.57              |
| 52:BT:8:LYS:HG2    | 52:BT:12:GLN:HG3   | 1.87                     | 0.57              |
| 4:C3:22:LYS:O      | 4:C3:23:HIS:HB3    | 2.05                     | 0.57              |
| 7:CA:78:A:O2'      | 8:CB:862:G:H4'     | 2.05                     | 0.57              |
| 8:CB:2:G:N2        | 8:CB:2902:C:H1'    | 2.19                     | 0.57              |
| 8:CB:172:A:H2'     | 8:CB:173:A:C8      | 2.40                     | 0.57              |
| 8:CB:381:G:N2      | 8:CB:394:C:C6      | 2.72                     | 0.57              |
| 8:CB:600:G:H2'     | 8:CB:601:C:C6      | 2.39                     | 0.57              |
| 8:CB:672:C:O2      | 8:CB:672:C:H2'     | 2.05                     | 0.57              |
| 8:CB:874:G:H5''    | 8:CB:875:G:OP2     | 2.05                     | 0.57              |
| 8:CB:999:U:O2      | 8:CB:1157:G:C2     | 2.58                     | 0.57              |
| 8:CB:1190:G:OP1    | 18:CL:38:GLN:HA    | 2.03                     | 0.57              |
| 8:CB:1285:A:C6     | 8:CB:1329:U:C5     | 2.93                     | 0.57              |
| 8:CB:1366:A:C4     | 8:CB:1367:A:C8     | 2.93                     | 0.57              |
| 8:CB:1429:G:H2'    | 8:CB:1430:G:H5'    | 1.87                     | 0.57              |
| 8:CB:1652:A:N6     | 8:CB:1653:G:H22    | 2.03                     | 0.57              |
| 8:CB:1906:G:H3'    | 8:CB:1906:G:C8     | 2.40                     | 0.57              |
| 8:CB:2371:G:N3     | 8:CB:2372:U:C6     | 2.73                     | 0.57              |
| 8:CB:2394:C:H5''   | 18:CL:64:PHE:CE2   | 2.39                     | 0.57              |
| 8:CB:2592:G:C2     | 8:CB:2593:U:C2     | 2.93                     | 0.57              |
| 8:CB:2753:A:C2     | 8:CB:2754:U:N3     | 2.73                     | 0.57              |
| 9:CC:123:ILE:HD12  | 9:CC:123:ILE:H     | 1.68                     | 0.57              |
| 11:CE:151:GLY:O    | 11:CE:158:PHE:CE1  | 2.58                     | 0.57              |
| 12:CF:71:LYS:HE2   | 12:CF:72:SER:O     | 2.05                     | 0.57              |
| 15:CI:121:ILE:HD13 | 15:CI:121:ILE:H    | 1.70                     | 0.57              |
| 16:CJ:44:TYR:CE1   | 16:CJ:48:VAL:HG23  | 2.40                     | 0.57              |
| 16:CJ:62:VAL:O     | 16:CJ:64:VAL:N     | 2.38                     | 0.57              |
| 18:CL:2:ARG:NH1    | 18:CL:6:LEU:HD22   | 2.20                     | 0.57              |
| 22:CP:7:LEU:O      | 22:CP:11:GLN:HG3   | 2.05                     | 0.57              |
| 26:CT:57:VAL:HG23  | 26:CT:86:THR:HG23  | 1.87                     | 0.57              |
| 29:CW:28:GLU:CA    | 29:CW:61:LYS:HB2   | 2.35                     | 0.57              |
| 31:CY:40:THR:HG23  | 31:CY:43:ILE:H     | 1.70                     | 0.57              |
| 32:CZ:3:LYS:HD3    | 32:CZ:9:TYR:CD1    | 2.40                     | 0.57              |
| 33:DA:57:G:H1      | 33:DA:356:A:N6     | 2.02                     | 0.57              |
| 33:DA:203:G:C1'    | 33:DA:465:A:H62    | 2.16                     | 0.57              |
| 33:DA:453:G:C2     | 33:DA:454:G:C4     | 2.93                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:674:G:C4    | 33:DA:675:A:C8     | 2.93                     | 0.57              |
| 33:DA:699:C:C3'   | 33:DA:700:G:H5''   | 2.35                     | 0.57              |
| 33:DA:1169:A:C4   | 33:DA:1170:A:C8    | 2.93                     | 0.57              |
| 33:DA:1375:A:H2'  | 33:DA:1376:U:C6    | 2.39                     | 0.57              |
| 33:DA:1481:U:H2'  | 33:DA:1482:G:H8    | 1.70                     | 0.57              |
| 36:DD:104:MET:HB3 | 36:DD:106:PHE:CE2  | 2.39                     | 0.57              |
| 37:DE:81:GLN:NE2  | 37:DE:149:PRO:HD3  | 2.20                     | 0.57              |
| 38:DF:44:ARG:HG2  | 38:DF:44:ARG:O     | 2.05                     | 0.57              |
| 38:DF:74:LEU:HD13 | 38:DF:75:GLU:N     | 2.20                     | 0.57              |
| 43:DK:60:PHE:CD1  | 43:DK:60:PHE:C     | 2.78                     | 0.57              |
| 44:DL:115:LYS:O   | 44:DL:116:TYR:CB   | 2.53                     | 0.57              |
| 46:DN:76:PHE:O    | 46:DN:78:LEU:N     | 2.31                     | 0.57              |
| 2:A1:39:ASP:HB2   | 2:A1:45:HIS:CE1    | 2.39                     | 0.57              |
| 3:A2:14:ARG:HH12  | 8:AB:1356:G:H4'    | 1.70                     | 0.57              |
| 8:AB:6:A:O2'      | 16:AJ:135:GLN:HG3  | 2.05                     | 0.57              |
| 8:AB:97:C:H3'     | 8:AB:97:C:C6       | 2.39                     | 0.57              |
| 8:AB:106:C:C6     | 8:AB:106:C:C3'     | 2.88                     | 0.57              |
| 8:AB:194:G:C4     | 8:AB:195:A:N7      | 2.73                     | 0.57              |
| 8:AB:328:U:H4'    | 27:AU:65:GLN:CG    | 2.35                     | 0.57              |
| 8:AB:368:A:C6     | 8:AB:369:U:O4      | 2.58                     | 0.57              |
| 8:AB:538:A:N7     | 8:AB:539:G:N7      | 2.53                     | 0.57              |
| 8:AB:743:A:C2'    | 8:AB:744:U:H5'     | 2.34                     | 0.57              |
| 8:AB:993:G:N2     | 8:AB:1162:G:C4     | 2.73                     | 0.57              |
| 8:AB:1005:C:H2'   | 8:AB:1006:C:H6     | 1.69                     | 0.57              |
| 8:AB:1036:G:C5    | 8:AB:1120:G:C6     | 2.92                     | 0.57              |
| 8:AB:1093:G:C6    | 8:AB:1094:U:C5     | 2.93                     | 0.57              |
| 8:AB:1188:U:H2'   | 8:AB:1189:A:H5'    | 1.86                     | 0.57              |
| 8:AB:1531:C:H2'   | 8:AB:1532:A:H8     | 1.69                     | 0.57              |
| 8:AB:1535:A:H8    | 8:AB:1537:G:O6     | 1.87                     | 0.57              |
| 8:AB:1611:C:N3    | 8:AB:1612:C:H5     | 2.03                     | 0.57              |
| 8:AB:1783:A:C2    | 8:AB:2587:A:C6     | 2.93                     | 0.57              |
| 8:AB:2014:A:H8    | 8:AB:2014:A:O5'    | 1.88                     | 0.57              |
| 8:AB:2144:G:H2'   | 8:AB:2146:C:H5'    | 1.86                     | 0.57              |
| 8:AB:2231:U:C2    | 8:AB:2232:C:C6     | 2.93                     | 0.57              |
| 8:AB:2290:G:C5    | 8:AB:2291:U:C5     | 2.92                     | 0.57              |
| 8:AB:2454:G:C5    | 8:AB:2455:G:N7     | 2.73                     | 0.57              |
| 8:AB:2681:C:H4'   | 8:AB:2682:A:H5'    | 1.86                     | 0.57              |
| 8:AB:2848:G:O2'   | 22:AP:96:LEU:HD13  | 2.04                     | 0.57              |
| 8:AB:2849:U:N3    | 8:AB:2867:G:N7     | 2.52                     | 0.57              |
| 8:AB:2892:G:H5''  | 8:AB:2894:G:H22    | 1.70                     | 0.57              |
| 10:AD:108:ASP:OD1 | 10:AD:207:VAL:HG22 | 2.05                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AD:116:LYS:HB2 | 10:AD:165:MET:CB   | 2.34                     | 0.57              |
| 11:AE:163:ASN:CB  | 11:AE:166:LYS:HB2  | 2.35                     | 0.57              |
| 14:AH:43:ASN:ND2  | 14:AH:43:ASN:N     | 2.53                     | 0.57              |
| 17:AK:12:ASP:N    | 17:AK:85:VAL:HG22  | 2.20                     | 0.57              |
| 17:AK:32:TYR:N    | 17:AK:32:TYR:HD1   | 2.00                     | 0.57              |
| 18:AL:38:GLN:N    | 18:AL:41:ARG:CZ    | 2.66                     | 0.57              |
| 19:AM:123:LYS:HB3 | 19:AM:123:LYS:NZ   | 2.20                     | 0.57              |
| 20:AN:11:ASN:O    | 20:AN:12:ARG:CB    | 2.52                     | 0.57              |
| 20:AN:29:VAL:HG23 | 20:AN:75:ILE:HD11  | 1.87                     | 0.57              |
| 23:AQ:30:VAL:CG1  | 23:AQ:31:TYR:H     | 2.08                     | 0.57              |
| 26:AT:77:ARG:HG2  | 26:AT:78:SER:H     | 1.70                     | 0.57              |
| 27:AU:78:LYS:CD   | 27:AU:98:ASN:HB2   | 2.35                     | 0.57              |
| 29:AW:59:PHE:CZ   | 29:AW:81:ILE:HD13  | 2.39                     | 0.57              |
| 30:AX:4:LYS:O     | 30:AX:7:ARG:HG2    | 2.04                     | 0.57              |
| 30:AX:21:LEU:HB3  | 30:AX:47:ARG:HD2   | 1.86                     | 0.57              |
| 33:BA:93:U:H3'    | 33:BA:94:G:H5''    | 1.86                     | 0.57              |
| 33:BA:275:G:C6    | 33:BA:276:G:C6     | 2.93                     | 0.57              |
| 33:BA:444:G:H1    | 33:BA:490:C:H42    | 1.51                     | 0.57              |
| 33:BA:599:C:H5''  | 40:BH:87:ARG:CA    | 2.31                     | 0.57              |
| 33:BA:687:A:N6    | 33:BA:703:G:N3     | 2.53                     | 0.57              |
| 33:BA:798:U:H2'   | 33:BA:799:G:O5'    | 2.05                     | 0.57              |
| 33:BA:872:A:C4    | 33:BA:874:G:N7     | 2.73                     | 0.57              |
| 33:BA:906:A:O2'   | 33:BA:907:A:OP1    | 2.20                     | 0.57              |
| 33:BA:1006:G:H2'  | 33:BA:1006:G:N3    | 2.20                     | 0.57              |
| 33:BA:1062:U:H2'  | 33:BA:1063:C:C5    | 2.40                     | 0.57              |
| 33:BA:1067:A:H1'  | 33:BA:1068:G:C8    | 2.40                     | 0.57              |
| 33:BA:1194:U:H2'  | 33:BA:1195:C:C6    | 2.40                     | 0.57              |
| 33:BA:1205:U:C1'  | 35:BC:194:VAL:HG22 | 2.35                     | 0.57              |
| 33:BA:1363:A:C8   | 33:BA:1365:G:C5    | 2.92                     | 0.57              |
| 36:BD:123:MET:HA  | 36:BD:127:ARG:O    | 2.04                     | 0.57              |
| 40:BH:6:ILE:HB    | 40:BH:76:ARG:HH22  | 1.69                     | 0.57              |
| 41:BI:80:HIS:O    | 41:BI:84:ARG:HB2   | 2.05                     | 0.57              |
| 44:BL:20:VAL:HG12 | 44:BL:22:ALA:H     | 1.70                     | 0.57              |
| 44:BL:90:PRO:C    | 44:BL:92:VAL:H     | 2.09                     | 0.57              |
| 45:BM:18:LEU:HD23 | 45:BM:21:ILE:HD11  | 1.85                     | 0.57              |
| 45:BM:43:LYS:HD2  | 45:BM:43:LYS:N     | 2.20                     | 0.57              |
| 47:BO:59:VAL:O    | 47:BO:62:ARG:HB3   | 2.04                     | 0.57              |
| 52:BT:70:LYS:HA   | 52:BT:73:ARG:CG    | 2.28                     | 0.57              |
| 2:C1:37:LYS:HB2   | 8:CB:2344:U:C3'    | 2.35                     | 0.57              |
| 4:C3:4:LYS:HZ1    | 4:C3:60:CYS:CA     | 2.18                     | 0.57              |
| 5:C4:8:LYS:HB3    | 8:CB:1032:A:OP1    | 2.05                     | 0.57              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:260:G:C6      | 8:CB:261:G:C8      | 2.92                     | 0.57              |
| 8:CB:269:C:N4      | 8:CB:270:A:N6      | 2.52                     | 0.57              |
| 8:CB:527:C:H5''    | 8:CB:2779:U:C2     | 2.40                     | 0.57              |
| 8:CB:1162:G:N3     | 24:CR:93:PHE:CZ    | 2.73                     | 0.57              |
| 8:CB:1326:U:O2'    | 8:CB:1327:A:H5'    | 2.05                     | 0.57              |
| 8:CB:1613:G:N1     | 8:CB:1617:C:O2     | 2.38                     | 0.57              |
| 8:CB:2079:U:N3     | 8:CB:2080:A:N7     | 2.52                     | 0.57              |
| 8:CB:2143:C:H3'    | 8:CB:2144:G:H8     | 1.68                     | 0.57              |
| 9:CC:62:ARG:NH1    | 9:CC:62:ARG:HG2    | 2.17                     | 0.57              |
| 9:CC:141:HIS:CD2   | 9:CC:193:GLU:H     | 2.22                     | 0.57              |
| 10:CD:25:THR:HA    | 10:CD:188:LEU:HD12 | 1.86                     | 0.57              |
| 10:CD:160:LYS:HE3  | 10:CD:160:LYS:HA   | 1.87                     | 0.57              |
| 11:CE:146:VAL:O    | 11:CE:146:VAL:HG12 | 2.05                     | 0.57              |
| 13:CG:116:LEU:HD12 | 13:CG:117:PRO:O    | 2.05                     | 0.57              |
| 13:CG:120:ILE:HD12 | 13:CG:139:VAL:HG12 | 1.87                     | 0.57              |
| 13:CG:169:ARG:H    | 13:CG:169:ARG:HE   | 1.53                     | 0.57              |
| 14:CH:36:ALA:O     | 14:CH:37:VAL:HG22  | 2.05                     | 0.57              |
| 15:CI:12:VAL:HB    | 15:CI:23:VAL:CG2   | 2.34                     | 0.57              |
| 15:CI:21:PRO:CB    | 15:CI:22:PRO:HD3   | 2.29                     | 0.57              |
| 15:CI:125:THR:O    | 15:CI:129:GLU:HG3  | 2.05                     | 0.57              |
| 16:CJ:85:LYS:NZ    | 16:CJ:86:GLN:H     | 2.03                     | 0.57              |
| 17:CK:2:ILE:HG21   | 17:CK:67:LYS:HD2   | 1.87                     | 0.57              |
| 23:CQ:96:ASP:O     | 23:CQ:97:ILE:HD13  | 2.05                     | 0.57              |
| 27:CU:3:LYS:NZ     | 27:CU:3:LYS:CB     | 2.68                     | 0.57              |
| 31:CY:3:THR:O      | 31:CY:4:ILE:C      | 2.42                     | 0.57              |
| 31:CY:11:SER:O     | 31:CY:12:ALA:CB    | 2.53                     | 0.57              |
| 33:DA:15:G:H1'     | 37:DE:23:THR:CG2   | 2.31                     | 0.57              |
| 33:DA:77:A:H3'     | 33:DA:77:A:H8      | 1.68                     | 0.57              |
| 33:DA:189:A:H5''   | 33:DA:189:A:C8     | 2.39                     | 0.57              |
| 33:DA:324:G:N2     | 33:DA:327:A:N7     | 2.53                     | 0.57              |
| 33:DA:604:G:C6     | 33:DA:605:U:C2     | 2.93                     | 0.57              |
| 33:DA:633:G:H2'    | 33:DA:634:C:C6     | 2.39                     | 0.57              |
| 33:DA:880:C:H6     | 33:DA:880:C:O5'    | 1.88                     | 0.57              |
| 33:DA:901:A:H2'    | 33:DA:902:G:O5'    | 2.04                     | 0.57              |
| 33:DA:1241:G:H1    | 33:DA:1296:C:H42   | 1.52                     | 0.57              |
| 33:DA:1468:A:N3    | 33:DA:1469:C:C6    | 2.73                     | 0.57              |
| 35:DC:83:VAL:HG12  | 35:DC:86:LEU:HD12  | 1.85                     | 0.57              |
| 35:DC:171:ARG:O    | 35:DC:172:VAL:HG22 | 2.04                     | 0.57              |
| 36:DD:90:LEU:HG    | 36:DD:187:ARG:NH1  | 2.20                     | 0.57              |
| 42:DJ:40:ILE:HD11  | 42:DJ:73:LEU:HD12  | 1.87                     | 0.57              |
| 42:DJ:51:VAL:HG22  | 42:DJ:52:LEU:H     | 1.70                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 45:DM:48:SER:C    | 45:DM:50:GLY:H     | 2.08                     | 0.57              |
| 47:DO:42:PHE:C    | 47:DO:44:GLU:N     | 2.57                     | 0.57              |
| 2:A1:13:SER:N     | 2:A1:50:GLU:OE2    | 2.37                     | 0.56              |
| 7:AA:23:G:C4      | 7:AA:24:G:O6       | 2.57                     | 0.56              |
| 8:AB:321:U:OP2    | 11:AE:130:LYS:HE3  | 2.05                     | 0.56              |
| 8:AB:742:A:H2'    | 8:AB:743:A:C8      | 2.40                     | 0.56              |
| 8:AB:801:G:H3'    | 8:AB:802:A:H5''    | 1.87                     | 0.56              |
| 8:AB:978:G:C6     | 8:AB:986:C:C4      | 2.92                     | 0.56              |
| 8:AB:1010:A:O5'   | 8:AB:1010:A:H8     | 1.87                     | 0.56              |
| 8:AB:1190:G:OP1   | 18:AL:41:ARG:HD2   | 2.04                     | 0.56              |
| 8:AB:1353:A:C2    | 8:AB:1354:A:N7     | 2.73                     | 0.56              |
| 8:AB:1797:G:H2'   | 8:AB:1798:U:C6     | 2.40                     | 0.56              |
| 8:AB:1802:A:O2'   | 9:AC:255:LYS:HE2   | 2.05                     | 0.56              |
| 8:AB:1829:A:H5''  | 8:AB:1829:A:C8     | 2.20                     | 0.56              |
| 8:AB:1954:G:C6    | 55:AB:4660:HOH:O   | 2.54                     | 0.56              |
| 8:AB:1998:A:N6    | 8:AB:1999:C:N4     | 2.53                     | 0.56              |
| 8:AB:2009:A:O3'   | 25:AS:41:LYS:HB2   | 2.05                     | 0.56              |
| 8:AB:2058:A:C5    | 55:AB:4591:HOH:O   | 2.53                     | 0.56              |
| 8:AB:2234:G:H2'   | 8:AB:2235:G:C8     | 2.39                     | 0.56              |
| 8:AB:2310:C:H5'   | 8:AB:2311:A:OP2    | 2.05                     | 0.56              |
| 8:AB:2671:G:C2    | 8:AB:2672:U:C2     | 2.93                     | 0.56              |
| 8:AB:2821:A:OP2   | 20:AN:3:HIS:NE2    | 2.36                     | 0.56              |
| 8:AB:2873:A:O3'   | 20:AN:5:LYS:CB     | 2.53                     | 0.56              |
| 9:AC:17:LYS:N     | 9:AC:17:LYS:CE     | 2.66                     | 0.56              |
| 9:AC:21:PRO:HD2   | 9:AC:202:ARG:HH12  | 1.70                     | 0.56              |
| 10:AD:184:ARG:O   | 10:AD:186:LEU:HD13 | 2.04                     | 0.56              |
| 11:AE:53:THR:O    | 11:AE:55:SER:N     | 2.38                     | 0.56              |
| 11:AE:158:PHE:CZ  | 11:AE:169:VAL:HA   | 2.40                     | 0.56              |
| 16:AJ:3:THR:O     | 16:AJ:4:PHE:CD2    | 2.58                     | 0.56              |
| 16:AJ:35:ARG:HH22 | 16:AJ:41:LYS:CB    | 2.02                     | 0.56              |
| 21:AO:1:MET:CE    | 21:AO:3:LYS:HD3    | 2.35                     | 0.56              |
| 22:AP:8:GLU:HA    | 22:AP:11:GLN:CD    | 2.24                     | 0.56              |
| 24:AR:41:ILE:HD11 | 24:AR:60:LYS:HB3   | 1.87                     | 0.56              |
| 26:AT:30:ILE:HG23 | 26:AT:32:LEU:HD11  | 1.86                     | 0.56              |
| 26:AT:57:VAL:O    | 26:AT:85:VAL:HA    | 2.05                     | 0.56              |
| 27:AU:29:SER:O    | 27:AU:30:SER:HB2   | 2.05                     | 0.56              |
| 28:AV:70:ILE:HD13 | 28:AV:70:ILE:N     | 2.20                     | 0.56              |
| 29:AW:36:ILE:HD12 | 29:AW:36:ILE:C     | 2.25                     | 0.56              |
| 30:AX:22:LEU:HD22 | 30:AX:26:PHE:CG    | 2.40                     | 0.56              |
| 33:BA:72:A:H5'    | 33:BA:72:A:H8      | 1.70                     | 0.56              |
| 33:BA:378:G:N2    | 33:BA:386:C:C2     | 2.73                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:413:G:O6    | 36:BD:32:LYS:HE3  | 2.04                     | 0.56              |
| 33:BA:479:U:C6    | 33:BA:479:U:C3'   | 2.88                     | 0.56              |
| 33:BA:484:G:H4'   | 33:BA:485:U:C5'   | 2.33                     | 0.56              |
| 33:BA:515:G:N1    | 33:BA:537:G:N2    | 2.53                     | 0.56              |
| 33:BA:558:G:H5'   | 55:BA:5111:HOH:O  | 2.03                     | 0.56              |
| 33:BA:716:A:H1'   | 43:BK:119:GLY:HA2 | 1.87                     | 0.56              |
| 33:BA:810:C:H2'   | 33:BA:811:C:O4'   | 2.05                     | 0.56              |
| 33:BA:1126:U:O2   | 33:BA:1280:A:H3'  | 2.05                     | 0.56              |
| 34:BB:61:SER:HA   | 34:BB:224:ARG:HB3 | 1.86                     | 0.56              |
| 44:BL:54:VAL:O    | 44:BL:61:GLU:HA   | 2.05                     | 0.56              |
| 47:BO:29:ALA:HA   | 47:BO:84:LEU:HD21 | 1.87                     | 0.56              |
| 47:BO:53:ARG:HA   | 47:BO:56:LEU:CD1  | 2.34                     | 0.56              |
| 48:BP:20:VAL:CG2  | 48:BP:32:PHE:HB2  | 2.35                     | 0.56              |
| 48:BP:78:VAL:O    | 48:BP:79:ASN:C    | 2.43                     | 0.56              |
| 1:C0:36:LYS:HE3   | 1:C0:48:TYR:HE1   | 1.70                     | 0.56              |
| 7:CA:50:A:C5      | 7:CA:51:G:C8      | 2.93                     | 0.56              |
| 7:CA:59:A:H2'     | 7:CA:60:C:C6      | 2.39                     | 0.56              |
| 8:CB:89:A:H2'     | 8:CB:90:U:C6      | 2.40                     | 0.56              |
| 8:CB:599:A:H1'    | 8:CB:659:G:H22    | 1.70                     | 0.56              |
| 8:CB:728:G:H3'    | 8:CB:729:G:H5''   | 1.87                     | 0.56              |
| 8:CB:1035:U:C6    | 8:CB:1035:U:O5'   | 2.58                     | 0.56              |
| 8:CB:1149:G:H2'   | 8:CB:1150:C:C6    | 2.40                     | 0.56              |
| 8:CB:1434:A:H2'   | 8:CB:1435:G:O5'   | 2.04                     | 0.56              |
| 8:CB:1596:A:C2'   | 8:CB:1597:A:H5'   | 2.35                     | 0.56              |
| 8:CB:1792:G:P     | 9:CC:203:VAL:HG23 | 2.45                     | 0.56              |
| 8:CB:2363:G:H2'   | 8:CB:2364:C:H6    | 1.69                     | 0.56              |
| 8:CB:2455:G:C6    | 8:CB:2456:C:N4    | 2.73                     | 0.56              |
| 8:CB:2721:A:H2'   | 8:CB:2722:G:H8    | 1.70                     | 0.56              |
| 8:CB:2722:G:C5    | 8:CB:2723:C:C5    | 2.93                     | 0.56              |
| 8:CB:2771:C:O2    | 8:CB:2772:C:C4    | 2.58                     | 0.56              |
| 8:CB:2787:C:H1'   | 10:CD:62:LYS:HD3  | 1.86                     | 0.56              |
| 9:CC:70:LYS:HD3   | 9:CC:73:ILE:HG21  | 1.87                     | 0.56              |
| 9:CC:86:ARG:HB3   | 9:CC:86:ARG:CZ    | 2.34                     | 0.56              |
| 16:CJ:45:THR:CA   | 23:CQ:63:ARG:HH21 | 2.17                     | 0.56              |
| 16:CJ:85:LYS:HA   | 16:CJ:85:LYS:NZ   | 2.19                     | 0.56              |
| 17:CK:16:ALA:HB3  | 17:CK:47:ILE:HD13 | 1.87                     | 0.56              |
| 18:CL:63:LYS:CG   | 18:CL:64:PHE:H    | 2.17                     | 0.56              |
| 19:CM:81:ARG:HB2  | 19:CM:81:ARG:HH11 | 1.70                     | 0.56              |
| 23:CQ:102:LYS:O   | 23:CQ:105:PHE:N   | 2.38                     | 0.56              |
| 24:CR:75:VAL:H    | 24:CR:76:LYS:HG3  | 1.69                     | 0.56              |
| 27:CU:41:VAL:HG23 | 27:CU:57:ILE:HG23 | 1.86                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 29:CW:68:PHE:O     | 29:CW:69:GLU:CB   | 2.51                     | 0.56              |
| 31:CY:1:ALA:HB2    | 31:CY:38:GLU:OE1  | 2.05                     | 0.56              |
| 33:DA:340:U:N3     | 33:DA:350:G:N2    | 2.53                     | 0.56              |
| 33:DA:394:G:N2     | 33:DA:395:C:H1'   | 2.20                     | 0.56              |
| 33:DA:621:A:H2'    | 33:DA:622:A:O4'   | 2.04                     | 0.56              |
| 33:DA:679:C:O2'    | 33:DA:680:C:H5'   | 2.04                     | 0.56              |
| 33:DA:718:A:N6     | 33:DA:719:C:O2    | 2.37                     | 0.56              |
| 33:DA:719:C:H6     | 33:DA:720:C:C6    | 2.23                     | 0.56              |
| 33:DA:853:C:N3     | 33:DA:854:U:C5    | 2.72                     | 0.56              |
| 33:DA:936:C:H42    | 33:DA:1379:G:H1   | 1.53                     | 0.56              |
| 33:DA:984:C:C4     | 33:DA:985:C:N4    | 2.72                     | 0.56              |
| 33:DA:1084:G:C6    | 33:DA:1085:U:C4   | 2.93                     | 0.56              |
| 33:DA:1499:A:H8    | 33:DA:1499:A:O5'  | 1.89                     | 0.56              |
| 35:DC:174:LEU:CD1  | 35:DC:200:TRP:HE1 | 2.18                     | 0.56              |
| 36:DD:12:ARG:HG2   | 36:DD:33:ILE:HA   | 1.86                     | 0.56              |
| 36:DD:173:ASP:O    | 36:DD:173:ASP:CG  | 2.42                     | 0.56              |
| 42:DJ:18:ILE:O     | 42:DJ:22:THR:HB   | 2.05                     | 0.56              |
| 43:DK:55:ARG:HD3   | 43:DK:58:THR:HG21 | 1.87                     | 0.56              |
| 45:DM:107:THR:HG23 | 45:DM:108:ARG:N   | 2.20                     | 0.56              |
| 4:A3:7:ARG:NH1     | 8:AB:250:G:P      | 2.79                     | 0.56              |
| 8:AB:30:G:H2'      | 8:AB:31:C:O4'     | 2.04                     | 0.56              |
| 8:AB:381:G:C6      | 8:AB:382:A:N7     | 2.73                     | 0.56              |
| 8:AB:387:U:C5      | 8:AB:388:G:C6     | 2.93                     | 0.56              |
| 8:AB:458:G:H22     | 8:AB:469:G:C2'    | 2.14                     | 0.56              |
| 8:AB:649:G:H2'     | 8:AB:650:C:H6     | 1.68                     | 0.56              |
| 8:AB:986:C:C6      | 8:AB:986:C:H5'    | 2.41                     | 0.56              |
| 8:AB:1003:G:N3     | 8:AB:1010:A:H2    | 2.02                     | 0.56              |
| 8:AB:1011:G:C6     | 8:AB:1151:A:C6    | 2.93                     | 0.56              |
| 8:AB:1111:A:H4'    | 8:AB:1112:G:OP1   | 2.04                     | 0.56              |
| 8:AB:1268:A:C6     | 8:AB:1269:A:N3    | 2.74                     | 0.56              |
| 8:AB:1561:C:H2'    | 8:AB:1562:U:C6    | 2.40                     | 0.56              |
| 8:AB:2052:A:H5''   | 10:AD:149:ASN:HB2 | 1.87                     | 0.56              |
| 8:AB:2074:U:H2'    | 8:AB:2075:U:C5    | 2.39                     | 0.56              |
| 8:AB:2141:G:N2     | 8:AB:2151:U:H1'   | 2.20                     | 0.56              |
| 8:AB:2277:G:C6     | 8:AB:2278:A:N7    | 2.72                     | 0.56              |
| 8:AB:2386:A:C2     | 8:AB:2387:U:C2    | 2.93                     | 0.56              |
| 8:AB:2722:G:H4'    | 20:AN:4:ARG:HB3   | 1.88                     | 0.56              |
| 9:AC:21:PRO:HD2    | 9:AC:202:ARG:NH1  | 2.20                     | 0.56              |
| 9:AC:70:LYS:HD3    | 9:AC:73:ILE:HG21  | 1.87                     | 0.56              |
| 10:AD:1:MET:H2     | 10:AD:81:GLU:CD   | 2.07                     | 0.56              |
| 10:AD:32:ASN:O     | 10:AD:34:VAL:N    | 2.37                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:AD:131:ASP:OD2 | 10:AD:134:HIS:ND1 | 2.39                     | 0.56              |
| 14:AH:60:GLU:OE2  | 14:AH:61:VAL:HG23 | 2.05                     | 0.56              |
| 15:AI:11:GLN:HG3  | 15:AI:11:GLN:O    | 2.05                     | 0.56              |
| 15:AI:60:VAL:HG12 | 15:AI:61:TYR:N    | 2.19                     | 0.56              |
| 16:AJ:99:ARG:HA   | 16:AJ:103:ILE:CG1 | 2.34                     | 0.56              |
| 19:AM:32:GLY:HA2  | 19:AM:102:LEU:H   | 1.69                     | 0.56              |
| 22:AP:4:ILE:HA    | 22:AP:7:LEU:HB2   | 1.86                     | 0.56              |
| 22:AP:25:VAL:CG1  | 22:AP:87:ARG:HA   | 2.35                     | 0.56              |
| 24:AR:40:MET:HA   | 24:AR:54:VAL:CG1  | 2.34                     | 0.56              |
| 33:BA:32:A:H2'    | 33:BA:32:A:N3     | 2.19                     | 0.56              |
| 33:BA:232:G:H8    | 33:BA:232:G:H5''  | 1.70                     | 0.56              |
| 33:BA:293:G:C4    | 33:BA:294:U:C6    | 2.93                     | 0.56              |
| 33:BA:303:A:C6    | 33:BA:304:U:C5    | 2.92                     | 0.56              |
| 33:BA:409:U:N3    | 33:BA:410:G:C5    | 2.73                     | 0.56              |
| 33:BA:564:C:C4    | 33:BA:565:U:C4    | 2.92                     | 0.56              |
| 33:BA:564:C:N4    | 33:BA:565:U:O4    | 2.37                     | 0.56              |
| 33:BA:719:C:H2'   | 50:BR:38:ILE:CG2  | 2.35                     | 0.56              |
| 33:BA:954:G:O6    | 33:BA:1226:C:N3   | 2.38                     | 0.56              |
| 33:BA:1044:A:H2'  | 33:BA:1045:C:H5'  | 1.86                     | 0.56              |
| 33:BA:1064:G:OP1  | 33:BA:1066:C:H1'  | 2.05                     | 0.56              |
| 33:BA:1368:A:C2   | 33:BA:1369:C:C2   | 2.93                     | 0.56              |
| 33:BA:1462:C:C4   | 33:BA:1463:U:C4   | 2.93                     | 0.56              |
| 34:BB:25:LYS:HD3  | 34:BB:193:ASP:OD2 | 2.06                     | 0.56              |
| 34:BB:152:ASP:OD1 | 34:BB:152:ASP:N   | 2.33                     | 0.56              |
| 44:BL:26:CYS:SG   | 44:BL:29:LYS:HE2  | 2.45                     | 0.56              |
| 47:BO:27:GLN:O    | 47:BO:31:LEU:HD13 | 2.05                     | 0.56              |
| 52:BT:66:ILE:HD12 | 52:BT:66:ILE:N    | 2.19                     | 0.56              |
| 7:CA:72:G:H1'     | 7:CA:105:G:N2     | 2.19                     | 0.56              |
| 8:CB:186:G:N2     | 8:CB:211:C:C2     | 2.72                     | 0.56              |
| 8:CB:238:C:O2     | 8:CB:238:C:H2'    | 2.04                     | 0.56              |
| 8:CB:396:G:O2'    | 8:CB:397:U:H5'    | 2.05                     | 0.56              |
| 8:CB:448:U:H3'    | 8:CB:449:A:H5'    | 1.86                     | 0.56              |
| 8:CB:471:A:N6     | 8:CB:472:A:C2     | 2.73                     | 0.56              |
| 8:CB:485:C:O2'    | 8:CB:486:C:H5'    | 2.05                     | 0.56              |
| 8:CB:792:A:N7     | 8:CB:2440:C:C6    | 2.73                     | 0.56              |
| 8:CB:821:A:H2     | 55:CB:5166:HOH:O  | 1.87                     | 0.56              |
| 8:CB:873:C:C2'    | 8:CB:874:G:H8     | 2.15                     | 0.56              |
| 8:CB:1150:C:N3    | 8:CB:1151:A:N7    | 2.53                     | 0.56              |
| 8:CB:1264:A:N6    | 8:CB:1265:A:C6    | 2.73                     | 0.56              |
| 8:CB:1286:A:C2    | 8:CB:1329:U:C5    | 2.93                     | 0.56              |
| 8:CB:1309:G:H1'   | 8:CB:1611:C:O2'   | 2.05                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1323:C:OP1   | 25:CS:84:ARG:NH1   | 2.37                     | 0.56              |
| 8:CB:1991:U:H2'   | 8:CB:1992:G:H5'    | 1.87                     | 0.56              |
| 8:CB:2210:U:H4'   | 8:CB:2211:A:C5'    | 2.35                     | 0.56              |
| 8:CB:2361:G:H2'   | 8:CB:2362:C:H5'    | 1.87                     | 0.56              |
| 10:CD:37:VAL:HG13 | 10:CD:38:LYS:N     | 2.19                     | 0.56              |
| 11:CE:143:LEU:C   | 11:CE:144:GLU:HG3  | 2.25                     | 0.56              |
| 17:CK:75:SER:HA   | 22:CP:76:HIS:HE2   | 1.71                     | 0.56              |
| 18:CL:110:VAL:O   | 18:CL:111:ILE:HG23 | 2.05                     | 0.56              |
| 19:CM:64:TRP:HD1  | 19:CM:64:TRP:H     | 1.52                     | 0.56              |
| 19:CM:99:GLY:C    | 19:CM:100:LYS:HG3  | 2.24                     | 0.56              |
| 22:CP:56:SER:HA   | 22:CP:58:PHE:CD2   | 2.40                     | 0.56              |
| 29:CW:15:SER:O    | 29:CW:16:GLU:HG2   | 2.05                     | 0.56              |
| 33:DA:81:A:H2     | 33:DA:89:U:C2      | 2.23                     | 0.56              |
| 33:DA:125:U:O2'   | 33:DA:126:G:H5'    | 2.05                     | 0.56              |
| 33:DA:398:U:O5'   | 33:DA:398:U:H6     | 1.89                     | 0.56              |
| 33:DA:596:A:C6    | 33:DA:645:G:C2     | 2.93                     | 0.56              |
| 33:DA:678:U:H3    | 33:DA:713:G:N2     | 2.03                     | 0.56              |
| 33:DA:926:G:H3'   | 33:DA:1505:G:H21   | 1.70                     | 0.56              |
| 33:DA:1356:G:H2'  | 33:DA:1357:A:O4'   | 2.04                     | 0.56              |
| 33:DA:1399:C:C4   | 33:DA:1502:A:H2    | 2.21                     | 0.56              |
| 33:DA:1466:C:C2   | 33:DA:1467:C:C5    | 2.93                     | 0.56              |
| 36:DD:185:PRO:HB2 | 36:DD:190:LEU:CG   | 2.35                     | 0.56              |
| 40:DH:74:ILE:HB   | 40:DH:128:VAL:HG12 | 1.86                     | 0.56              |
| 41:DI:9:GLY:HA2   | 41:DI:80:HIS:NE2   | 2.19                     | 0.56              |
| 41:DI:87:MET:HB2  | 41:DI:94:ARG:NH2   | 2.21                     | 0.56              |
| 2:A1:35:LEU:CD2   | 2:A1:54:LYS:HB2    | 2.35                     | 0.56              |
| 3:A2:13:ASN:O     | 3:A2:16:HIS:O      | 2.24                     | 0.56              |
| 3:A2:35:ARG:HH12  | 3:A2:42:LEU:HB3    | 1.69                     | 0.56              |
| 4:A3:24:LYS:HB2   | 18:AL:64:PHE:CD1   | 2.38                     | 0.56              |
| 7:AA:2:G:C6       | 7:AA:118:C:N4      | 2.73                     | 0.56              |
| 7:AA:34:A:O2'     | 7:AA:35:C:H5'      | 2.05                     | 0.56              |
| 7:AA:101:A:C8     | 7:AA:102:G:N7      | 2.73                     | 0.56              |
| 7:AA:106:G:H3'    | 7:AA:107:G:C8      | 2.40                     | 0.56              |
| 8:AB:123:G:O6     | 8:AB:124:G:C6      | 2.58                     | 0.56              |
| 8:AB:147:C:H5''   | 8:AB:147:C:C6      | 2.41                     | 0.56              |
| 8:AB:156:A:C5     | 8:AB:157:C:C5      | 2.93                     | 0.56              |
| 8:AB:204:A:O5'    | 8:AB:204:A:H2'     | 2.05                     | 0.56              |
| 8:AB:277:G:H4'    | 8:AB:278:A:N7      | 2.21                     | 0.56              |
| 8:AB:372:G:N7     | 32:AZ:53:THR:HG23  | 2.20                     | 0.56              |
| 8:AB:381:G:N2     | 8:AB:394:C:C6      | 2.73                     | 0.56              |
| 8:AB:677:A:O2'    | 8:AB:2071:A:H5'    | 2.06                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:692:C:H5'    | 9:AC:42:ARG:HB2    | 1.85                     | 0.56              |
| 8:AB:696:G:C6     | 8:AB:767:U:O2      | 2.58                     | 0.56              |
| 8:AB:748:G:N3     | 8:AB:750:A:N6      | 2.53                     | 0.56              |
| 8:AB:857:G:H2'    | 8:AB:858:G:O4'     | 2.05                     | 0.56              |
| 8:AB:864:G:H8     | 8:AB:864:G:O5'     | 1.87                     | 0.56              |
| 8:AB:972:A:OP2    | 8:AB:974:G:H5''    | 2.05                     | 0.56              |
| 8:AB:999:U:O2     | 8:AB:1157:G:C2     | 2.59                     | 0.56              |
| 8:AB:1000:A:C6    | 8:AB:1001:A:C5     | 2.93                     | 0.56              |
| 8:AB:1026:G:C4    | 8:AB:1134:A:C6     | 2.93                     | 0.56              |
| 8:AB:1122:G:C6    | 8:AB:1123:C:C5     | 2.94                     | 0.56              |
| 8:AB:1203:U:H3    | 8:AB:1243:C:H42    | 1.54                     | 0.56              |
| 8:AB:1378:A:O2'   | 8:AB:1379:U:OP2    | 2.19                     | 0.56              |
| 8:AB:1615:C:C2    | 8:AB:1617:C:C6     | 2.93                     | 0.56              |
| 8:AB:1773:A:C2    | 8:AB:1774:C:H1'    | 2.40                     | 0.56              |
| 8:AB:1792:G:P     | 9:AC:203:VAL:HG23  | 2.46                     | 0.56              |
| 8:AB:1820:U:O2'   | 9:AC:157:ALA:HB3   | 2.06                     | 0.56              |
| 8:AB:2056:G:C2    | 8:AB:2577:A:N3     | 2.73                     | 0.56              |
| 8:AB:2181:U:H2'   | 8:AB:2181:U:O2     | 2.05                     | 0.56              |
| 8:AB:2262:U:O4    | 8:AB:2279:G:N1     | 2.38                     | 0.56              |
| 8:AB:2286:G:C4    | 8:AB:2346:A:N6     | 2.73                     | 0.56              |
| 8:AB:2294:G:C2    | 8:AB:2295:C:C6     | 2.93                     | 0.56              |
| 8:AB:2543:G:N1    | 8:AB:2765:A:C5     | 2.74                     | 0.56              |
| 8:AB:2575:C:C4'   | 10:AD:149:ASN:HB3  | 2.25                     | 0.56              |
| 8:AB:2676:C:H3'   | 8:AB:2676:C:C6     | 2.41                     | 0.56              |
| 8:AB:2697:G:C8    | 8:AB:2698:U:C5     | 2.93                     | 0.56              |
| 8:AB:2722:G:C5    | 8:AB:2723:C:C5     | 2.93                     | 0.56              |
| 8:AB:2882:A:OP1   | 20:AN:96:ARG:HD3   | 2.05                     | 0.56              |
| 9:AC:220:ARG:NH1  | 9:AC:220:ARG:CG    | 2.66                     | 0.56              |
| 9:AC:257:ARG:C    | 9:AC:261:ARG:NH1   | 2.54                     | 0.56              |
| 10:AD:36:GLN:C    | 10:AD:36:GLN:NE2   | 2.59                     | 0.56              |
| 10:AD:129:THR:O   | 10:AD:130:GLN:HB2  | 2.04                     | 0.56              |
| 11:AE:3:LEU:CB    | 11:AE:12:LEU:HB3   | 2.24                     | 0.56              |
| 11:AE:46:GLN:HE21 | 11:AE:47:LYS:N     | 2.04                     | 0.56              |
| 16:AJ:59:ALA:O    | 16:AJ:61:LYS:N     | 2.36                     | 0.56              |
| 18:AL:110:VAL:CB  | 18:AL:126:ARG:HH12 | 2.18                     | 0.56              |
| 20:AN:83:LEU:HD11 | 20:AN:115:LEU:HD12 | 1.86                     | 0.56              |
| 21:AO:22:GLY:HA2  | 21:AO:42:PRO:HB3   | 1.88                     | 0.56              |
| 24:AR:18:GLN:HA   | 24:AR:99:THR:HA    | 1.87                     | 0.56              |
| 25:AS:83:LYS:HB2  | 25:AS:83:LYS:HZ2   | 1.67                     | 0.56              |
| 25:AS:92:ARG:HG3  | 25:AS:93:ALA:N     | 2.19                     | 0.56              |
| 26:AT:67:VAL:HG12 | 26:AT:68:LYS:N     | 2.17                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:AV:56:PHE:CD2  | 28:AV:56:PHE:C     | 2.78                     | 0.56              |
| 28:AV:63:ILE:N    | 28:AV:70:ILE:CD1   | 2.66                     | 0.56              |
| 29:AW:36:ILE:HG23 | 29:AW:68:PHE:CD1   | 2.37                     | 0.56              |
| 29:AW:44:PHE:H    | 29:AW:76:ARG:HD3   | 1.70                     | 0.56              |
| 33:BA:53:A:C2     | 33:BA:359:G:C2     | 2.93                     | 0.56              |
| 33:BA:54:C:O2'    | 33:BA:55:A:H5''    | 2.06                     | 0.56              |
| 33:BA:56:U:H2'    | 33:BA:57:G:C8      | 2.41                     | 0.56              |
| 33:BA:197:A:N1    | 33:BA:221:C:H5'    | 2.20                     | 0.56              |
| 33:BA:513:C:N3    | 33:BA:539:A:H2     | 2.02                     | 0.56              |
| 33:BA:514:C:N3    | 33:BA:538:G:C6     | 2.73                     | 0.56              |
| 33:BA:527:G:N1    | 33:BA:528:C:C5     | 2.73                     | 0.56              |
| 33:BA:665:A:N6    | 33:BA:733:G:C6     | 2.73                     | 0.56              |
| 33:BA:754:C:O4'   | 47:BO:68:TYR:CD1   | 2.58                     | 0.56              |
| 33:BA:769:G:H2'   | 33:BA:770:C:H5'    | 1.86                     | 0.56              |
| 33:BA:795:C:H4'   | 33:BA:1506:U:H3    | 1.69                     | 0.56              |
| 33:BA:812:G:OP2   | 33:BA:902:G:N2     | 2.37                     | 0.56              |
| 33:BA:919:A:H2'   | 33:BA:920:U:C6     | 2.40                     | 0.56              |
| 33:BA:922:G:H2'   | 33:BA:923:A:H8     | 1.67                     | 0.56              |
| 33:BA:922:G:C6    | 33:BA:923:A:C6     | 2.93                     | 0.56              |
| 33:BA:960:U:H5    | 51:BS:77:ARG:HD2   | 1.69                     | 0.56              |
| 33:BA:972:C:O2    | 33:BA:972:C:H2'    | 2.05                     | 0.56              |
| 33:BA:977:A:C8    | 33:BA:977:A:C3'    | 2.88                     | 0.56              |
| 33:BA:999:C:N3    | 33:BA:1042:A:N1    | 2.53                     | 0.56              |
| 33:BA:1084:G:C8   | 33:BA:1085:U:C6    | 2.93                     | 0.56              |
| 33:BA:1095:U:H2'  | 33:BA:1096:C:O4'   | 2.06                     | 0.56              |
| 33:BA:1218:C:H2'  | 33:BA:1219:A:C8    | 2.40                     | 0.56              |
| 33:BA:1220:G:C6   | 33:BA:1221:G:N7    | 2.73                     | 0.56              |
| 33:BA:1280:A:O4'  | 42:BJ:43:PRO:HG3   | 2.06                     | 0.56              |
| 33:BA:1308:U:H3   | 33:BA:1330:U:H1'   | 1.69                     | 0.56              |
| 33:BA:1365:G:N1   | 33:BA:1366:C:C2    | 2.73                     | 0.56              |
| 33:BA:1368:A:H4'  | 46:BN:100:TRP:HZ2  | 1.71                     | 0.56              |
| 33:BA:1526:G:H2'  | 33:BA:1527:U:C5'   | 2.34                     | 0.56              |
| 34:BB:34:ARG:HD2  | 34:BB:35:ASN:CB    | 2.36                     | 0.56              |
| 34:BB:61:SER:HA   | 34:BB:224:ARG:HA   | 1.88                     | 0.56              |
| 34:BB:77:GLU:HG3  | 34:BB:78:ALA:N     | 2.19                     | 0.56              |
| 35:BC:122:GLN:O   | 35:BC:127:VAL:HG22 | 2.05                     | 0.56              |
| 36:BD:201:GLU:CD  | 37:BE:104:ILE:H    | 2.08                     | 0.56              |
| 37:BE:22:LYS:HB3  | 37:BE:29:ILE:HD11  | 1.87                     | 0.56              |
| 37:BE:155:LYS:HG2 | 37:BE:155:LYS:O    | 2.05                     | 0.56              |
| 38:BF:66:ALA:HB1  | 38:BF:67:PRO:HD2   | 1.86                     | 0.56              |
| 38:BF:71:ILE:HD11 | 38:BF:89:VAL:HG21  | 1.88                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 39:BG:12:LEU:HD13 | 39:BG:13:PRO:CD   | 2.33                     | 0.56              |
| 40:BH:9:MET:HA    | 40:BH:26:MET:HE3  | 1.85                     | 0.56              |
| 40:BH:10:LEU:HD11 | 40:BH:76:ARG:CG   | 2.36                     | 0.56              |
| 41:BI:93:LEU:O    | 41:BI:97:LEU:HD23 | 2.05                     | 0.56              |
| 47:BO:38:LEU:O    | 47:BO:41:HIS:HB3  | 2.05                     | 0.56              |
| 47:BO:87:ARG:NE   | 47:BO:87:ARG:HA   | 2.16                     | 0.56              |
| 49:BQ:30:HIS:CE1  | 49:BQ:32:ILE:HG22 | 2.37                     | 0.56              |
| 52:BT:20:ASN:HB3  | 52:BT:65:LEU:HD11 | 1.86                     | 0.56              |
| 3:C2:10:LEU:HB3   | 8:CB:125:A:N1     | 2.18                     | 0.56              |
| 7:CA:18:G:N2      | 7:CA:19:C:H1'     | 2.19                     | 0.56              |
| 7:CA:45:A:H2'     | 7:CA:46:A:H5'     | 1.87                     | 0.56              |
| 8:CB:68:G:H2'     | 8:CB:69:C:O4'     | 2.06                     | 0.56              |
| 8:CB:85:G:H1      | 8:CB:97:C:H42     | 1.53                     | 0.56              |
| 8:CB:140:C:H4'    | 8:CB:141:G:C2     | 2.40                     | 0.56              |
| 8:CB:142:A:H2'    | 8:CB:143:C:C4     | 2.40                     | 0.56              |
| 8:CB:370:G:P      | 8:CB:370:G:C8     | 2.96                     | 0.56              |
| 8:CB:398:C:H5''   | 32:CZ:49:ARG:NH1  | 2.20                     | 0.56              |
| 8:CB:440:C:C6     | 8:CB:440:C:C3'    | 2.88                     | 0.56              |
| 8:CB:443:A:N7     | 11:CE:40:ARG:HG3  | 2.20                     | 0.56              |
| 8:CB:571:U:C4     | 8:CB:575:A:C5     | 2.93                     | 0.56              |
| 8:CB:812:C:N3     | 8:CB:813:U:C5     | 2.72                     | 0.56              |
| 8:CB:910:A:H2     | 8:CB:911:A:N1     | 2.01                     | 0.56              |
| 8:CB:988:A:O5'    | 8:CB:988:A:C8     | 2.58                     | 0.56              |
| 8:CB:1049:C:O2    | 8:CB:1113:U:H4'   | 2.05                     | 0.56              |
| 8:CB:1056:G:H4'   | 8:CB:1086:A:C8    | 2.41                     | 0.56              |
| 8:CB:1136:G:H8    | 8:CB:1136:G:C5'   | 2.18                     | 0.56              |
| 8:CB:1255:U:O4    | 8:CB:2060:A:H5'   | 2.05                     | 0.56              |
| 8:CB:1258:U:C2'   | 8:CB:1259:G:C8    | 2.83                     | 0.56              |
| 8:CB:1268:A:C6    | 8:CB:1269:A:N3    | 2.73                     | 0.56              |
| 8:CB:1285:A:H3'   | 8:CB:1285:A:C8    | 2.40                     | 0.56              |
| 8:CB:1421:G:C2    | 8:CB:1422:G:N7    | 2.74                     | 0.56              |
| 8:CB:1806:C:C6    | 8:CB:1806:C:C3'   | 2.89                     | 0.56              |
| 8:CB:1895:C:O5'   | 8:CB:1895:C:H6    | 1.88                     | 0.56              |
| 8:CB:2093:G:C8    | 8:CB:2093:G:H3'   | 2.41                     | 0.56              |
| 8:CB:2150:C:H2'   | 8:CB:2151:U:H6    | 1.70                     | 0.56              |
| 8:CB:2345:G:N3    | 8:CB:2381:A:C4    | 2.73                     | 0.56              |
| 8:CB:2444:G:OP1   | 11:CE:63:LYS:NZ   | 2.38                     | 0.56              |
| 8:CB:2518:A:O5'   | 55:CB:5444:HOH:O  | 2.18                     | 0.56              |
| 8:CB:2567:G:H2'   | 8:CB:2568:U:H6    | 1.70                     | 0.56              |
| 8:CB:2605:U:O2    | 8:CB:2606:C:C5    | 2.58                     | 0.56              |
| 8:CB:2643:G:H2'   | 8:CB:2644:G:H5'   | 1.87                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2673:G:C2'    | 8:CB:2674:G:H5'    | 2.35                     | 0.56              |
| 8:CB:2715:C:H2'    | 8:CB:2716:C:H5'    | 1.88                     | 0.56              |
| 8:CB:2748:A:OP1    | 8:CB:2752:C:OP1    | 2.24                     | 0.56              |
| 9:CC:125:PRO:O     | 9:CC:192:GLY:CA    | 2.54                     | 0.56              |
| 9:CC:128:THR:HG23  | 9:CC:189:ALA:O     | 2.05                     | 0.56              |
| 9:CC:220:ARG:O     | 9:CC:221:GLY:O     | 2.23                     | 0.56              |
| 10:CD:33:ARG:HH21  | 10:CD:87:GLY:HA3   | 1.67                     | 0.56              |
| 10:CD:97:SER:HG    | 10:CD:185:ASN:HA   | 1.70                     | 0.56              |
| 10:CD:138:LEU:CD1  | 10:CD:142:VAL:HG11 | 2.35                     | 0.56              |
| 11:CE:126:VAL:HG13 | 11:CE:128:ALA:N    | 2.20                     | 0.56              |
| 13:CG:161:VAL:O    | 13:CG:161:VAL:HG13 | 2.04                     | 0.56              |
| 14:CH:6:LEU:HB2    | 14:CH:35:LYS:CB    | 2.34                     | 0.56              |
| 15:CI:54:ILE:HG23  | 15:CI:70:THR:OG1   | 2.05                     | 0.56              |
| 15:CI:60:VAL:HG22  | 15:CI:66:PHE:HB3   | 1.86                     | 0.56              |
| 15:CI:124:MET:HA   | 15:CI:127:SER:OG   | 2.05                     | 0.56              |
| 16:CJ:3:THR:O      | 16:CJ:4:PHE:CD2    | 2.58                     | 0.56              |
| 16:CJ:73:VAL:HG22  | 16:CJ:74:TYR:N     | 2.20                     | 0.56              |
| 17:CK:2:ILE:HG22   | 17:CK:32:TYR:CB    | 2.35                     | 0.56              |
| 18:CL:33:ARG:CD    | 24:CR:85:LYS:NZ    | 2.66                     | 0.56              |
| 19:CM:16:ARG:HB3   | 19:CM:18:ARG:NH2   | 2.20                     | 0.56              |
| 21:CO:2:ASP:HB2    | 21:CO:4:LYS:HZ3    | 1.68                     | 0.56              |
| 22:CP:47:ILE:HA    | 22:CP:63:ILE:CG2   | 2.35                     | 0.56              |
| 22:CP:92:ARG:NE    | 22:CP:110:LYS:HB3  | 2.20                     | 0.56              |
| 24:CR:5:PHE:CE1    | 24:CR:37:GLU:HB2   | 2.41                     | 0.56              |
| 25:CS:53:SER:O     | 25:CS:55:ILE:N     | 2.39                     | 0.56              |
| 25:CS:95:ARG:HH11  | 25:CS:95:ARG:CG    | 2.16                     | 0.56              |
| 27:CU:85:ARG:O     | 27:CU:87:GLU:HG3   | 2.06                     | 0.56              |
| 32:CZ:32:LEU:O     | 32:CZ:33:ASN:OD1   | 2.22                     | 0.56              |
| 33:DA:45:G:H5''    | 33:DA:307:C:O2'    | 2.06                     | 0.56              |
| 33:DA:109:A:N6     | 33:DA:326:G:C6     | 2.73                     | 0.56              |
| 33:DA:434:U:H5''   | 33:DA:435:A:OP1    | 2.04                     | 0.56              |
| 33:DA:562:U:C4     | 33:DA:884:U:H5     | 2.22                     | 0.56              |
| 33:DA:607:A:N6     | 33:DA:608:A:C6     | 2.74                     | 0.56              |
| 33:DA:612:C:C2     | 33:DA:629:A:C2     | 2.92                     | 0.56              |
| 33:DA:639:G:C4     | 33:DA:640:A:C8     | 2.93                     | 0.56              |
| 33:DA:669:G:C4     | 33:DA:670:G:C8     | 2.93                     | 0.56              |
| 33:DA:708:C:C2'    | 33:DA:709:U:H5'    | 2.36                     | 0.56              |
| 33:DA:765:G:N9     | 33:DA:812:G:C2     | 2.73                     | 0.56              |
| 33:DA:768:A:C2'    | 33:DA:769:G:H5'    | 2.36                     | 0.56              |
| 33:DA:805:C:C2     | 33:DA:806:C:C5     | 2.93                     | 0.56              |
| 33:DA:964:A:H2'    | 33:DA:964:A:N3     | 2.20                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:1005:A:C5   | 33:DA:1006:G:H1'   | 2.41                     | 0.56              |
| 33:DA:1097:C:H2'  | 33:DA:1098:C:O4'   | 2.04                     | 0.56              |
| 33:DA:1103:C:H5'' | 34:DB:96:LEU:HD13  | 1.87                     | 0.56              |
| 33:DA:1349:A:H1'  | 33:DA:1374:A:N6    | 2.20                     | 0.56              |
| 33:DA:1376:U:O4   | 39:DG:9:ARG:HD2    | 2.06                     | 0.56              |
| 33:DA:1430:A:C6   | 33:DA:1471:U:O4    | 2.58                     | 0.56              |
| 33:DA:1432:G:H1'  | 33:DA:1468:A:H62   | 1.70                     | 0.56              |
| 34:DB:45:THR:HG23 | 34:DB:200:PRO:HG2  | 1.87                     | 0.56              |
| 35:DC:21:TRP:O    | 35:DC:22:PHE:HB2   | 2.04                     | 0.56              |
| 36:DD:142:VAL:O   | 36:DD:143:SER:CB   | 2.52                     | 0.56              |
| 37:DE:24:VAL:CG2  | 37:DE:25:LYS:H     | 2.13                     | 0.56              |
| 37:DE:37:VAL:HG21 | 37:DE:113:VAL:HG12 | 1.85                     | 0.56              |
| 38:DF:40:GLU:O    | 38:DF:41:ASP:HB2   | 2.05                     | 0.56              |
| 39:DG:15:PRO:HD3  | 39:DG:23:ALA:HB2   | 1.87                     | 0.56              |
| 41:DI:88:GLU:CD   | 41:DI:89:TYR:N     | 2.59                     | 0.56              |
| 43:DK:92:ARG:HH11 | 43:DK:92:ARG:CG    | 1.93                     | 0.56              |
| 48:DP:30:GLY:O    | 48:DP:32:PHE:CE2   | 2.59                     | 0.56              |
| 48:DP:43:ALA:HA   | 48:DP:46:LYS:HZ2   | 1.71                     | 0.56              |
| 2:A1:31:GLU:O     | 2:A1:32:LYS:HB2    | 2.05                     | 0.56              |
| 4:A3:23:HIS:NE2   | 4:A3:47:ALA:CB     | 2.68                     | 0.56              |
| 5:A4:7:VAL:H      | 5:A4:23:ILE:HD13   | 1.69                     | 0.56              |
| 8:AB:35:G:C2      | 8:AB:36:G:H1'      | 2.41                     | 0.56              |
| 8:AB:252:G:O2'    | 8:AB:253:C:H5'     | 2.05                     | 0.56              |
| 8:AB:456:C:C2     | 26:AT:70:HIS:CE1   | 2.93                     | 0.56              |
| 8:AB:464:U:C1'    | 8:AB:686:U:H5      | 2.18                     | 0.56              |
| 8:AB:687:C:N4     | 8:AB:688:U:N3      | 2.53                     | 0.56              |
| 8:AB:687:C:H2'    | 8:AB:688:U:O4'     | 2.05                     | 0.56              |
| 8:AB:1022:G:C5    | 8:AB:1140:C:N4     | 2.73                     | 0.56              |
| 8:AB:1195:G:C8    | 8:AB:1195:G:H5''   | 2.40                     | 0.56              |
| 8:AB:1884:G:OP2   | 8:AB:1884:G:C8     | 2.47                     | 0.56              |
| 8:AB:2261:C:N3    | 8:AB:2280:G:C2     | 2.74                     | 0.56              |
| 8:AB:2300:C:C2'   | 8:AB:2301:C:H5'    | 2.36                     | 0.56              |
| 8:AB:2489:U:C4    | 8:AB:2490:G:C6     | 2.93                     | 0.56              |
| 9:AC:190:THR:O    | 9:AC:191:LEU:HB3   | 2.04                     | 0.56              |
| 12:AF:84:ILE:O    | 12:AF:84:ILE:HG13  | 2.05                     | 0.56              |
| 12:AF:137:PHE:O   | 12:AF:139:GLU:N    | 2.39                     | 0.56              |
| 13:AG:32:LEU:HD21 | 13:AG:74:MET:HB3   | 1.86                     | 0.56              |
| 14:AH:26:ALA:C    | 14:AH:28:ASN:H     | 2.08                     | 0.56              |
| 19:AM:18:ARG:CG   | 19:AM:19:GLY:N     | 2.68                     | 0.56              |
| 20:AN:10:LEU:O    | 20:AN:11:ASN:C     | 2.44                     | 0.56              |
| 20:AN:70:THR:C    | 20:AN:72:ASP:N     | 2.59                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AO:12:THR:C     | 21:AO:14:ALA:N     | 2.57                     | 0.56              |
| 22:AP:27:VAL:CG1   | 22:AP:47:ILE:HD12  | 2.35                     | 0.56              |
| 23:AQ:90:ASP:CG    | 23:AQ:91:ARG:H     | 2.09                     | 0.56              |
| 26:AT:66:LYS:NZ    | 26:AT:67:VAL:O     | 2.34                     | 0.56              |
| 29:AW:28:GLU:H     | 29:AW:61:LYS:HB2   | 1.69                     | 0.56              |
| 29:AW:28:GLU:N     | 29:AW:61:LYS:HB2   | 2.20                     | 0.56              |
| 32:AZ:8:LYS:HG3    | 32:AZ:9:TYR:N      | 2.21                     | 0.56              |
| 33:BA:293:G:O2'    | 33:BA:294:U:H5'    | 2.06                     | 0.56              |
| 33:BA:557:G:C3'    | 33:BA:558:G:C8     | 2.88                     | 0.56              |
| 33:BA:577:G:N3     | 33:BA:578:C:H6     | 2.03                     | 0.56              |
| 33:BA:624:C:C2     | 33:BA:625:U:C5     | 2.93                     | 0.56              |
| 33:BA:865:A:H8     | 33:BA:865:A:O5'    | 1.89                     | 0.56              |
| 33:BA:865:A:N3     | 33:BA:918:A:O2'    | 2.27                     | 0.56              |
| 33:BA:1211:U:H4'   | 33:BA:1213:A:N3    | 2.20                     | 0.56              |
| 33:BA:1388:C:H2'   | 33:BA:1389:C:O4'   | 2.06                     | 0.56              |
| 34:BB:160:LEU:O    | 34:BB:160:LEU:HD23 | 2.05                     | 0.56              |
| 34:BB:186:VAL:HB   | 34:BB:190:SER:CB   | 2.34                     | 0.56              |
| 37:BE:51:LYS:O     | 37:BE:52:ALA:HB2   | 2.05                     | 0.56              |
| 41:BI:82:ILE:HG22  | 41:BI:86:LEU:CD2   | 2.35                     | 0.56              |
| 50:BR:33:THR:HG23  | 50:BR:35:SER:N     | 2.18                     | 0.56              |
| 7:CA:57:A:C2       | 12:CF:25:MET:HG2   | 2.41                     | 0.56              |
| 7:CA:80:U:O2'      | 7:CA:81:G:H5'      | 2.06                     | 0.56              |
| 8:CB:131:A:C6      | 8:CB:132:G:C6      | 2.93                     | 0.56              |
| 8:CB:252:G:C2      | 8:CB:253:C:C6      | 2.94                     | 0.56              |
| 8:CB:305:C:C2'     | 8:CB:306:U:H5'     | 2.36                     | 0.56              |
| 8:CB:792:A:N7      | 8:CB:2440:C:C2     | 2.73                     | 0.56              |
| 8:CB:878:A:N3      | 8:CB:878:A:H2'     | 2.18                     | 0.56              |
| 8:CB:998:C:OP2     | 23:CQ:57:ARG:NH2   | 2.38                     | 0.56              |
| 8:CB:1218:G:C2     | 8:CB:1232:G:C5     | 2.94                     | 0.56              |
| 8:CB:1255:U:H6     | 8:CB:2502:G:H21    | 1.49                     | 0.56              |
| 8:CB:1260:A:N6     | 55:CB:5225:HOH:O   | 2.38                     | 0.56              |
| 8:CB:1394:U:N3     | 8:CB:1395:A:C6     | 2.74                     | 0.56              |
| 8:CB:1801:A:OP2    | 9:CC:149:LYS:NZ    | 2.33                     | 0.56              |
| 8:CB:1960:A:HO2'   | 33:DA:1484:C:HO2'  | 1.53                     | 0.56              |
| 8:CB:2147:A:O3'    | 8:CB:2148:G:C8     | 2.58                     | 0.56              |
| 8:CB:2498:C:C2'    | 8:CB:2499:C:H5'    | 2.35                     | 0.56              |
| 8:CB:2543:G:C6     | 8:CB:2765:A:C6     | 2.94                     | 0.56              |
| 11:CE:120:VAL:HG23 | 11:CE:189:THR:OG1  | 2.05                     | 0.56              |
| 13:CG:143:VAL:HA   | 13:CG:146:ASP:HB2  | 1.88                     | 0.56              |
| 14:CH:4:ILE:HG13   | 14:CH:47:PHE:CE1   | 2.41                     | 0.56              |
| 14:CH:96:THR:O     | 14:CH:100:ALA:HB2  | 2.05                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 14:CH:135:HIS:CG   | 14:CH:136:SER:H   | 2.22                     | 0.56              |
| 16:CJ:81:ILE:HG23  | 16:CJ:82:GLY:N    | 2.12                     | 0.56              |
| 19:CM:16:ARG:O     | 19:CM:17:ASN:CB   | 2.51                     | 0.56              |
| 27:CU:48:VAL:N     | 27:CU:49:PRO:HD3  | 2.21                     | 0.56              |
| 31:CY:5:LYS:H      | 31:CY:36:GLU:HB3  | 1.70                     | 0.56              |
| 32:CZ:63:ARG:C     | 32:CZ:65:ASN:H    | 2.07                     | 0.56              |
| 33:DA:72:A:H5'     | 33:DA:72:A:H8     | 1.70                     | 0.56              |
| 33:DA:244:U:C6     | 33:DA:894:G:C2    | 2.94                     | 0.56              |
| 33:DA:303:A:O2'    | 33:DA:555:U:H4'   | 2.05                     | 0.56              |
| 33:DA:899:C:C4     | 33:DA:900:A:C6    | 2.94                     | 0.56              |
| 33:DA:917:G:C2     | 33:DA:918:A:C8    | 2.93                     | 0.56              |
| 33:DA:926:G:H5'    | 33:DA:927:G:O5'   | 2.05                     | 0.56              |
| 33:DA:949:A:H61    | 33:DA:1232:U:H3   | 1.52                     | 0.56              |
| 33:DA:1287:A:C2    | 33:DA:1288:A:C2   | 2.94                     | 0.56              |
| 33:DA:1288:A:H1'   | 33:DA:1352:C:O2'  | 2.06                     | 0.56              |
| 35:DC:143:LEU:HD22 | 35:DC:143:LEU:H   | 1.68                     | 0.56              |
| 36:DD:125:ASN:HA   | 36:DD:141:VAL:CG2 | 2.34                     | 0.56              |
| 36:DD:160:LEU:HD13 | 36:DD:160:LEU:O   | 2.05                     | 0.56              |
| 37:DE:89:THR:HG23  | 37:DE:90:GLY:H    | 1.71                     | 0.56              |
| 38:DF:11:HIS:CD2   | 38:DF:14:GLN:H    | 2.22                     | 0.56              |
| 38:DF:99:ALA:HA    | 50:DR:23:LYS:HZ1  | 1.70                     | 0.56              |
| 39:DG:114:SER:HB2  | 39:DG:117:LEU:HB2 | 1.86                     | 0.56              |
| 42:DJ:30:LYS:HB2   | 42:DJ:36:VAL:HG21 | 1.86                     | 0.56              |
| 52:DT:49:ALA:HA    | 52:DT:52:GLU:OE1  | 2.05                     | 0.56              |
| 52:DT:69:ASN:H     | 52:DT:69:ASN:ND2  | 2.03                     | 0.56              |
| 53:DU:52:VAL:HG13  | 53:DU:53:LYS:N    | 2.21                     | 0.56              |
| 7:AA:12:C:H5       | 29:AW:50:VAL:HG22 | 1.70                     | 0.56              |
| 8:AB:208:C:N3      | 8:AB:209:C:C5     | 2.73                     | 0.56              |
| 8:AB:348:A:H2'     | 8:AB:349:U:C6     | 2.40                     | 0.56              |
| 8:AB:673:C:H2'     | 8:AB:674:G:H5'    | 1.87                     | 0.56              |
| 8:AB:1214:A:H2'    | 8:AB:1215:G:C8    | 2.40                     | 0.56              |
| 8:AB:1309:G:H5''   | 8:AB:1309:G:C8    | 2.40                     | 0.56              |
| 8:AB:1347:A:H2'    | 8:AB:1348:C:H5''  | 1.87                     | 0.56              |
| 8:AB:1663:G:C5'    | 8:AB:1663:G:C8    | 2.89                     | 0.56              |
| 8:AB:1816:C:C5     | 9:AC:62:ARG:HD2   | 2.37                     | 0.56              |
| 8:AB:1857:G:O2'    | 8:AB:1884:G:N2    | 2.39                     | 0.56              |
| 8:AB:2070:A:C2     | 8:AB:2071:A:C4    | 2.94                     | 0.56              |
| 8:AB:2213:U:O5'    | 8:AB:2213:U:C2    | 2.58                     | 0.56              |
| 8:AB:2358:A:C8     | 8:AB:2358:A:C5'   | 2.88                     | 0.56              |
| 8:AB:2393:U:H2'    | 8:AB:2394:C:O4'   | 2.05                     | 0.56              |
| 8:AB:2610:C:HO2'   | 8:AB:2611:C:P     | 2.28                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2619:C:H4'   | 10:AD:156:PHE:O    | 2.05                     | 0.56              |
| 8:AB:2762:C:H2'   | 8:AB:2762:C:O2     | 2.05                     | 0.56              |
| 8:AB:2784:U:C2    | 8:AB:2785:C:C5     | 2.94                     | 0.56              |
| 9:AC:15:VAL:CG1   | 9:AC:16:VAL:HG13   | 2.35                     | 0.56              |
| 9:AC:19:VAL:HG12  | 9:AC:20:ASN:H      | 1.71                     | 0.56              |
| 10:AD:107:VAL:CG2 | 10:AD:108:ASP:N    | 2.69                     | 0.56              |
| 11:AE:9:GLN:CB    | 11:AE:120:VAL:HG13 | 2.25                     | 0.56              |
| 11:AE:27:LEU:HD13 | 11:AE:31:VAL:CG2   | 2.33                     | 0.56              |
| 13:AG:41:GLU:H    | 13:AG:54:ARG:HG3   | 1.70                     | 0.56              |
| 13:AG:147:LEU:O   | 13:AG:150:TYR:HB2  | 2.06                     | 0.56              |
| 18:AL:57:LEU:O    | 18:AL:59:ARG:HD2   | 2.06                     | 0.56              |
| 22:AP:92:ARG:NE   | 22:AP:110:LYS:HB3  | 2.21                     | 0.56              |
| 32:AZ:3:LYS:CD    | 32:AZ:6:HIS:HB3    | 2.36                     | 0.56              |
| 33:BA:774:G:C6    | 33:BA:775:G:C6     | 2.94                     | 0.56              |
| 33:BA:793:U:H5'   | 33:BA:794:A:H5''   | 1.86                     | 0.56              |
| 33:BA:898:G:N2    | 33:BA:900:A:H3'    | 2.21                     | 0.56              |
| 33:BA:959:A:N6    | 51:BS:77:ARG:HA    | 2.19                     | 0.56              |
| 33:BA:989:U:HO2'  | 33:BA:1016:A:H2    | 1.53                     | 0.56              |
| 33:BA:1320:C:C4   | 33:BA:1321:U:C4    | 2.94                     | 0.56              |
| 33:BA:1513:A:H2   | 33:BA:1514:G:C4    | 2.21                     | 0.56              |
| 35:BC:206:ILE:CG1 | 35:BC:207:LEU:N    | 2.68                     | 0.56              |
| 36:BD:43:ARG:C    | 36:BD:45:PRO:HD3   | 2.26                     | 0.56              |
| 37:BE:74:ALA:CB   | 37:BE:148:SER:HB3  | 2.32                     | 0.56              |
| 42:BJ:14:ASP:OD2  | 42:BJ:16:ARG:HB2   | 2.06                     | 0.56              |
| 42:BJ:67:ILE:HG13 | 46:BN:95:LEU:HD13  | 1.88                     | 0.56              |
| 42:BJ:87:LEU:C    | 42:BJ:89:ARG:H     | 2.09                     | 0.56              |
| 43:BK:57:SER:OG   | 43:BK:90:PRO:HG3   | 2.05                     | 0.56              |
| 53:BU:3:ILE:HD13  | 53:BU:19:LYS:HB3   | 1.85                     | 0.56              |
| 53:BU:14:ALA:CA   | 53:BU:16:ARG:NE    | 2.68                     | 0.56              |
| 7:CA:15:A:N3      | 7:CA:15:A:H5''     | 2.20                     | 0.56              |
| 7:CA:76:G:H1'     | 28:CV:78:GLN:NE2   | 2.17                     | 0.56              |
| 8:CB:30:G:H8      | 8:CB:30:G:O5'      | 1.87                     | 0.56              |
| 8:CB:30:G:H2'     | 8:CB:31:C:O4'      | 2.05                     | 0.56              |
| 8:CB:39:G:H2'     | 8:CB:40:U:C6       | 2.41                     | 0.56              |
| 8:CB:246:C:H42    | 8:CB:252:G:H1      | 1.53                     | 0.56              |
| 8:CB:407:G:N2     | 8:CB:421:C:C6      | 2.74                     | 0.56              |
| 8:CB:449:A:C3'    | 8:CB:450:G:H5'     | 2.36                     | 0.56              |
| 8:CB:492:A:H3'    | 8:CB:493:G:O4'     | 2.06                     | 0.56              |
| 8:CB:699:A:H2'    | 8:CB:700:G:O4'     | 2.05                     | 0.56              |
| 8:CB:854:C:H2'    | 8:CB:855:G:H8      | 1.70                     | 0.56              |
| 8:CB:1134:A:O5'   | 8:CB:1134:A:H2'    | 2.05                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1407:G:H22    | 8:CB:1596:A:H1'    | 1.69                     | 0.56              |
| 8:CB:1550:C:H2'    | 8:CB:1551:A:C8     | 2.40                     | 0.56              |
| 8:CB:1764:C:C4     | 8:CB:1765:U:C5     | 2.93                     | 0.56              |
| 8:CB:1797:G:O2'    | 9:CC:254:LYS:NZ    | 2.38                     | 0.56              |
| 8:CB:2058:A:H5'    | 8:CB:2059:A:OP2    | 2.06                     | 0.56              |
| 8:CB:2193:G:N2     | 8:CB:2194:U:C2     | 2.74                     | 0.56              |
| 8:CB:2297:A:C8     | 8:CB:2298:A:N7     | 2.73                     | 0.56              |
| 8:CB:2466:C:C2     | 8:CB:2467:C:C5     | 2.93                     | 0.56              |
| 8:CB:2550:G:C2     | 8:CB:2559:C:O2     | 2.59                     | 0.56              |
| 8:CB:2758:A:C2     | 8:CB:2759:G:C1'    | 2.89                     | 0.56              |
| 9:CC:209:ALA:O     | 9:CC:213:ARG:NH1   | 2.39                     | 0.56              |
| 9:CC:229:HIS:CE1   | 9:CC:231:HIS:CD2   | 2.94                     | 0.56              |
| 10:CD:81:GLU:HG3   | 10:CD:82:PHE:N     | 2.20                     | 0.56              |
| 16:CJ:21:THR:HG22  | 16:CJ:58:ASN:CG    | 2.26                     | 0.56              |
| 16:CJ:42:ALA:HA    | 23:CQ:63:ARG:NH1   | 2.20                     | 0.56              |
| 19:CM:33:LEU:CD2   | 19:CM:124:LEU:HD12 | 2.35                     | 0.56              |
| 20:CN:11:ASN:O     | 20:CN:12:ARG:CB    | 2.53                     | 0.56              |
| 20:CN:103:ARG:HG2  | 20:CN:103:ARG:HH11 | 1.70                     | 0.56              |
| 21:CO:95:SER:O     | 21:CO:97:PHE:N     | 2.38                     | 0.56              |
| 22:CP:47:ILE:CG2   | 22:CP:48:ALA:N     | 2.68                     | 0.56              |
| 25:CS:91:GLY:O     | 25:CS:92:ARG:O     | 2.23                     | 0.56              |
| 27:CU:3:LYS:HB2    | 27:CU:3:LYS:HZ1    | 1.71                     | 0.56              |
| 27:CU:27:VAL:HB    | 27:CU:32:LYS:O     | 2.06                     | 0.56              |
| 27:CU:49:PRO:HD2   | 27:CU:52:ASN:CG    | 2.26                     | 0.56              |
| 28:CV:70:ILE:HG12  | 28:CV:72:VAL:HG22  | 1.87                     | 0.56              |
| 29:CW:55:ASP:CG    | 29:CW:56:HIS:N     | 2.58                     | 0.56              |
| 33:DA:48:C:H2'     | 33:DA:48:C:O2      | 2.05                     | 0.56              |
| 33:DA:332:G:O2'    | 33:DA:333:U:H5'    | 2.05                     | 0.56              |
| 33:DA:647:C:H2'    | 33:DA:648:A:H8     | 1.70                     | 0.56              |
| 33:DA:729:A:C2     | 33:DA:730:G:C8     | 2.94                     | 0.56              |
| 33:DA:780:A:C2     | 33:DA:803:G:N1     | 2.73                     | 0.56              |
| 33:DA:899:C:N4     | 33:DA:900:A:N6     | 2.53                     | 0.56              |
| 33:DA:906:A:C2'    | 33:DA:907:A:H5''   | 2.35                     | 0.56              |
| 33:DA:997:U:C2     | 33:DA:998:C:H5     | 2.23                     | 0.56              |
| 33:DA:1225:A:N3    | 33:DA:1226:C:C5    | 2.74                     | 0.56              |
| 33:DA:1238:A:C6    | 33:DA:1303:C:O4'   | 2.58                     | 0.56              |
| 34:DB:165:ALA:C    | 34:DB:167:HIS:N    | 2.58                     | 0.56              |
| 36:DD:101:VAL:HG12 | 36:DD:113:ALA:HB1  | 1.87                     | 0.56              |
| 41:DI:85:ALA:C     | 41:DI:87:MET:N     | 2.59                     | 0.56              |
| 2:A1:6:GLU:CG      | 8:AB:2284:A:OP1    | 2.53                     | 0.56              |
| 7:AA:50:A:C2       | 7:AA:51:G:H1'      | 2.41                     | 0.56              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 7:AA:105:G:C2    | 7:AA:106:G:C8     | 2.93                     | 0.56              |
| 8:AB:18:U:C5     | 8:AB:19:A:N7      | 2.74                     | 0.56              |
| 8:AB:142:A:O2'   | 8:AB:143:C:H5'    | 2.06                     | 0.56              |
| 8:AB:204:A:N7    | 8:AB:206:U:C2     | 2.73                     | 0.56              |
| 8:AB:314:C:C4    | 8:AB:315:G:N7     | 2.73                     | 0.56              |
| 8:AB:337:C:OP1   | 27:AU:3:LYS:HE2   | 2.06                     | 0.56              |
| 8:AB:466:A:C2    | 8:AB:796:C:O4'    | 2.59                     | 0.56              |
| 8:AB:571:U:C4    | 8:AB:575:A:C5     | 2.93                     | 0.56              |
| 8:AB:663:G:P     | 18:AL:27:LEU:HD23 | 2.46                     | 0.56              |
| 8:AB:675:A:OP1   | 11:AE:58:LYS:CD   | 2.50                     | 0.56              |
| 8:AB:808:G:O5'   | 8:AB:808:G:H8     | 1.88                     | 0.56              |
| 8:AB:961:C:C4    | 8:AB:2031:A:C5    | 2.93                     | 0.56              |
| 8:AB:1029:A:H3'  | 8:AB:1029:A:H8    | 1.70                     | 0.56              |
| 8:AB:1172:C:H2'  | 8:AB:1173:U:H1'   | 1.86                     | 0.56              |
| 8:AB:1220:G:N3   | 8:AB:1221:C:C6    | 2.74                     | 0.56              |
| 8:AB:1254:A:H5'' | 8:AB:1255:U:C5'   | 2.35                     | 0.56              |
| 8:AB:1291:C:C6   | 8:AB:1291:C:C5'   | 2.84                     | 0.56              |
| 8:AB:1399:C:H5'' | 26:AT:26:LYS:CG   | 2.27                     | 0.56              |
| 8:AB:1507:C:C6   | 8:AB:1507:C:H5''  | 2.40                     | 0.56              |
| 8:AB:1569:A:N6   | 8:AB:1570:A:C6    | 2.74                     | 0.56              |
| 8:AB:1652:A:N6   | 8:AB:1653:G:H22   | 2.04                     | 0.56              |
| 8:AB:1681:G:C4   | 8:AB:1762:A:C2    | 2.94                     | 0.56              |
| 8:AB:1838:C:C4   | 8:AB:1899:A:C2    | 2.92                     | 0.56              |
| 8:AB:2144:G:H21  | 8:AB:2148:G:H1'   | 1.70                     | 0.56              |
| 8:AB:2213:U:H3'  | 8:AB:2213:U:C2    | 2.38                     | 0.56              |
| 8:AB:2351:G:O2'  | 8:AB:2352:A:H5''  | 2.06                     | 0.56              |
| 8:AB:2360:G:H2'  | 8:AB:2361:G:O5'   | 2.06                     | 0.56              |
| 8:AB:2511:U:H4'  | 10:AD:128:ARG:CZ  | 2.35                     | 0.56              |
| 9:AC:220:ARG:O   | 9:AC:221:GLY:O    | 2.23                     | 0.56              |
| 10:AD:83:ARG:HD3 | 10:AD:84:LEU:N    | 2.20                     | 0.56              |
| 14:AH:31:VAL:HB  | 14:AH:32:PRO:CD   | 2.36                     | 0.56              |
| 14:AH:130:VAL:HB | 14:AH:142:VAL:CB  | 2.22                     | 0.56              |
| 18:AL:111:ILE:H  | 18:AL:126:ARG:NH2 | 1.99                     | 0.56              |
| 20:AN:25:ALA:HB1 | 20:AN:48:VAL:HG22 | 1.86                     | 0.56              |
| 27:AU:3:LYS:O    | 27:AU:4:ILE:CG1   | 2.53                     | 0.56              |
| 29:AW:28:GLU:CA  | 29:AW:61:LYS:HB2  | 2.35                     | 0.56              |
| 33:BA:110:C:O2   | 33:BA:110:C:H2'   | 2.05                     | 0.56              |
| 33:BA:394:G:N3   | 33:BA:395:C:C5    | 2.74                     | 0.56              |
| 33:BA:719:C:C2   | 50:BR:38:ILE:HG22 | 2.41                     | 0.56              |
| 33:BA:934:C:H5'' | 33:BA:934:C:H6    | 1.69                     | 0.56              |
| 33:BA:1074:G:H2' | 33:BA:1075:U:H5'' | 1.86                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1278:G:H5''  | 33:BA:1278:G:H8    | 1.71                     | 0.56              |
| 33:BA:1376:U:H2'   | 33:BA:1377:A:C8    | 2.40                     | 0.56              |
| 37:BE:84:VAL:HG13  | 37:BE:85:LYS:N     | 2.20                     | 0.56              |
| 37:BE:89:THR:HG21  | 37:BE:134:ASN:ND2  | 2.20                     | 0.56              |
| 2:C1:39:ASP:HB2    | 2:C1:45:HIS:CE1    | 2.41                     | 0.56              |
| 3:C2:18:PHE:CE1    | 8:CB:126:A:H5''    | 2.40                     | 0.56              |
| 7:CA:45:A:C8       | 12:CF:91:ARG:HD3   | 2.39                     | 0.56              |
| 8:CB:83:A:C2       | 8:CB:104:A:C2      | 2.94                     | 0.56              |
| 8:CB:103:A:H5''    | 8:CB:103:A:C8      | 2.34                     | 0.56              |
| 8:CB:208:C:H2'     | 8:CB:209:C:H6      | 1.70                     | 0.56              |
| 8:CB:321:U:H1'     | 11:CE:159:LEU:HD12 | 1.87                     | 0.56              |
| 8:CB:501:A:N6      | 8:CB:502:A:N1      | 2.53                     | 0.56              |
| 8:CB:556:A:C2      | 8:CB:557:C:C1'     | 2.89                     | 0.56              |
| 8:CB:769:U:H1'     | 8:CB:1379:U:C6     | 2.40                     | 0.56              |
| 8:CB:1003:G:H2'    | 8:CB:1010:A:N1     | 2.20                     | 0.56              |
| 8:CB:1380:G:C2     | 8:CB:1381:G:N7     | 2.73                     | 0.56              |
| 8:CB:1846:G:N2     | 8:CB:1895:C:C2     | 2.73                     | 0.56              |
| 8:CB:2144:G:N2     | 8:CB:2148:G:N2     | 2.53                     | 0.56              |
| 8:CB:2194:U:H2'    | 8:CB:2195:U:H6     | 1.71                     | 0.56              |
| 8:CB:2261:C:N3     | 8:CB:2280:G:C2     | 2.74                     | 0.56              |
| 8:CB:2461:A:C5     | 8:CB:2462:C:C5     | 2.92                     | 0.56              |
| 8:CB:2673:G:H2'    | 8:CB:2674:G:H5'    | 1.88                     | 0.56              |
| 9:CC:260:LYS:O     | 9:CC:261:ARG:HB2   | 2.06                     | 0.56              |
| 10:CD:129:THR:HG23 | 10:CD:130:GLN:N    | 2.18                     | 0.56              |
| 11:CE:2:GLU:HG3    | 11:CE:16:GLU:HA    | 1.88                     | 0.56              |
| 11:CE:116:ASP:OD1  | 11:CE:186:VAL:N    | 2.38                     | 0.56              |
| 12:CF:137:PHE:O    | 12:CF:139:GLU:N    | 2.38                     | 0.56              |
| 13:CG:102:ILE:CD1  | 13:CG:130:ILE:HD12 | 2.35                     | 0.56              |
| 14:CH:68:ARG:HG3   | 14:CH:71:LYS:HD3   | 1.88                     | 0.56              |
| 14:CH:113:SER:CB   | 14:CH:132:PHE:CE2  | 2.89                     | 0.56              |
| 17:CK:106:GLU:C    | 17:CK:108:ARG:H    | 2.07                     | 0.56              |
| 18:CL:34:GLY:N     | 24:CR:85:LYS:HD3   | 2.20                     | 0.56              |
| 18:CL:117:THR:HG23 | 18:CL:119:PRO:CD   | 2.35                     | 0.56              |
| 21:CO:64:TYR:O     | 21:CO:65:THR:HG23  | 2.05                     | 0.56              |
| 23:CQ:90:ASP:OD1   | 23:CQ:91:ARG:N     | 2.37                     | 0.56              |
| 33:DA:122:G:H5''   | 33:DA:122:G:H8     | 1.70                     | 0.56              |
| 33:DA:321:A:H4'    | 33:DA:1435:G:O2'   | 2.06                     | 0.56              |
| 33:DA:349:A:C2'    | 33:DA:350:G:H5''   | 2.35                     | 0.56              |
| 33:DA:428:G:C1'    | 33:DA:430:A:C8     | 2.89                     | 0.56              |
| 33:DA:539:A:H3'    | 33:DA:539:A:H8     | 1.70                     | 0.56              |
| 33:DA:656:G:C2     | 33:DA:751:U:C2     | 2.94                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:920:U:C2     | 33:DA:921:U:C5     | 2.94                     | 0.56              |
| 33:DA:975:A:OP2    | 33:DA:976:G:H4'    | 2.06                     | 0.56              |
| 33:DA:1114:C:N3    | 33:DA:1115:U:C5    | 2.73                     | 0.56              |
| 33:DA:1125:U:O4    | 33:DA:1150:A:C2    | 2.59                     | 0.56              |
| 33:DA:1248:A:H2'   | 33:DA:1249:C:H6    | 1.70                     | 0.56              |
| 33:DA:1522:U:C2    | 33:DA:1523:G:N7    | 2.74                     | 0.56              |
| 35:DC:64:ARG:HA    | 35:DC:99:GLN:HB2   | 1.88                     | 0.56              |
| 38:DF:67:PRO:HG2   | 38:DF:70:VAL:HG13  | 1.88                     | 0.56              |
| 39:DG:115:MET:HE2  | 39:DG:119:LEU:HD13 | 1.88                     | 0.56              |
| 47:DO:59:VAL:O     | 47:DO:62:ARG:HB3   | 2.05                     | 0.56              |
| 48:DP:36:VAL:HG11  | 48:DP:57:ILE:CG1   | 2.35                     | 0.56              |
| 4:A3:9:ALA:HB2     | 4:A3:58:ILE:HD12   | 1.88                     | 0.56              |
| 7:AA:37:C:C5       | 7:AA:38:C:N3       | 2.74                     | 0.56              |
| 7:AA:66:A:C2       | 7:AA:108:A:C2      | 2.94                     | 0.56              |
| 8:AB:116:C:H2'     | 8:AB:117:G:O4'     | 2.05                     | 0.56              |
| 8:AB:370:G:OP2     | 8:AB:370:G:C8      | 2.58                     | 0.56              |
| 8:AB:503:A:C2      | 8:AB:505:A:C4      | 2.93                     | 0.56              |
| 8:AB:559:G:C6      | 8:AB:560:C:C5      | 2.94                     | 0.56              |
| 8:AB:733:G:H3'     | 8:AB:733:G:C8      | 2.41                     | 0.56              |
| 8:AB:945:A:C2      | 8:AB:2448:A:C1'    | 2.88                     | 0.56              |
| 8:AB:1003:G:N2     | 8:AB:1153:C:C2     | 2.73                     | 0.56              |
| 8:AB:1068:G:C6     | 8:AB:1069:A:N6     | 2.74                     | 0.56              |
| 8:AB:1278:C:OP1    | 20:AN:36:THR:HG22  | 2.06                     | 0.56              |
| 8:AB:1326:U:O2'    | 8:AB:1327:A:H5'    | 2.05                     | 0.56              |
| 8:AB:1566:A:C2     | 9:AC:213:ARG:HG2   | 2.41                     | 0.56              |
| 8:AB:1799:G:C6     | 8:AB:1819:A:C8     | 2.93                     | 0.56              |
| 8:AB:1839:G:H2'    | 8:AB:1840:G:H5'    | 1.88                     | 0.56              |
| 8:AB:2240:U:N3     | 8:AB:2241:A:N7     | 2.53                     | 0.56              |
| 8:AB:2420:C:H3'    | 8:AB:2421:G:H5''   | 1.87                     | 0.56              |
| 8:AB:2485:G:C2'    | 8:AB:2486:C:H5'    | 2.36                     | 0.56              |
| 8:AB:2507:C:H2'    | 8:AB:2508:G:C8     | 2.40                     | 0.56              |
| 8:AB:2884:U:C6     | 8:AB:2884:U:C3'    | 2.88                     | 0.56              |
| 11:AE:121:VAL:HG12 | 11:AE:122:GLU:H    | 1.69                     | 0.56              |
| 13:AG:19:ASN:HB3   | 13:AG:22:VAL:HG13  | 1.87                     | 0.56              |
| 13:AG:169:ARG:NH1  | 13:AG:170:THR:N    | 2.54                     | 0.56              |
| 21:AO:56:LYS:HD3   | 21:AO:57:ALA:N     | 2.19                     | 0.56              |
| 23:AQ:47:ARG:NH1   | 23:AQ:50:ARG:HG2   | 2.20                     | 0.56              |
| 26:AT:88:LYS:O     | 26:AT:90:GLY:N     | 2.36                     | 0.56              |
| 28:AV:85:LYS:C     | 28:AV:86:LEU:HD12  | 2.25                     | 0.56              |
| 29:AW:36:ILE:CG2   | 29:AW:68:PHE:CD1   | 2.88                     | 0.56              |
| 32:AZ:32:LEU:HD22  | 32:AZ:33:ASN:O     | 2.06                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:502:A:OP1    | 44:BL:114:SER:N   | 2.39                     | 0.56              |
| 33:BA:581:G:N3     | 33:BA:761:G:N2    | 2.54                     | 0.56              |
| 33:BA:619:U:O2'    | 36:BD:134:TYR:CE1 | 2.53                     | 0.56              |
| 33:BA:706:A:O2'    | 43:BK:30:ILE:HD13 | 2.05                     | 0.56              |
| 33:BA:956:U:H2'    | 33:BA:957:U:O4'   | 2.05                     | 0.56              |
| 33:BA:1053:G:H3'   | 55:BA:5228:HOH:O  | 2.05                     | 0.56              |
| 33:BA:1084:G:C2'   | 33:BA:1085:U:H5'  | 2.32                     | 0.56              |
| 33:BA:1169:A:H2'   | 33:BA:1170:A:H8   | 1.67                     | 0.56              |
| 35:BC:17:TRP:O     | 35:BC:19:SER:N    | 2.39                     | 0.56              |
| 35:BC:113:LYS:HE3  | 35:BC:113:LYS:HA  | 1.88                     | 0.56              |
| 43:BK:18:GLY:HA2   | 43:BK:36:ARG:N    | 2.20                     | 0.56              |
| 43:BK:95:THR:HG23  | 43:BK:96:ILE:N    | 2.20                     | 0.56              |
| 44:BL:113:ARG:HH21 | 44:BL:120:ARG:H   | 1.53                     | 0.56              |
| 52:BT:68:LYS:CG    | 52:BT:69:ASN:H    | 2.15                     | 0.56              |
| 7:CA:94:A:C6       | 7:CA:95:U:C2      | 2.93                     | 0.56              |
| 7:CA:112:G:H8      | 7:CA:112:G:O5'    | 1.88                     | 0.56              |
| 8:CB:13:A:C2       | 8:CB:526:A:C8     | 2.94                     | 0.56              |
| 8:CB:120:U:O5'     | 8:CB:120:U:H2'    | 2.05                     | 0.56              |
| 8:CB:160:A:C2      | 8:CB:161:A:C5     | 2.94                     | 0.56              |
| 8:CB:536:G:OP2     | 55:CB:5082:HOH:O  | 2.18                     | 0.56              |
| 8:CB:587:C:OP1     | 18:CL:29:LYS:HE3  | 2.05                     | 0.56              |
| 8:CB:670:A:H8      | 8:CB:670:A:O5'    | 1.87                     | 0.56              |
| 8:CB:705:A:H4'     | 9:CC:13:ARG:HG2   | 1.87                     | 0.56              |
| 8:CB:948:C:O4'     | 8:CB:984:A:C2     | 2.58                     | 0.56              |
| 8:CB:955:U:H5''    | 8:CB:956:G:OP2    | 2.05                     | 0.56              |
| 8:CB:1028:A:C2     | 8:CB:1029:A:N7    | 2.74                     | 0.56              |
| 8:CB:1053:C:H2'    | 8:CB:1054:A:H5'   | 1.88                     | 0.56              |
| 8:CB:1088:A:H61    | 15:CI:92:PRO:HB3  | 1.71                     | 0.56              |
| 8:CB:1108:U:C4     | 8:CB:1109:C:H5    | 2.24                     | 0.56              |
| 8:CB:1275:A:N7     | 20:CN:16:HIS:CE1  | 2.74                     | 0.56              |
| 8:CB:1313:U:P      | 55:CB:5238:HOH:O  | 2.63                     | 0.56              |
| 8:CB:1507:C:C6     | 8:CB:1507:C:H5''  | 2.40                     | 0.56              |
| 8:CB:1809:A:C2     | 8:CB:1810:A:C4    | 2.94                     | 0.56              |
| 8:CB:2087:G:C2     | 8:CB:2233:U:O2    | 2.59                     | 0.56              |
| 8:CB:2428:G:H5''   | 8:CB:2429:G:OP1   | 2.06                     | 0.56              |
| 8:CB:2589:A:H2     | 8:CB:2590:A:C4    | 2.23                     | 0.56              |
| 9:CC:53:ILE:HG12   | 9:CC:218:THR:CB   | 2.36                     | 0.56              |
| 10:CD:30:GLU:OE2   | 10:CD:51:THR:HG23 | 2.06                     | 0.56              |
| 11:CE:29:HIS:CD2   | 18:CL:19:LEU:CD1  | 2.79                     | 0.56              |
| 13:CG:25:ILE:HG12  | 13:CG:26:LYS:N    | 2.21                     | 0.56              |
| 14:CH:78:VAL:CG1   | 14:CH:79:THR:H    | 2.11                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:CJ:117:ALA:O   | 16:CJ:121:LYS:HD3  | 2.06                     | 0.56              |
| 18:CL:92:LEU:H    | 18:CL:96:LYS:HD3   | 1.69                     | 0.56              |
| 19:CM:53:MET:HE2  | 19:CM:101:VAL:HG22 | 1.87                     | 0.56              |
| 21:CO:8:ILE:O     | 21:CO:11:ALA:HB3   | 2.06                     | 0.56              |
| 25:CS:33:LEU:HD21 | 25:CS:51:LEU:CD1   | 2.28                     | 0.56              |
| 25:CS:41:LYS:HG3  | 25:CS:42:LYS:N     | 2.20                     | 0.56              |
| 29:CW:28:GLU:N    | 29:CW:61:LYS:HB2   | 2.19                     | 0.56              |
| 32:CZ:59:ARG:HG3  | 32:CZ:62:LYS:HB2   | 1.87                     | 0.56              |
| 33:DA:243:A:C4    | 33:DA:245:U:C4     | 2.93                     | 0.56              |
| 33:DA:275:G:C2    | 33:DA:276:G:C4     | 2.93                     | 0.56              |
| 33:DA:451:A:H61   | 33:DA:481:G:C5'    | 2.18                     | 0.56              |
| 33:DA:604:G:C2'   | 33:DA:605:U:H5'    | 2.34                     | 0.56              |
| 33:DA:687:A:H2    | 33:DA:704:A:C6     | 2.23                     | 0.56              |
| 33:DA:873:A:OP1   | 33:DA:873:A:C8     | 2.58                     | 0.56              |
| 33:DA:907:A:H2'   | 33:DA:908:A:O4'    | 2.06                     | 0.56              |
| 35:DC:88:LYS:HE2  | 35:DC:88:LYS:HA    | 1.88                     | 0.56              |
| 35:DC:177:LEU:H   | 35:DC:177:LEU:CD2  | 2.18                     | 0.56              |
| 35:DC:198:LYS:HB3 | 35:DC:200:TRP:CZ3  | 2.40                     | 0.56              |
| 38:DF:92:THR:CG2  | 38:DF:93:LYS:N     | 2.69                     | 0.56              |
| 43:DK:18:GLY:HA2  | 43:DK:36:ARG:N     | 2.20                     | 0.56              |
| 43:DK:24:ALA:HB3  | 43:DK:87:GLY:O     | 2.05                     | 0.56              |
| 53:DU:3:ILE:HB    | 53:DU:18:PHE:CE2   | 2.41                     | 0.56              |
| 8:AB:38:A:C2      | 8:AB:442:G:C2      | 2.94                     | 0.56              |
| 8:AB:65:U:O2      | 26:AT:69:ARG:NH2   | 2.38                     | 0.56              |
| 8:AB:85:G:C4      | 8:AB:98:G:N2       | 2.74                     | 0.56              |
| 8:AB:261:G:N2     | 8:AB:262:A:C4      | 2.74                     | 0.56              |
| 8:AB:312:G:H2'    | 8:AB:313:G:C8      | 2.41                     | 0.56              |
| 8:AB:446:G:OP2    | 23:AQ:2:ARG:CZ     | 2.53                     | 0.56              |
| 8:AB:571:U:C4     | 8:AB:2030:A:C2     | 2.92                     | 0.56              |
| 8:AB:775:G:H5''   | 8:AB:777:G:H1'     | 1.87                     | 0.56              |
| 8:AB:978:G:N2     | 8:AB:986:C:N1      | 2.54                     | 0.56              |
| 8:AB:1048:A:H2    | 8:AB:1112:G:N3     | 2.04                     | 0.56              |
| 8:AB:1275:A:N6    | 55:AB:4461:HOH:O   | 2.39                     | 0.56              |
| 8:AB:1426:G:O5'   | 8:AB:1426:G:H8     | 1.89                     | 0.56              |
| 8:AB:1778:U:C5    | 8:AB:1784:A:N3     | 2.73                     | 0.56              |
| 8:AB:1796:U:H1'   | 8:AB:1824:G:H22    | 1.71                     | 0.56              |
| 8:AB:1853:A:N6    | 8:AB:1889:A:C4     | 2.74                     | 0.56              |
| 8:AB:1972:G:N2    | 8:AB:1973:G:C5     | 2.74                     | 0.56              |
| 8:AB:2369:A:H2'   | 8:AB:2370:G:C8     | 2.40                     | 0.56              |
| 8:AB:2488:G:C2    | 8:AB:2489:U:C4     | 2.93                     | 0.56              |
| 8:AB:2575:C:O2'   | 10:AD:146:ILE:HG22 | 2.05                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2675:A:H2'   | 8:AB:2676:C:H5'    | 1.88                     | 0.56              |
| 8:AB:2679:A:H2'   | 8:AB:2680:U:H6     | 1.71                     | 0.56              |
| 8:AB:2786:U:O2'   | 10:AD:65:ALA:CB    | 2.54                     | 0.56              |
| 9:AC:254:LYS:O    | 9:AC:255:LYS:C     | 2.44                     | 0.56              |
| 11:AE:25:GLU:O    | 11:AE:27:LEU:N     | 2.39                     | 0.56              |
| 13:AG:124:CYS:CB  | 13:AG:129:GLU:O    | 2.54                     | 0.56              |
| 13:AG:173:ALA:N   | 13:AG:174:LYS:HD2  | 2.21                     | 0.56              |
| 15:AI:132:ALA:O   | 15:AI:137:LEU:HB2  | 2.06                     | 0.56              |
| 16:AJ:73:VAL:HG22 | 16:AJ:74:TYR:N     | 2.21                     | 0.56              |
| 18:AL:29:LYS:HG2  | 18:AL:30:THR:N     | 2.20                     | 0.56              |
| 18:AL:78:ARG:HH21 | 18:AL:82:LEU:CG    | 2.17                     | 0.56              |
| 19:AM:26:VAL:HG13 | 19:AM:134:THR:OG1  | 2.05                     | 0.56              |
| 21:AO:76:LYS:O    | 21:AO:77:ALA:C     | 2.43                     | 0.56              |
| 21:AO:103:VAL:HA  | 21:AO:106:LEU:HB3  | 1.87                     | 0.56              |
| 22:AP:9:GLN:HB3   | 22:AP:56:SER:CB    | 2.30                     | 0.56              |
| 33:BA:38:G:N2     | 33:BA:397:A:C4     | 2.74                     | 0.56              |
| 33:BA:350:G:H5'   | 33:BA:350:G:C8     | 2.37                     | 0.56              |
| 33:BA:496:A:H2'   | 33:BA:496:A:N3     | 2.20                     | 0.56              |
| 33:BA:516:U:C5    | 33:BA:517:G:C6     | 2.94                     | 0.56              |
| 33:BA:552:U:H2'   | 33:BA:553:A:H8     | 1.70                     | 0.56              |
| 33:BA:607:A:H8    | 33:BA:607:A:O5'    | 1.88                     | 0.56              |
| 33:BA:895:G:N1    | 33:BA:896:C:C4     | 2.73                     | 0.56              |
| 33:BA:1255:G:H5'  | 33:BA:1255:G:C8    | 2.32                     | 0.56              |
| 33:BA:1428:A:N1   | 33:BA:1473:G:C6    | 2.73                     | 0.56              |
| 36:BD:56:GLU:HG2  | 36:BD:195:ASN:HD21 | 1.70                     | 0.56              |
| 38:BF:10:VAL:HG22 | 38:BF:84:VAL:HG23  | 1.88                     | 0.56              |
| 38:BF:93:LYS:O    | 38:BF:93:LYS:HD3   | 2.05                     | 0.56              |
| 41:BI:44:ARG:NH1  | 41:BI:44:ARG:H     | 2.04                     | 0.56              |
| 1:C0:18:HIS:ND1   | 1:C0:18:HIS:N      | 2.52                     | 0.56              |
| 3:C2:21:ARG:CG    | 3:C2:21:ARG:NH1    | 2.62                     | 0.56              |
| 7:CA:14:U:H1'     | 7:CA:107:G:O4'     | 2.05                     | 0.56              |
| 7:CA:28:C:H4'     | 21:CO:36:TYR:OH    | 2.06                     | 0.56              |
| 7:CA:50:A:OP1     | 21:CO:68:LYS:HG3   | 2.05                     | 0.56              |
| 8:CB:26:G:H1'     | 8:CB:514:A:N6      | 2.21                     | 0.56              |
| 8:CB:204:A:C8     | 8:CB:206:U:C2      | 2.93                     | 0.56              |
| 8:CB:250:G:H4'    | 18:CL:60:ARG:NH1   | 2.20                     | 0.56              |
| 8:CB:452:G:N1     | 8:CB:458:G:C8      | 2.74                     | 0.56              |
| 8:CB:764:A:OP2    | 8:CB:764:A:H4'     | 2.05                     | 0.56              |
| 8:CB:770:G:H1'    | 8:CB:1379:U:C4     | 2.40                     | 0.56              |
| 8:CB:854:C:H2'    | 8:CB:855:G:C8      | 2.40                     | 0.56              |
| 8:CB:978:G:N2     | 8:CB:986:C:N1      | 2.54                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1130:U:C5    | 8:CB:2026:U:OP2    | 2.59                     | 0.56              |
| 8:CB:1233:C:O2'   | 8:CB:1234:U:H5'    | 2.06                     | 0.56              |
| 8:CB:1315:C:H2'   | 8:CB:1316:U:H6     | 1.70                     | 0.56              |
| 8:CB:1336:A:C2    | 8:CB:1337:G:C4     | 2.93                     | 0.56              |
| 8:CB:1361:G:H2'   | 8:CB:1362:C:H6     | 1.71                     | 0.56              |
| 8:CB:1797:G:H2'   | 8:CB:1798:U:C6     | 2.41                     | 0.56              |
| 8:CB:1814:G:N7    | 8:CB:1815:A:C6     | 2.73                     | 0.56              |
| 8:CB:1945:G:N3    | 8:CB:1946:U:C6     | 2.74                     | 0.56              |
| 8:CB:2107:G:H2'   | 8:CB:2108:A:H8     | 1.67                     | 0.56              |
| 8:CB:2354:C:C4'   | 29:CW:30:VAL:HG13  | 2.26                     | 0.56              |
| 8:CB:2485:G:H8    | 8:CB:2485:G:O5'    | 1.88                     | 0.56              |
| 8:CB:2592:G:N1    | 8:CB:2593:U:C2     | 2.74                     | 0.56              |
| 8:CB:2650:U:O2    | 8:CB:2671:G:N2     | 2.39                     | 0.56              |
| 9:CC:34:GLU:OE1   | 9:CC:35:LYS:HG2    | 2.05                     | 0.56              |
| 9:CC:77:VAL:N     | 9:CC:112:GLY:HA2   | 2.20                     | 0.56              |
| 9:CC:169:ALA:O    | 9:CC:170:TYR:CB    | 2.52                     | 0.56              |
| 10:CD:107:VAL:CG2 | 10:CD:108:ASP:N    | 2.69                     | 0.56              |
| 14:CH:50:ARG:HA   | 14:CH:53:GLU:OE1   | 2.05                     | 0.56              |
| 16:CJ:16:TYR:HD1  | 16:CJ:16:TYR:H     | 1.53                     | 0.56              |
| 18:CL:57:LEU:C    | 18:CL:58:TYR:HD2   | 2.09                     | 0.56              |
| 19:CM:44:ARG:HH11 | 19:CM:91:TYR:HE2   | 1.53                     | 0.56              |
| 22:CP:7:LEU:HA    | 22:CP:10:GLU:CG    | 2.34                     | 0.56              |
| 24:CR:39:LEU:C    | 24:CR:41:ILE:N     | 2.59                     | 0.56              |
| 24:CR:86:GLN:HG2  | 24:CR:87:GLN:HE21  | 1.71                     | 0.56              |
| 26:CT:84:TYR:C    | 26:CT:85:VAL:HG13  | 2.26                     | 0.56              |
| 29:CW:44:PHE:HB2  | 29:CW:78:PHE:HA    | 1.87                     | 0.56              |
| 33:DA:46:G:N2     | 33:DA:396:C:N3     | 2.54                     | 0.56              |
| 33:DA:372:C:H42   | 33:DA:389:A:N6     | 2.03                     | 0.56              |
| 33:DA:377:G:C6    | 33:DA:387:U:O2     | 2.58                     | 0.56              |
| 33:DA:401:C:H2'   | 33:DA:402:G:C8     | 2.41                     | 0.56              |
| 33:DA:750:C:H4'   | 47:DO:20:ASP:CA    | 2.26                     | 0.56              |
| 33:DA:1100:C:H5'' | 33:DA:1101:A:OP2   | 2.06                     | 0.56              |
| 33:DA:1217:C:O2   | 33:DA:1217:C:H2'   | 2.05                     | 0.56              |
| 35:DC:122:GLN:O   | 35:DC:127:VAL:HG13 | 2.05                     | 0.56              |
| 40:DH:119:GLY:C   | 40:DH:120:LEU:HD22 | 2.27                     | 0.56              |
| 43:DK:30:ILE:HG22 | 43:DK:45:THR:OG1   | 2.06                     | 0.56              |
| 43:DK:74:LYS:HE2  | 43:DK:79:LYS:CE    | 2.36                     | 0.56              |
| 45:DM:48:SER:O    | 45:DM:52:ILE:HG22  | 2.06                     | 0.56              |
| 47:DO:29:ALA:HA   | 47:DO:84:LEU:HD21  | 1.86                     | 0.56              |
| 48:DP:20:VAL:HG23 | 48:DP:35:ARG:HB2   | 1.87                     | 0.56              |
| 4:A3:51:LYS:HD2   | 18:AL:59:ARG:CZ    | 2.36                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:A4:24:ARG:HH12  | 5:A4:36:ARG:HB2    | 1.70                     | 0.56              |
| 7:AA:87:U:C2'     | 7:AA:88:C:O5'      | 2.54                     | 0.56              |
| 7:AA:101:A:N7     | 7:AA:102:G:N7      | 2.54                     | 0.56              |
| 8:AB:375:G:O6     | 8:AB:400:G:N3      | 2.39                     | 0.56              |
| 8:AB:714:U:H2'    | 8:AB:716:A:N7      | 2.20                     | 0.56              |
| 8:AB:748:G:C5     | 8:AB:750:A:C5      | 2.94                     | 0.56              |
| 8:AB:942:G:OP1    | 18:AL:40:SER:HB2   | 2.05                     | 0.56              |
| 8:AB:1128:G:H5'   | 8:AB:2517:C:H5'    | 1.88                     | 0.56              |
| 8:AB:1190:G:OP1   | 18:AL:41:ARG:CD    | 2.54                     | 0.56              |
| 8:AB:1195:G:H5''  | 8:AB:1195:G:H8     | 1.70                     | 0.56              |
| 8:AB:1566:A:C2    | 9:AC:213:ARG:CZ    | 2.88                     | 0.56              |
| 8:AB:1647:U:H3'   | 8:AB:1647:U:P      | 2.45                     | 0.56              |
| 8:AB:1821:A:H2'   | 8:AB:1822:C:H6     | 1.71                     | 0.56              |
| 8:AB:2618:G:H2'   | 8:AB:2619:C:H6     | 1.69                     | 0.56              |
| 8:AB:2654:A:H4'   | 8:AB:2655:G:H4'    | 1.88                     | 0.56              |
| 8:AB:2743:U:C5    | 8:AB:2744:G:C8     | 2.93                     | 0.56              |
| 10:AD:157:LYS:HE3 | 16:AJ:80:HIS:HA    | 1.87                     | 0.56              |
| 16:AJ:21:THR:HG22 | 16:AJ:58:ASN:CG    | 2.26                     | 0.56              |
| 16:AJ:25:LEU:O    | 16:AJ:27:ARG:N     | 2.36                     | 0.56              |
| 16:AJ:35:ARG:NH1  | 16:AJ:41:LYS:N     | 2.54                     | 0.56              |
| 18:AL:40:SER:CA   | 18:AL:41:ARG:HE    | 2.19                     | 0.56              |
| 21:AO:12:THR:OG1  | 21:AO:13:ARG:N     | 2.33                     | 0.56              |
| 23:AQ:78:PHE:CE1  | 23:AQ:82:LEU:HD11  | 2.41                     | 0.56              |
| 23:AQ:102:LYS:O   | 23:AQ:105:PHE:N    | 2.39                     | 0.56              |
| 25:AS:29:VAL:CG2  | 25:AS:69:LEU:HB2   | 2.35                     | 0.56              |
| 25:AS:53:SER:O    | 25:AS:55:ILE:N     | 2.39                     | 0.56              |
| 25:AS:80:PRO:O    | 25:AS:100:THR:HG22 | 2.06                     | 0.56              |
| 27:AU:91:LYS:HB3  | 27:AU:93:ARG:HG3   | 1.88                     | 0.56              |
| 29:AW:81:ILE:HG13 | 29:AW:82:GLU:HG3   | 1.86                     | 0.56              |
| 30:AX:43:LEU:O    | 30:AX:48:ARG:N     | 2.39                     | 0.56              |
| 33:BA:31:G:N2     | 33:BA:47:C:H4'     | 2.19                     | 0.56              |
| 33:BA:106:C:H2'   | 33:BA:107:G:O4'    | 2.05                     | 0.56              |
| 33:BA:407:U:H2'   | 33:BA:407:U:O2     | 2.04                     | 0.56              |
| 33:BA:543:U:H5''  | 33:BA:544:G:OP2    | 2.06                     | 0.56              |
| 33:BA:582:C:H41   | 33:BA:583:A:N6     | 2.04                     | 0.56              |
| 33:BA:720:C:O2'   | 50:BR:51:GLN:NE2   | 2.36                     | 0.56              |
| 33:BA:784:A:H2'   | 33:BA:785:G:C8     | 2.41                     | 0.56              |
| 33:BA:908:A:C2'   | 33:BA:909:A:H5'    | 2.36                     | 0.56              |
| 33:BA:922:G:N3    | 33:BA:1398:A:C2    | 2.74                     | 0.56              |
| 33:BA:971:G:N2    | 33:BA:1363:A:C8    | 2.74                     | 0.56              |
| 33:BA:1015:G:H1'  | 33:BA:1218:C:O2'   | 2.04                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:1142:G:H3'  | 33:BA:1143:G:C8   | 2.41                     | 0.56              |
| 33:BA:1220:G:C4   | 33:BA:1221:G:C8   | 2.94                     | 0.56              |
| 33:BA:1237:C:N4   | 33:BA:1337:G:H1   | 2.00                     | 0.56              |
| 34:BB:40:ILE:CG2  | 34:BB:200:PRO:HB2 | 2.35                     | 0.56              |
| 34:BB:98:GLY:O    | 34:BB:102:ASN:N   | 2.39                     | 0.56              |
| 34:BB:111:LYS:HE2 | 34:BB:115:ASP:OD2 | 2.06                     | 0.56              |
| 43:BK:30:ILE:HA   | 43:BK:45:THR:HG1  | 1.71                     | 0.56              |
| 4:C3:26:ALA:O     | 8:CB:2393:U:OP1   | 2.24                     | 0.56              |
| 7:CA:82:U:H3      | 7:CA:94:A:H61     | 1.53                     | 0.56              |
| 8:CB:83:A:C2      | 8:CB:104:A:N1     | 2.74                     | 0.56              |
| 8:CB:83:A:N6      | 27:CU:90:LYS:HZ3  | 2.04                     | 0.56              |
| 8:CB:92:U:C4      | 8:CB:93:G:N7      | 2.74                     | 0.56              |
| 8:CB:347:A:H2'    | 8:CB:348:A:O4'    | 2.06                     | 0.56              |
| 8:CB:475:C:C4     | 8:CB:481:G:O6     | 2.59                     | 0.56              |
| 8:CB:536:G:N7     | 8:CB:537:G:C5     | 2.74                     | 0.56              |
| 8:CB:537:G:N1     | 8:CB:555:G:N2     | 2.54                     | 0.56              |
| 8:CB:673:C:C2'    | 8:CB:674:G:H5'    | 2.35                     | 0.56              |
| 8:CB:729:G:C4     | 8:CB:1775:U:O2    | 2.58                     | 0.56              |
| 8:CB:743:A:C2'    | 8:CB:744:U:H5'    | 2.36                     | 0.56              |
| 8:CB:869:G:C5     | 8:CB:870:U:C5     | 2.94                     | 0.56              |
| 8:CB:1004:U:H1'   | 8:CB:1010:A:C4    | 2.40                     | 0.56              |
| 8:CB:1196:C:H1'   | 8:CB:1226:A:C4    | 2.41                     | 0.56              |
| 8:CB:1268:A:H2'   | 8:CB:1269:A:O5'   | 2.06                     | 0.56              |
| 8:CB:1378:A:C8    | 8:CB:1380:G:C5    | 2.94                     | 0.56              |
| 8:CB:1417:C:H4'   | 8:CB:1588:G:O4'   | 2.06                     | 0.56              |
| 8:CB:1890:A:N7    | 8:CB:1891:G:C8    | 2.74                     | 0.56              |
| 8:CB:2074:U:C4    | 8:CB:2436:G:C2    | 2.94                     | 0.56              |
| 8:CB:2745:C:C4    | 8:CB:2746:U:C4    | 2.93                     | 0.56              |
| 8:CB:2762:C:H2'   | 8:CB:2762:C:O2    | 2.05                     | 0.56              |
| 8:CB:2848:G:H2'   | 22:CP:96:LEU:HB2  | 1.86                     | 0.56              |
| 11:CE:153:LEU:HG  | 11:CE:172:ALA:CA  | 2.34                     | 0.56              |
| 16:CJ:39:LYS:O    | 16:CJ:40:HIS:C    | 2.42                     | 0.56              |
| 18:CL:43:GLY:C    | 18:CL:45:GLY:N    | 2.59                     | 0.56              |
| 18:CL:104:GLN:NE2 | 18:CL:104:GLN:H   | 2.04                     | 0.56              |
| 21:CO:36:TYR:H    | 21:CO:52:SER:HB2  | 1.69                     | 0.56              |
| 22:CP:27:VAL:CG1  | 22:CP:47:ILE:HD12 | 2.36                     | 0.56              |
| 24:CR:5:PHE:HB2   | 24:CR:12:HIS:ND1  | 2.20                     | 0.56              |
| 33:DA:356:A:H2'   | 33:DA:357:G:H8    | 1.70                     | 0.56              |
| 33:DA:578:C:OP1   | 55:DA:5139:HOH:O  | 2.17                     | 0.56              |
| 33:DA:663:A:N1    | 33:DA:743:A:N1    | 2.53                     | 0.56              |
| 33:DA:825:A:H61   | 33:DA:875:U:H3    | 1.54                     | 0.56              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:833:G:N2     | 33:DA:834:U:O2    | 2.39                     | 0.56              |
| 33:DA:886:G:N3     | 33:DA:887:G:C8    | 2.74                     | 0.56              |
| 33:DA:913:A:C8     | 33:DA:913:A:C5'   | 2.87                     | 0.56              |
| 33:DA:1069:C:H6    | 33:DA:1069:C:H3'  | 1.71                     | 0.56              |
| 33:DA:1139:G:C4'   | 33:DA:1140:C:H5'  | 2.35                     | 0.56              |
| 33:DA:1281:C:H5'   | 33:DA:1282:C:C5   | 2.40                     | 0.56              |
| 33:DA:1385:G:C5    | 33:DA:1386:G:C8   | 2.93                     | 0.56              |
| 39:DG:17:PHE:HB2   | 39:DG:43:TYR:OH   | 2.05                     | 0.56              |
| 44:DL:109:ARG:HH21 | 44:DL:111:GLN:HB3 | 1.70                     | 0.56              |
| 49:DQ:65:PRO:HA    | 49:DQ:71:SER:CB   | 2.36                     | 0.56              |
| 52:DT:33:LYS:O     | 52:DT:36:ALA:HB3  | 2.06                     | 0.56              |
| 7:AA:104:A:H1'     | 28:AV:31:TYR:CD1  | 2.41                     | 0.56              |
| 8:AB:283:G:C5      | 8:AB:284:U:C5     | 2.94                     | 0.56              |
| 8:AB:311:A:C3'     | 8:AB:312:G:H8     | 2.16                     | 0.56              |
| 8:AB:597:G:C2      | 8:AB:661:A:N3     | 2.73                     | 0.56              |
| 8:AB:699:A:H2'     | 8:AB:700:G:O4'    | 2.06                     | 0.56              |
| 8:AB:748:G:C8      | 8:AB:750:A:C8     | 2.94                     | 0.56              |
| 8:AB:812:C:N3      | 8:AB:813:U:C5     | 2.73                     | 0.56              |
| 8:AB:827:U:P       | 8:AB:828:U:H5     | 2.29                     | 0.56              |
| 8:AB:1000:A:N6     | 8:AB:1155:A:C8    | 2.74                     | 0.56              |
| 8:AB:1092:C:H2'    | 8:AB:1093:G:O4'   | 2.05                     | 0.56              |
| 8:AB:1104:C:H2'    | 8:AB:1105:U:H6    | 1.71                     | 0.56              |
| 8:AB:1358:G:H8     | 8:AB:1358:G:O5'   | 1.89                     | 0.56              |
| 8:AB:1816:C:C6     | 9:AC:62:ARG:NH1   | 2.74                     | 0.56              |
| 8:AB:2031:A:N1     | 8:AB:2498:C:C6    | 2.74                     | 0.56              |
| 8:AB:2044:C:N3     | 8:AB:2045:C:C5    | 2.74                     | 0.56              |
| 8:AB:2052:A:O5'    | 8:AB:2052:A:H8    | 1.88                     | 0.56              |
| 8:AB:2057:G:N1     | 8:AB:2058:A:C2    | 2.74                     | 0.56              |
| 8:AB:2439:A:H4'    | 8:AB:2440:C:H5''  | 1.88                     | 0.56              |
| 8:AB:2524:G:O2'    | 8:AB:2741:A:C2    | 2.59                     | 0.56              |
| 8:AB:2551:C:H2'    | 8:AB:2552:U:O4'   | 2.05                     | 0.56              |
| 8:AB:2592:G:C2     | 8:AB:2593:U:C2    | 2.94                     | 0.56              |
| 8:AB:2798:U:OP2    | 8:AB:2798:U:H3'   | 2.06                     | 0.56              |
| 8:AB:2881:U:H2'    | 8:AB:2882:A:C8    | 2.39                     | 0.56              |
| 9:AC:146:LYS:HB3   | 9:AC:147:PRO:HD2  | 1.88                     | 0.56              |
| 10:AD:24:VAL:HG23  | 10:AD:191:GLY:HA2 | 1.87                     | 0.56              |
| 10:AD:46:ARG:CD    | 10:AD:80:TRP:CH2  | 2.89                     | 0.56              |
| 11:AE:59:PRO:HB2   | 11:AE:60:TRP:CD1  | 2.41                     | 0.56              |
| 13:AG:97:VAL:CG2   | 13:AG:123:GLU:HA  | 2.25                     | 0.56              |
| 14:AH:14:SER:C     | 14:AH:16:GLY:H    | 2.08                     | 0.56              |
| 22:AP:13:LYS:HB3   | 22:AP:13:LYS:NZ   | 2.21                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:96:U:O5'    | 33:BA:96:U:H6      | 1.89                     | 0.56              |
| 33:BA:113:G:C2    | 33:BA:315:A:C2     | 2.94                     | 0.56              |
| 33:BA:153:C:H2'   | 33:BA:154:U:C6     | 2.41                     | 0.56              |
| 33:BA:254:G:O2'   | 49:BQ:19:SER:HB2   | 2.06                     | 0.56              |
| 33:BA:397:A:N7    | 33:BA:547:A:O2'    | 2.39                     | 0.56              |
| 33:BA:546:A:H8    | 33:BA:546:A:O5'    | 1.89                     | 0.56              |
| 33:BA:718:A:N7    | 33:BA:719:C:C5     | 2.74                     | 0.56              |
| 33:BA:835:U:H5''  | 33:BA:836:G:OP2    | 2.06                     | 0.56              |
| 33:BA:913:A:O2'   | 33:BA:914:A:OP2    | 2.22                     | 0.56              |
| 33:BA:1144:G:C2   | 33:BA:1145:A:C5    | 2.93                     | 0.56              |
| 33:BA:1197:A:OP2  | 33:BA:1197:A:H3'   | 2.06                     | 0.56              |
| 33:BA:1413:A:N3   | 33:BA:1414:U:H1'   | 2.21                     | 0.56              |
| 33:BA:1428:A:H5'' | 33:BA:1429:A:OP2   | 2.06                     | 0.56              |
| 34:BB:31:PHE:N    | 34:BB:39:ILE:O     | 2.30                     | 0.56              |
| 34:BB:95:TRP:CE3  | 34:BB:170:ILE:HG22 | 2.41                     | 0.56              |
| 35:BC:63:ILE:CD1  | 35:BC:98:ALA:HB2   | 2.36                     | 0.56              |
| 35:BC:70:ALA:HB1  | 35:BC:108:PRO:CG   | 2.36                     | 0.56              |
| 36:BD:201:GLU:OE1 | 37:BE:103:GLY:HA3  | 2.06                     | 0.56              |
| 37:BE:80:LEU:O    | 37:BE:97:PRO:HB3   | 2.06                     | 0.56              |
| 41:BI:33:SER:H    | 41:BI:36:GLN:HE21  | 1.54                     | 0.56              |
| 42:BJ:12:ALA:HA   | 42:BJ:96:VAL:HG13  | 1.86                     | 0.56              |
| 42:BJ:24:GLU:HG2  | 42:BJ:90:LEU:HD13  | 1.88                     | 0.56              |
| 49:BQ:59:GLU:O    | 49:BQ:74:LEU:HD23  | 2.05                     | 0.56              |
| 52:BT:49:ALA:HA   | 52:BT:52:GLU:OE1   | 2.06                     | 0.56              |
| 53:BU:46:ARG:C    | 53:BU:48:LYS:H     | 2.09                     | 0.56              |
| 3:C2:28:ARG:NH2   | 3:C2:31:LEU:HB2    | 2.21                     | 0.56              |
| 8:CB:220:G:C5     | 8:CB:427:U:C5      | 2.94                     | 0.56              |
| 8:CB:467:G:C2     | 8:CB:468:G:C8      | 2.94                     | 0.56              |
| 8:CB:563:A:N1     | 8:CB:2018:G:N9     | 2.54                     | 0.56              |
| 8:CB:612:G:N2     | 8:CB:617:G:O6      | 2.39                     | 0.56              |
| 8:CB:1296:G:C4    | 8:CB:1645:G:N2     | 2.74                     | 0.56              |
| 8:CB:1661:G:C4    | 8:CB:1662:U:C6     | 2.94                     | 0.56              |
| 8:CB:1707:G:C2    | 8:CB:1708:C:C2     | 2.94                     | 0.56              |
| 8:CB:1796:U:O2'   | 8:CB:1797:G:H5'    | 2.07                     | 0.56              |
| 8:CB:1809:A:H2'   | 8:CB:1809:A:N3     | 2.21                     | 0.56              |
| 8:CB:2048:G:H1    | 8:CB:2620:C:H42    | 1.53                     | 0.56              |
| 8:CB:2311:A:C6    | 12:CF:39:VAL:CG2   | 2.89                     | 0.56              |
| 8:CB:2331:G:C4'   | 29:CW:69:GLU:CG    | 2.83                     | 0.56              |
| 8:CB:2521:C:H6    | 8:CB:2521:C:C5'    | 2.18                     | 0.56              |
| 8:CB:2592:G:N1    | 8:CB:2593:U:O2     | 2.39                     | 0.56              |
| 8:CB:2747:G:H21   | 8:CB:2757:A:H62    | 1.54                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:CC:24:HIS:HB3   | 9:CC:27:LYS:NZ    | 2.20                     | 0.56              |
| 11:CE:64:GLY:O    | 11:CE:66:GLY:N    | 2.39                     | 0.56              |
| 11:CE:143:LEU:HA  | 11:CE:148:ILE:CG2 | 2.34                     | 0.56              |
| 11:CE:181:ILE:O   | 11:CE:181:ILE:CG2 | 2.54                     | 0.56              |
| 18:CL:123:ARG:HA  | 18:CL:142:ILE:CA  | 2.29                     | 0.56              |
| 21:CO:30:ARG:HH22 | 21:CO:97:PHE:CB   | 2.18                     | 0.56              |
| 27:CU:66:VAL:O    | 27:CU:68:ASN:HB2  | 2.06                     | 0.56              |
| 33:DA:57:G:C8     | 33:DA:57:G:O5'    | 2.59                     | 0.56              |
| 33:DA:110:C:O2    | 33:DA:111:G:C8    | 2.59                     | 0.56              |
| 33:DA:539:A:C8    | 33:DA:539:A:C3'   | 2.89                     | 0.56              |
| 33:DA:540:G:C5    | 33:DA:541:G:N7    | 2.73                     | 0.56              |
| 33:DA:777:A:H2'   | 33:DA:778:G:C8    | 2.41                     | 0.56              |
| 33:DA:806:C:H2'   | 33:DA:807:A:C8    | 2.41                     | 0.56              |
| 33:DA:859:G:H2'   | 33:DA:860:A:N7    | 2.20                     | 0.56              |
| 33:DA:943:U:H6    | 33:DA:943:U:O5'   | 1.88                     | 0.56              |
| 33:DA:1457:G:H2'  | 33:DA:1458:G:C8   | 2.41                     | 0.56              |
| 35:DC:104:GLU:HG2 | 35:DC:105:VAL:H   | 1.70                     | 0.56              |
| 36:DD:2:ARG:NH2   | 36:DD:114:ARG:NE  | 2.53                     | 0.56              |
| 37:DE:15:ILE:HB   | 37:DE:35:LEU:HB3  | 1.88                     | 0.56              |
| 37:DE:80:LEU:HD12 | 37:DE:81:GLN:H    | 1.71                     | 0.56              |
| 38:DF:99:ALA:HB1  | 50:DR:23:LYS:HE2  | 1.87                     | 0.56              |
| 50:DR:25:ILE:O    | 50:DR:29:LYS:HG3  | 2.05                     | 0.56              |
| 50:DR:39:VAL:HG12 | 50:DR:40:PRO:HD2  | 1.88                     | 0.56              |
| 1:A0:18:HIS:N     | 1:A0:18:HIS:ND1   | 2.52                     | 0.55              |
| 7:AA:18:G:N2      | 7:AA:19:C:H1'     | 2.21                     | 0.55              |
| 8:AB:128:C:N4     | 8:AB:129:C:H41    | 2.04                     | 0.55              |
| 8:AB:197:A:N1     | 8:AB:198:C:C2     | 2.74                     | 0.55              |
| 8:AB:223:A:N7     | 8:AB:422:A:C8     | 2.74                     | 0.55              |
| 8:AB:247:G:C8     | 8:AB:247:G:H3'    | 2.41                     | 0.55              |
| 8:AB:478:A:O5'    | 8:AB:478:A:H8     | 1.90                     | 0.55              |
| 8:AB:548:G:H2'    | 8:AB:548:G:N3     | 2.20                     | 0.55              |
| 8:AB:689:A:C2     | 8:AB:779:U:H4'    | 2.41                     | 0.55              |
| 8:AB:1284:A:O5'   | 8:AB:1284:A:H8    | 1.89                     | 0.55              |
| 8:AB:1292:G:C6    | 8:AB:1293:C:N4    | 2.73                     | 0.55              |
| 8:AB:1358:G:N7    | 8:AB:1371:G:O6    | 2.39                     | 0.55              |
| 8:AB:1469:A:C2    | 8:AB:1470:A:C4    | 2.93                     | 0.55              |
| 8:AB:2190:G:O2'   | 8:AB:2191:A:H5'   | 2.05                     | 0.55              |
| 8:AB:2404:U:O2    | 8:AB:2404:U:H2'   | 2.05                     | 0.55              |
| 8:AB:2421:G:H8    | 8:AB:2421:G:C5'   | 2.17                     | 0.55              |
| 8:AB:2610:C:O2'   | 8:AB:2611:C:OP2   | 2.22                     | 0.55              |
| 8:AB:2704:C:C2    | 8:AB:2705:A:C8    | 2.94                     | 0.55              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AC:155:ARG:CD    | 9:AC:157:ALA:CB   | 2.83                     | 0.55              |
| 10:AD:33:ARG:CG    | 10:AD:93:GLY:HA2  | 2.35                     | 0.55              |
| 10:AD:170:VAL:HG11 | 10:AD:194:PRO:HG3 | 1.87                     | 0.55              |
| 18:AL:85:VAL:CG2   | 18:AL:98:ALA:HB3  | 2.36                     | 0.55              |
| 20:AN:24:MET:CE    | 20:AN:44:LEU:HD13 | 2.36                     | 0.55              |
| 20:AN:96:ARG:CG    | 20:AN:98:LEU:HD21 | 2.36                     | 0.55              |
| 21:AO:55:GLU:O     | 21:AO:62:LEU:HB2  | 2.06                     | 0.55              |
| 25:AS:7:HIS:O      | 25:AS:8:ARG:CB    | 2.53                     | 0.55              |
| 26:AT:3:ARG:HH22   | 26:AT:8:LEU:HB3   | 1.71                     | 0.55              |
| 28:AV:69:GLU:HA    | 28:AV:69:GLU:OE2  | 2.05                     | 0.55              |
| 29:AW:38:ARG:HG3   | 29:AW:39:GLN:O    | 2.07                     | 0.55              |
| 29:AW:38:ARG:O     | 29:AW:39:GLN:CB   | 2.53                     | 0.55              |
| 33:BA:120:A:C6     | 33:BA:122:G:C2    | 2.94                     | 0.55              |
| 33:BA:502:A:H2'    | 33:BA:503:C:O4'   | 2.04                     | 0.55              |
| 33:BA:522:C:H41    | 44:BL:49:ARG:HH22 | 1.53                     | 0.55              |
| 33:BA:586:C:H4'    | 40:BH:80:PRO:HB2  | 1.88                     | 0.55              |
| 33:BA:670:G:C8     | 33:BA:670:G:C3'   | 2.87                     | 0.55              |
| 33:BA:705:G:C3'    | 33:BA:706:A:H5''  | 2.37                     | 0.55              |
| 33:BA:761:G:H8     | 33:BA:761:G:O5'   | 1.88                     | 0.55              |
| 33:BA:1083:U:H2'   | 33:BA:1083:U:O2   | 2.04                     | 0.55              |
| 33:BA:1118:U:H2'   | 33:BA:1119:C:C6   | 2.40                     | 0.55              |
| 40:BH:11:THR:HG23  | 40:BH:14:ARG:HH12 | 1.71                     | 0.55              |
| 45:BM:12:LYS:HB3   | 45:BM:17:ALA:HB2  | 1.87                     | 0.55              |
| 48:BP:25:ARG:H     | 48:BP:25:ARG:CD   | 2.17                     | 0.55              |
| 49:BQ:10:ARG:NE    | 49:BQ:11:VAL:H    | 2.03                     | 0.55              |
| 50:BR:49:LYS:O     | 50:BR:49:LYS:HG3  | 2.05                     | 0.55              |
| 51:BS:75:PRO:HB3   | 51:BS:79:TYR:OH   | 2.05                     | 0.55              |
| 5:C4:27:CYS:O      | 5:C4:28:SER:O     | 2.24                     | 0.55              |
| 8:CB:51:G:N2       | 8:CB:119:A:N3     | 2.54                     | 0.55              |
| 8:CB:80:G:N1       | 8:CB:81:G:N7      | 2.54                     | 0.55              |
| 8:CB:142:A:O2'     | 8:CB:143:C:C2     | 2.44                     | 0.55              |
| 8:CB:192:C:P       | 55:CB:5052:HOH:O  | 2.63                     | 0.55              |
| 8:CB:553:G:C6      | 8:CB:554:U:C4     | 2.93                     | 0.55              |
| 8:CB:612:G:H1'     | 8:CB:616:A:H61    | 1.70                     | 0.55              |
| 8:CB:672:C:OP1     | 8:CB:801:G:N2     | 2.39                     | 0.55              |
| 8:CB:772:C:C2      | 8:CB:773:U:C6     | 2.95                     | 0.55              |
| 8:CB:936:A:H2'     | 8:CB:937:C:C6     | 2.41                     | 0.55              |
| 8:CB:1343:G:N2     | 8:CB:1384:A:C2    | 2.74                     | 0.55              |
| 8:CB:1676:A:C4     | 8:CB:1677:A:C8    | 2.95                     | 0.55              |
| 8:CB:1680:U:C2'    | 8:CB:1681:G:H5'   | 2.37                     | 0.55              |
| 8:CB:1821:A:H2'    | 8:CB:1822:C:H6    | 1.71                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2055:C:H5'    | 8:CB:2056:G:O5'    | 2.07                     | 0.55              |
| 8:CB:2137:U:H2'    | 8:CB:2138:G:H8     | 1.71                     | 0.55              |
| 8:CB:2190:G:O2'    | 8:CB:2191:A:H5'    | 2.04                     | 0.55              |
| 8:CB:2200:C:H6     | 8:CB:2200:C:H3'    | 1.71                     | 0.55              |
| 8:CB:2360:G:C1'    | 18:CL:61:LEU:HD21  | 2.32                     | 0.55              |
| 8:CB:2489:U:C4     | 8:CB:2490:G:C6     | 2.94                     | 0.55              |
| 8:CB:2498:C:O2     | 8:CB:2498:C:C2'    | 2.54                     | 0.55              |
| 8:CB:2531:A:C2     | 8:CB:2532:G:C8     | 2.95                     | 0.55              |
| 8:CB:2837:A:C6     | 8:CB:2838:G:N7     | 2.74                     | 0.55              |
| 11:CE:147:LEU:CB   | 11:CE:167:VAL:HG13 | 2.36                     | 0.55              |
| 11:CE:175:ILE:HG23 | 11:CE:176:ASP:H    | 1.71                     | 0.55              |
| 12:CF:52:ALA:HB1   | 12:CF:148:VAL:HG13 | 1.88                     | 0.55              |
| 14:CH:35:LYS:NZ    | 14:CH:37:VAL:CG2   | 2.69                     | 0.55              |
| 15:CI:56:VAL:HG22  | 15:CI:57:VAL:N     | 2.19                     | 0.55              |
| 16:CJ:94:ALA:HA    | 16:CJ:97:PRO:CB    | 2.36                     | 0.55              |
| 19:CM:76:LYS:HG2   | 19:CM:77:PRO:N     | 2.21                     | 0.55              |
| 20:CN:96:ARG:CG    | 20:CN:98:LEU:HD21  | 2.35                     | 0.55              |
| 23:CQ:113:LYS:O    | 23:CQ:115:ALA:N    | 2.30                     | 0.55              |
| 27:CU:98:ASN:O     | 27:CU:99:SER:CB    | 2.54                     | 0.55              |
| 33:DA:56:U:H2'     | 33:DA:57:G:C8      | 2.41                     | 0.55              |
| 33:DA:127:G:C2     | 33:DA:128:G:C8     | 2.94                     | 0.55              |
| 33:DA:146:G:C2'    | 33:DA:147:G:H5'    | 2.36                     | 0.55              |
| 33:DA:279:A:C2     | 33:DA:281:G:N2     | 2.73                     | 0.55              |
| 33:DA:328:C:O4'    | 33:DA:328:C:O2     | 2.24                     | 0.55              |
| 33:DA:646:G:C6     | 33:DA:647:C:C2     | 2.94                     | 0.55              |
| 33:DA:742:G:H2'    | 33:DA:743:A:O5'    | 2.06                     | 0.55              |
| 33:DA:1071:C:N4    | 33:DA:1084:G:C2    | 2.74                     | 0.55              |
| 35:DC:5:HIS:NE2    | 35:DC:183:TYR:HE2  | 2.04                     | 0.55              |
| 35:DC:70:ALA:O     | 35:DC:105:VAL:HG22 | 2.06                     | 0.55              |
| 48:DP:3:THR:HG22   | 48:DP:66:THR:HB    | 1.88                     | 0.55              |
| 48:DP:78:VAL:HG12  | 48:DP:80:LYS:CG    | 2.36                     | 0.55              |
| 52:DT:5:SER:O      | 52:DT:7:LYS:N      | 2.38                     | 0.55              |
| 7:AA:75:G:C5       | 7:AA:76:G:N7       | 2.74                     | 0.55              |
| 8:AB:13:A:C2       | 8:AB:525:U:O2      | 2.59                     | 0.55              |
| 8:AB:123:G:N2      | 8:AB:129:C:N3      | 2.54                     | 0.55              |
| 8:AB:219:A:O2'     | 8:AB:220:G:H5'     | 2.05                     | 0.55              |
| 8:AB:396:G:N1      | 8:AB:397:U:C2      | 2.74                     | 0.55              |
| 8:AB:524:G:H4'     | 8:AB:555:G:H4'     | 1.86                     | 0.55              |
| 8:AB:531:C:C6      | 8:AB:2035:G:N2     | 2.74                     | 0.55              |
| 8:AB:644:A:N6      | 8:AB:2369:A:H1'    | 2.21                     | 0.55              |
| 8:AB:735:A:C8      | 8:AB:736:C:C5      | 2.94                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:741:U:N3     | 8:AB:757:G:C2     | 2.74                     | 0.55              |
| 8:AB:869:G:N2     | 8:AB:870:U:H1'    | 2.20                     | 0.55              |
| 8:AB:1031:G:C2    | 8:AB:1124:G:C2    | 2.95                     | 0.55              |
| 8:AB:1213:A:N3    | 8:AB:1238:G:H1'   | 2.21                     | 0.55              |
| 8:AB:1323:C:H3'   | 8:AB:1324:G:H5''  | 1.86                     | 0.55              |
| 8:AB:1419:A:N7    | 8:AB:1421:G:C6    | 2.74                     | 0.55              |
| 8:AB:1651:G:C5'   | 20:AN:39:PRO:HG2  | 2.31                     | 0.55              |
| 8:AB:1992:G:C4    | 8:AB:1997:C:N4    | 2.74                     | 0.55              |
| 8:AB:2193:G:N2    | 8:AB:2194:U:C2    | 2.75                     | 0.55              |
| 8:AB:2297:A:C8    | 8:AB:2298:A:N7    | 2.74                     | 0.55              |
| 8:AB:2396:G:C8    | 8:AB:2396:G:C5'   | 2.90                     | 0.55              |
| 8:AB:2467:C:O4'   | 19:AM:118:LYS:HG2 | 2.05                     | 0.55              |
| 8:AB:2584:U:H3'   | 8:AB:2584:U:C6    | 2.40                     | 0.55              |
| 9:AC:32:LEU:HD23  | 9:AC:61:TYR:HE1   | 1.71                     | 0.55              |
| 9:AC:34:GLU:OE1   | 9:AC:35:LYS:HG2   | 2.05                     | 0.55              |
| 9:AC:78:GLU:O     | 9:AC:79:ARG:HB2   | 2.06                     | 0.55              |
| 11:AE:44:ARG:HE   | 11:AE:44:ARG:N    | 2.03                     | 0.55              |
| 11:AE:144:GLU:C   | 11:AE:146:VAL:H   | 2.08                     | 0.55              |
| 12:AF:44:ALA:O    | 12:AF:48:LEU:HD12 | 2.07                     | 0.55              |
| 14:AH:104:THR:CB  | 14:AH:109:GLU:HG2 | 2.34                     | 0.55              |
| 14:AH:140:ALA:C   | 14:AH:141:LYS:HD3 | 2.27                     | 0.55              |
| 19:AM:96:ILE:HG22 | 19:AM:97:GLN:NE2  | 2.20                     | 0.55              |
| 19:AM:115:GLU:OE2 | 19:AM:115:GLU:N   | 2.39                     | 0.55              |
| 19:AM:133:LYS:HE2 | 28:AV:57:TYR:CD2  | 2.41                     | 0.55              |
| 20:AN:24:MET:HE2  | 20:AN:44:LEU:HD13 | 1.88                     | 0.55              |
| 22:AP:7:LEU:HA    | 22:AP:10:GLU:CG   | 2.36                     | 0.55              |
| 22:AP:7:LEU:HA    | 22:AP:10:GLU:HG3  | 1.87                     | 0.55              |
| 28:AV:62:THR:HA   | 28:AV:70:ILE:HD11 | 1.87                     | 0.55              |
| 32:AZ:7:PRO:O     | 32:AZ:8:LYS:HB3   | 2.05                     | 0.55              |
| 33:BA:109:A:C5    | 33:BA:326:G:C2    | 2.94                     | 0.55              |
| 33:BA:212:G:H2'   | 33:BA:213:G:C8    | 2.36                     | 0.55              |
| 33:BA:263:A:OP2   | 52:BT:73:ARG:NH1  | 2.39                     | 0.55              |
| 33:BA:655:A:H2'   | 33:BA:656:G:O4'   | 2.06                     | 0.55              |
| 33:BA:661:G:H5''  | 33:BA:661:G:C8    | 2.39                     | 0.55              |
| 33:BA:775:G:C2    | 33:BA:776:G:C4    | 2.95                     | 0.55              |
| 33:BA:858:G:C6    | 33:BA:869:G:C8    | 2.95                     | 0.55              |
| 33:BA:865:A:OP1   | 33:BA:1078:U:C4   | 2.60                     | 0.55              |
| 33:BA:1016:A:O2'  | 33:BA:1217:C:H1'  | 2.06                     | 0.55              |
| 33:BA:1054:C:H6   | 33:BA:1054:C:H3'  | 1.70                     | 0.55              |
| 33:BA:1461:G:H2'  | 33:BA:1462:C:H6   | 1.71                     | 0.55              |
| 33:BA:1509:C:C2   | 33:BA:1510:C:C5   | 2.94                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BD:90:LEU:HA    | 36:BD:93:LEU:CG    | 2.37                     | 0.55              |
| 37:BE:50:GLY:N     | 37:BE:62:ALA:HB2   | 2.22                     | 0.55              |
| 37:BE:81:GLN:HE21  | 37:BE:148:SER:HA   | 1.71                     | 0.55              |
| 41:BI:94:ARG:C     | 41:BI:96:GLU:H     | 2.10                     | 0.55              |
| 46:BN:18:LYS:HB2   | 46:BN:19:TYR:CD1   | 2.41                     | 0.55              |
| 8:CB:86:G:H1       | 8:CB:96:C:N4       | 2.03                     | 0.55              |
| 8:CB:443:A:C5      | 11:CE:40:ARG:NH1   | 2.73                     | 0.55              |
| 8:CB:538:A:N1      | 8:CB:539:G:C5      | 2.74                     | 0.55              |
| 8:CB:592:A:H2'     | 8:CB:593:U:C6      | 2.40                     | 0.55              |
| 8:CB:1128:G:H1'    | 8:CB:2516:A:O2'    | 2.06                     | 0.55              |
| 8:CB:1190:G:OP1    | 18:CL:38:GLN:CB    | 2.52                     | 0.55              |
| 8:CB:1471:G:H2'    | 8:CB:1472:C:C6     | 2.41                     | 0.55              |
| 8:CB:1476:U:H1'    | 8:CB:1732:C:O2     | 2.06                     | 0.55              |
| 8:CB:1824:G:OP1    | 9:CC:52:HIS:CD2    | 2.60                     | 0.55              |
| 8:CB:1995:U:O2     | 8:CB:1995:U:H2'    | 2.06                     | 0.55              |
| 8:CB:2194:U:H2'    | 8:CB:2195:U:C6     | 2.41                     | 0.55              |
| 8:CB:2312:U:OP1    | 12:CF:69:ALA:HA    | 2.06                     | 0.55              |
| 8:CB:2656:U:C5     | 8:CB:2664:G:N2     | 2.75                     | 0.55              |
| 9:CC:89:ASN:N      | 9:CC:89:ASN:HD22   | 2.03                     | 0.55              |
| 9:CC:226:PRO:HG3   | 9:CC:232:GLY:O     | 2.06                     | 0.55              |
| 10:CD:184:ARG:HH12 | 22:CP:4:ILE:HD13   | 1.72                     | 0.55              |
| 14:CH:113:SER:N    | 14:CH:132:PHE:CZ   | 2.74                     | 0.55              |
| 16:CJ:102:GLU:CD   | 16:CJ:124:VAL:HG13 | 2.27                     | 0.55              |
| 18:CL:6:LEU:O      | 18:CL:7:SER:CB     | 2.54                     | 0.55              |
| 18:CL:37:GLY:O     | 18:CL:38:GLN:CG    | 2.54                     | 0.55              |
| 18:CL:79:LEU:HG    | 18:CL:113:ALA:H    | 1.71                     | 0.55              |
| 18:CL:110:VAL:O    | 18:CL:111:ILE:CD1  | 2.54                     | 0.55              |
| 23:CQ:30:VAL:HG21  | 23:CQ:33:VAL:HG21  | 1.87                     | 0.55              |
| 23:CQ:30:VAL:O     | 23:CQ:31:TYR:HB2   | 2.05                     | 0.55              |
| 27:CU:25:LYS:O     | 27:CU:26:ASN:HB2   | 2.06                     | 0.55              |
| 29:CW:42:THR:CG2   | 29:CW:66:VAL:H     | 2.20                     | 0.55              |
| 33:DA:16:A:N1      | 33:DA:919:A:H2     | 2.04                     | 0.55              |
| 33:DA:158:G:C4     | 33:DA:159:G:C8     | 2.95                     | 0.55              |
| 33:DA:317:U:H2'    | 33:DA:318:G:C8     | 2.40                     | 0.55              |
| 33:DA:407:U:H1'    | 36:DD:115:GLN:HE22 | 1.70                     | 0.55              |
| 33:DA:573:A:C2     | 33:DA:574:A:C6     | 2.95                     | 0.55              |
| 33:DA:720:C:C4     | 33:DA:721:G:C2     | 2.94                     | 0.55              |
| 33:DA:844:G:N2     | 33:DA:845:A:H62    | 2.03                     | 0.55              |
| 33:DA:931:C:H2'    | 33:DA:932:C:C6     | 2.41                     | 0.55              |
| 33:DA:1420:U:H6    | 33:DA:1420:U:H3'   | 1.71                     | 0.55              |
| 33:DA:1435:G:C6    | 33:DA:1436:U:C4    | 2.93                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:DB:17:HIS:HB3  | 34:DB:18:GLN:OE1   | 2.06                     | 0.55              |
| 35:DC:21:TRP:HD1  | 35:DC:58:ARG:HG2   | 1.70                     | 0.55              |
| 36:DD:84:ASN:HD21 | 36:DD:87:GLU:CB    | 2.19                     | 0.55              |
| 36:DD:186:GLU:OE1 | 36:DD:186:GLU:HA   | 2.06                     | 0.55              |
| 37:DE:97:PRO:HA   | 37:DE:122:VAL:HG12 | 1.89                     | 0.55              |
| 38:DF:44:ARG:HD3  | 38:DF:44:ARG:H     | 1.71                     | 0.55              |
| 41:DI:54:VAL:HG12 | 41:DI:93:LEU:HD21  | 1.88                     | 0.55              |
| 41:DI:99:LYS:O    | 41:DI:99:LYS:HD3   | 2.06                     | 0.55              |
| 51:DS:13:HIS:HD2  | 51:DS:34:SER:OG    | 1.89                     | 0.55              |
| 4:A3:29:ARG:HH22  | 4:A3:31:ILE:HD13   | 1.72                     | 0.55              |
| 5:A4:31:PRO:HB2   | 8:AB:2527:C:H5''   | 1.88                     | 0.55              |
| 7:AA:47:C:H6      | 7:AA:47:C:O5'      | 1.90                     | 0.55              |
| 8:AB:298:G:N2     | 8:AB:339:U:H5      | 2.04                     | 0.55              |
| 8:AB:559:G:C5     | 8:AB:560:C:C5      | 2.94                     | 0.55              |
| 8:AB:599:A:H1'    | 8:AB:659:G:H22     | 1.69                     | 0.55              |
| 8:AB:969:G:C4     | 8:AB:970:U:C5      | 2.94                     | 0.55              |
| 8:AB:1038:G:N2    | 8:AB:1118:C:N3     | 2.54                     | 0.55              |
| 8:AB:1254:A:H5''  | 8:AB:1255:U:H5''   | 1.88                     | 0.55              |
| 8:AB:1262:A:P     | 25:AS:99:ARG:HH12  | 2.30                     | 0.55              |
| 8:AB:1313:U:H2'   | 8:AB:1313:U:O2     | 2.05                     | 0.55              |
| 8:AB:1345:C:H3'   | 8:AB:1345:C:C6     | 2.41                     | 0.55              |
| 8:AB:1776:G:C6    | 8:AB:1777:U:C4     | 2.95                     | 0.55              |
| 8:AB:2061:G:C2    | 8:AB:2063:C:C4     | 2.94                     | 0.55              |
| 8:AB:2355:G:C6    | 8:AB:2356:U:C2     | 2.94                     | 0.55              |
| 8:AB:2674:G:H8    | 8:AB:2674:G:O5'    | 1.89                     | 0.55              |
| 8:AB:2743:U:H3'   | 8:AB:2743:U:H6     | 1.71                     | 0.55              |
| 9:AC:153:LEU:HD11 | 9:AC:159:THR:HB    | 1.88                     | 0.55              |
| 10:AD:34:VAL:HG22 | 10:AD:35:THR:H     | 1.71                     | 0.55              |
| 10:AD:62:LYS:H    | 10:AD:62:LYS:CD    | 2.18                     | 0.55              |
| 11:AE:172:ALA:O   | 11:AE:174:GLY:N    | 2.34                     | 0.55              |
| 12:AF:71:LYS:HE2  | 12:AF:72:SER:O     | 2.06                     | 0.55              |
| 13:AG:23:ILE:HG13 | 13:AG:24:THR:H     | 1.71                     | 0.55              |
| 16:AJ:63:ALA:HA   | 16:AJ:69:ARG:NH1   | 2.21                     | 0.55              |
| 17:AK:42:THR:HG22 | 17:AK:42:THR:O     | 2.07                     | 0.55              |
| 18:AL:54:GLN:CB   | 18:AL:56:PRO:HD2   | 2.35                     | 0.55              |
| 22:AP:27:VAL:CG2  | 22:AP:86:LYS:HB2   | 2.32                     | 0.55              |
| 24:AR:84:ARG:HH12 | 24:AR:86:GLN:CB    | 2.18                     | 0.55              |
| 29:AW:50:VAL:HG13 | 29:AW:51:GLY:N     | 2.21                     | 0.55              |
| 31:AY:40:THR:HG23 | 31:AY:43:ILE:H     | 1.72                     | 0.55              |
| 32:AZ:56:ARG:CG   | 32:AZ:56:ARG:NH1   | 2.66                     | 0.55              |
| 33:BA:10:A:OP2    | 37:BE:130:THR:HB   | 2.05                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:161:A:O2'    | 33:BA:162:A:H5'    | 2.06                     | 0.55              |
| 33:BA:332:G:O2'    | 33:BA:333:U:H5'    | 2.06                     | 0.55              |
| 33:BA:665:A:C2     | 33:BA:732:C:C4     | 2.94                     | 0.55              |
| 33:BA:737:C:C6     | 33:BA:737:C:C3'    | 2.89                     | 0.55              |
| 33:BA:1347:G:H4'   | 33:BA:1348:U:H5'   | 1.87                     | 0.55              |
| 35:BC:23:ALA:HB3   | 35:BC:28:PHE:CD1   | 2.41                     | 0.55              |
| 35:BC:146:LYS:O    | 35:BC:170:GLY:HA3  | 2.05                     | 0.55              |
| 36:BD:25:ARG:HH12  | 36:BD:30:LYS:HB3   | 1.72                     | 0.55              |
| 44:BL:29:LYS:H     | 44:BL:81:ILE:CG2   | 2.04                     | 0.55              |
| 44:BL:35:ARG:NE    | 44:BL:35:ARG:HA    | 2.21                     | 0.55              |
| 47:BO:52:ARG:O     | 47:BO:56:LEU:HD12  | 2.06                     | 0.55              |
| 48:BP:78:VAL:O     | 48:BP:78:VAL:HG13  | 2.07                     | 0.55              |
| 1:C0:21:LEU:HB2    | 25:CS:23:LEU:CD2   | 2.36                     | 0.55              |
| 3:C2:10:LEU:CB     | 8:CB:125:A:C2      | 2.83                     | 0.55              |
| 7:CA:29:A:H2'      | 7:CA:29:A:N3       | 2.22                     | 0.55              |
| 8:CB:38:A:C2       | 8:CB:442:G:C2      | 2.94                     | 0.55              |
| 8:CB:338:G:C6      | 8:CB:339:U:C4      | 2.94                     | 0.55              |
| 8:CB:563:A:N6      | 8:CB:2018:G:N7     | 2.54                     | 0.55              |
| 8:CB:818:G:N2      | 8:CB:1190:G:C6     | 2.74                     | 0.55              |
| 8:CB:1195:G:C2     | 8:CB:1196:C:C6     | 2.93                     | 0.55              |
| 8:CB:1363:C:H2'    | 8:CB:1364:G:H8     | 1.72                     | 0.55              |
| 8:CB:1809:A:H5''   | 8:CB:1810:A:OP2    | 2.06                     | 0.55              |
| 8:CB:2053:G:N2     | 8:CB:2054:A:C4     | 2.75                     | 0.55              |
| 8:CB:2216:G:C2'    | 8:CB:2217:G:H5'    | 2.37                     | 0.55              |
| 8:CB:2235:G:C8     | 8:CB:2235:G:O5'    | 2.59                     | 0.55              |
| 8:CB:2286:G:C4     | 8:CB:2346:A:N6     | 2.73                     | 0.55              |
| 8:CB:2324:U:H5'    | 8:CB:2325:G:H5'    | 1.86                     | 0.55              |
| 8:CB:2866:U:C4'    | 8:CB:2867:G:H4'    | 2.33                     | 0.55              |
| 8:CB:2867:G:H2'    | 8:CB:2867:G:N3     | 2.20                     | 0.55              |
| 9:CC:63:ILE:O      | 9:CC:64:VAL:HG22   | 2.06                     | 0.55              |
| 10:CD:124:ARG:HB3  | 10:CD:160:LYS:HD3  | 1.87                     | 0.55              |
| 10:CD:185:ASN:O    | 10:CD:186:LEU:HD12 | 2.07                     | 0.55              |
| 13:CG:51:PHE:HB3   | 13:CG:68:ARG:NH1   | 2.21                     | 0.55              |
| 16:CJ:3:THR:O      | 16:CJ:4:PHE:HB3    | 2.05                     | 0.55              |
| 18:CL:6:LEU:O      | 18:CL:7:SER:HB2    | 2.06                     | 0.55              |
| 20:CN:10:LEU:HB3   | 20:CN:17:ARG:NH2   | 2.21                     | 0.55              |
| 20:CN:27:SER:O     | 20:CN:30:ARG:N     | 2.39                     | 0.55              |
| 20:CN:55:ALA:CB    | 20:CN:79:LEU:O     | 2.51                     | 0.55              |
| 20:CN:99:LYS:HD2   | 20:CN:99:LYS:H     | 1.70                     | 0.55              |
| 23:CQ:109:VAL:HG12 | 23:CQ:113:LYS:HZ3  | 1.69                     | 0.55              |
| 33:DA:185:U:H3'    | 33:DA:185:U:C6     | 2.41                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:266:G:N2    | 33:DA:270:A:N6     | 2.53                     | 0.55              |
| 33:DA:309:A:N1    | 33:DA:310:G:C5     | 2.75                     | 0.55              |
| 33:DA:573:A:N1    | 33:DA:574:A:C6     | 2.74                     | 0.55              |
| 33:DA:573:A:H3'   | 33:DA:574:A:C8     | 2.42                     | 0.55              |
| 33:DA:596:A:C2    | 33:DA:597:G:C8     | 2.95                     | 0.55              |
| 33:DA:617:G:C2    | 33:DA:618:C:C5     | 2.95                     | 0.55              |
| 33:DA:754:C:O4'   | 47:DO:68:TYR:CD1   | 2.59                     | 0.55              |
| 33:DA:788:U:C4    | 33:DA:789:U:C5     | 2.94                     | 0.55              |
| 33:DA:881:G:C6    | 33:DA:882:C:C5     | 2.94                     | 0.55              |
| 33:DA:1069:C:N4   | 33:DA:1094:G:C6    | 2.74                     | 0.55              |
| 33:DA:1076:U:H6   | 33:DA:1076:U:C5'   | 2.20                     | 0.55              |
| 33:DA:1078:U:H4'  | 37:DE:137:ARG:HH12 | 1.70                     | 0.55              |
| 33:DA:1102:A:C6   | 33:DA:1103:C:C4    | 2.95                     | 0.55              |
| 33:DA:1185:G:C6   | 33:DA:1186:G:N7    | 2.75                     | 0.55              |
| 33:DA:1225:A:OP2  | 45:DM:102:LYS:HG2  | 2.07                     | 0.55              |
| 34:DB:95:TRP:CZ3  | 34:DB:99:MET:HB2   | 2.41                     | 0.55              |
| 35:DC:69:THR:HG22 | 35:DC:70:ALA:N     | 2.21                     | 0.55              |
| 36:DD:57:LYS:HB2  | 36:DD:199:ILE:CG2  | 2.37                     | 0.55              |
| 38:DF:18:VAL:N    | 38:DF:19:PRO:HD2   | 2.21                     | 0.55              |
| 38:DF:76:THR:C    | 38:DF:78:PHE:H     | 2.09                     | 0.55              |
| 39:DG:109:LYS:HD3 | 39:DG:132:THR:HG21 | 1.89                     | 0.55              |
| 44:DL:52:CYS:SG   | 44:DL:54:VAL:HG13  | 2.45                     | 0.55              |
| 48:DP:39:PHE:O    | 48:DP:39:PHE:CD2   | 2.59                     | 0.55              |
| 52:DT:3:ILE:O     | 52:DT:4:LYS:HB2    | 2.06                     | 0.55              |
| 53:DU:38:GLU:HA   | 53:DU:41:THR:OG1   | 2.06                     | 0.55              |
| 8:AB:23:G:C2      | 8:AB:518:G:C2      | 2.95                     | 0.55              |
| 8:AB:245:G:N3     | 8:AB:384:A:C2      | 2.74                     | 0.55              |
| 8:AB:295:G:H2'    | 8:AB:296:U:H5'     | 1.88                     | 0.55              |
| 8:AB:338:G:C2     | 8:AB:339:U:C2      | 2.95                     | 0.55              |
| 8:AB:412:A:N6     | 8:AB:2412:A:O4'    | 2.39                     | 0.55              |
| 8:AB:583:G:N1     | 8:AB:584:C:C4      | 2.74                     | 0.55              |
| 8:AB:680:C:O2     | 8:AB:681:G:C8      | 2.59                     | 0.55              |
| 8:AB:738:G:C6     | 8:AB:739:A:N1      | 2.75                     | 0.55              |
| 8:AB:778:G:C5     | 8:AB:779:U:C6      | 2.94                     | 0.55              |
| 8:AB:870:U:H5''   | 19:AM:9:PHE:HB2    | 1.88                     | 0.55              |
| 8:AB:968:C:C2     | 8:AB:969:G:C8      | 2.94                     | 0.55              |
| 8:AB:1004:U:O4'   | 8:AB:1010:A:C6     | 2.59                     | 0.55              |
| 8:AB:1022:G:C8    | 16:AJ:68:LYS:HE3   | 2.41                     | 0.55              |
| 8:AB:1199:U:O2'   | 23:AQ:2:ARG:HD2    | 2.06                     | 0.55              |
| 8:AB:1744:A:H2'   | 8:AB:1745:A:C8     | 2.42                     | 0.55              |
| 8:AB:2357:G:N3    | 8:AB:2361:G:C6     | 2.74                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2378:A:H3'   | 8:AB:2378:A:C8    | 2.42                     | 0.55              |
| 8:AB:2604:U:C2    | 8:AB:2605:U:C5    | 2.94                     | 0.55              |
| 8:AB:2834:G:O6    | 8:AB:2879:A:H2'   | 2.06                     | 0.55              |
| 11:AE:51:GLU:OE2  | 11:AE:51:GLU:HA   | 2.05                     | 0.55              |
| 11:AE:67:ARG:H    | 11:AE:67:ARG:HD2  | 1.70                     | 0.55              |
| 11:AE:153:LEU:HB2 | 11:AE:193:VAL:CG1 | 2.35                     | 0.55              |
| 12:AF:6:TYR:H     | 12:AF:6:TYR:HD2   | 1.53                     | 0.55              |
| 17:AK:82:ASN:H    | 17:AK:82:ASN:ND2  | 2.02                     | 0.55              |
| 17:AK:121:GLU:O   | 17:AK:122:VAL:O   | 2.24                     | 0.55              |
| 21:AO:76:LYS:HD3  | 21:AO:110:ALA:HB2 | 1.88                     | 0.55              |
| 24:AR:39:LEU:O    | 24:AR:40:MET:HB2  | 2.07                     | 0.55              |
| 25:AS:68:ASP:C    | 25:AS:69:LEU:HD22 | 2.27                     | 0.55              |
| 30:AX:31:GLN:O    | 30:AX:33:ALA:N    | 2.40                     | 0.55              |
| 30:AX:35:GLY:HA3  | 30:AX:40:SER:CA   | 2.37                     | 0.55              |
| 33:BA:199:A:H2'   | 33:BA:200:G:C8    | 2.40                     | 0.55              |
| 33:BA:215:C:H2'   | 33:BA:216:U:O4'   | 2.06                     | 0.55              |
| 33:BA:292:G:N2    | 33:BA:308:C:O2    | 2.38                     | 0.55              |
| 33:BA:309:A:N1    | 33:BA:310:G:C5    | 2.75                     | 0.55              |
| 33:BA:509:A:H2'   | 33:BA:510:A:O4'   | 2.07                     | 0.55              |
| 33:BA:851:G:C2    | 33:BA:852:G:N7    | 2.74                     | 0.55              |
| 33:BA:940:C:H2'   | 33:BA:941:G:O4'   | 2.06                     | 0.55              |
| 33:BA:1058:G:H2'  | 33:BA:1059:C:C6   | 2.41                     | 0.55              |
| 33:BA:1068:G:N7   | 33:BA:1094:G:C8   | 2.74                     | 0.55              |
| 33:BA:1131:G:H2'  | 33:BA:1132:C:H5'  | 1.88                     | 0.55              |
| 33:BA:1445:U:H1'  | 33:BA:1458:G:H22  | 1.71                     | 0.55              |
| 37:BE:110:MET:H   | 37:BE:110:MET:CE  | 2.19                     | 0.55              |
| 46:BN:78:LEU:HD13 | 46:BN:82:LYS:HB3  | 1.88                     | 0.55              |
| 46:BN:97:LYS:O    | 46:BN:98:ALA:CB   | 2.54                     | 0.55              |
| 47:BO:16:ARG:NH1  | 47:BO:76:ARG:HH11 | 2.04                     | 0.55              |
| 48:BP:12:LYS:O    | 48:BP:13:LYS:HB2  | 2.05                     | 0.55              |
| 49:BQ:10:ARG:O    | 49:BQ:22:VAL:HA   | 2.05                     | 0.55              |
| 51:BS:39:ILE:HD12 | 51:BS:65:MET:SD   | 2.47                     | 0.55              |
| 52:BT:23:ARG:O    | 52:BT:26:MET:HB3  | 2.05                     | 0.55              |
| 4:C3:32:LEU:HD13  | 4:C3:33:THR:HA    | 1.88                     | 0.55              |
| 4:C3:32:LEU:O     | 4:C3:33:THR:O     | 2.24                     | 0.55              |
| 8:CB:123:G:C2     | 8:CB:124:G:C8     | 2.95                     | 0.55              |
| 8:CB:428:A:H2'    | 8:CB:429:A:C8     | 2.41                     | 0.55              |
| 8:CB:554:U:H2'    | 8:CB:555:G:H8     | 1.71                     | 0.55              |
| 8:CB:571:U:C2     | 8:CB:2030:A:C2    | 2.94                     | 0.55              |
| 8:CB:687:C:C4     | 8:CB:688:U:N3     | 2.75                     | 0.55              |
| 8:CB:872:U:H3     | 8:CB:873:C:N4     | 2.04                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:933:A:C8      | 8:CB:933:A:H3'     | 2.40                     | 0.55              |
| 8:CB:1000:A:C6     | 8:CB:1001:A:C5     | 2.94                     | 0.55              |
| 8:CB:1214:A:H2'    | 8:CB:1215:G:C8     | 2.42                     | 0.55              |
| 8:CB:1351:C:O4'    | 8:CB:1572:A:H1'    | 2.06                     | 0.55              |
| 8:CB:1765:U:O2     | 8:CB:1766:G:H8     | 1.85                     | 0.55              |
| 8:CB:1809:A:C2'    | 8:CB:1810:A:H8     | 2.18                     | 0.55              |
| 8:CB:1905:C:N4     | 8:CB:1930:G:C2     | 2.74                     | 0.55              |
| 8:CB:2205:A:C2     | 8:CB:2206:C:C2     | 2.95                     | 0.55              |
| 8:CB:2243:U:O2     | 8:CB:2434:A:C2     | 2.59                     | 0.55              |
| 8:CB:2290:G:C5     | 8:CB:2291:U:C5     | 2.95                     | 0.55              |
| 8:CB:2331:G:C1'    | 29:CW:69:GLU:HG3   | 2.35                     | 0.55              |
| 8:CB:2351:G:O2'    | 8:CB:2352:A:H5''   | 2.06                     | 0.55              |
| 8:CB:2404:U:O2     | 8:CB:2404:U:H2'    | 2.06                     | 0.55              |
| 8:CB:2604:U:C2     | 8:CB:2605:U:C6     | 2.95                     | 0.55              |
| 8:CB:2625:G:H5''   | 8:CB:2625:G:H8     | 1.71                     | 0.55              |
| 8:CB:2739:U:H5     | 8:CB:2763:G:C4     | 2.24                     | 0.55              |
| 8:CB:2835:A:C8     | 8:CB:2879:A:N1     | 2.74                     | 0.55              |
| 9:CC:153:LEU:HD11  | 9:CC:159:THR:HB    | 1.89                     | 0.55              |
| 10:CD:32:ASN:O     | 10:CD:34:VAL:N     | 2.35                     | 0.55              |
| 10:CD:122:VAL:C    | 10:CD:128:ARG:HH21 | 2.10                     | 0.55              |
| 11:CE:1:MET:HB2    | 11:CE:18:THR:HG21  | 1.88                     | 0.55              |
| 11:CE:17:THR:HG21  | 11:CE:196:VAL:CG1  | 2.35                     | 0.55              |
| 15:CI:126:ARG:HA   | 15:CI:129:GLU:CB   | 2.35                     | 0.55              |
| 17:CK:70:ARG:HB2   | 17:CK:75:SER:O     | 2.06                     | 0.55              |
| 19:CM:50:ARG:HA    | 19:CM:50:ARG:NE    | 2.20                     | 0.55              |
| 22:CP:61:ARG:CZ    | 22:CP:61:ARG:CB    | 2.84                     | 0.55              |
| 22:CP:64:SER:CB    | 22:CP:71:ARG:HH11  | 2.19                     | 0.55              |
| 23:CQ:40:LYS:HD3   | 23:CQ:44:TYR:HB2   | 1.88                     | 0.55              |
| 26:CT:8:LEU:HD11   | 30:CX:26:PHE:CE2   | 2.41                     | 0.55              |
| 29:CW:75:ASN:CG    | 29:CW:76:ARG:N     | 2.60                     | 0.55              |
| 33:DA:355:C:C2'    | 33:DA:356:A:H8     | 2.13                     | 0.55              |
| 33:DA:518:C:C6     | 33:DA:529:G:C6     | 2.95                     | 0.55              |
| 33:DA:759:A:H4'    | 33:DA:881:G:H5''   | 1.88                     | 0.55              |
| 33:DA:874:G:C2     | 33:DA:875:U:H1'    | 2.42                     | 0.55              |
| 33:DA:1246:A:C6    | 33:DA:1247:U:C2    | 2.95                     | 0.55              |
| 34:DB:113:LEU:HD12 | 34:DB:147:LEU:HD13 | 1.88                     | 0.55              |
| 36:DD:144:ILE:HD13 | 36:DD:154:VAL:HG21 | 1.87                     | 0.55              |
| 37:DE:104:ILE:HD13 | 37:DE:104:ILE:O    | 2.07                     | 0.55              |
| 39:DG:70:PRO:HD3   | 39:DG:102:TRP:CZ3  | 2.41                     | 0.55              |
| 41:DI:84:ARG:HA    | 41:DI:94:ARG:HH21  | 1.70                     | 0.55              |
| 43:DK:23:HIS:HB3   | 43:DK:30:ILE:CD1   | 2.37                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 47:DO:57:ARG:HA   | 47:DO:60:SER:HB2  | 1.88                     | 0.55              |
| 48:DP:61:VAL:HG13 | 48:DP:65:ALA:O    | 2.06                     | 0.55              |
| 49:DQ:10:ARG:HG3  | 49:DQ:11:VAL:N    | 2.21                     | 0.55              |
| 2:A1:46:VAL:CG1   | 2:A1:47:ILE:HG13  | 2.34                     | 0.55              |
| 5:A4:8:LYS:HB2    | 5:A4:9:LYS:HD3    | 1.88                     | 0.55              |
| 7:AA:11:C:C2'     | 7:AA:12:C:H5'     | 2.37                     | 0.55              |
| 8:AB:211:C:O2'    | 8:AB:212:G:H5'    | 2.07                     | 0.55              |
| 8:AB:310:A:OP1    | 27:AU:18:LYS:HE2  | 2.06                     | 0.55              |
| 8:AB:326:G:H2'    | 8:AB:327:G:O4'    | 2.05                     | 0.55              |
| 8:AB:440:C:C6     | 8:AB:440:C:C3'    | 2.90                     | 0.55              |
| 8:AB:458:G:N2     | 8:AB:469:G:N3     | 2.54                     | 0.55              |
| 8:AB:560:C:O2     | 8:AB:560:C:H2'    | 2.07                     | 0.55              |
| 8:AB:755:U:H2'    | 8:AB:756:A:C8     | 2.41                     | 0.55              |
| 8:AB:839:U:H2'    | 8:AB:840:C:C5     | 2.41                     | 0.55              |
| 8:AB:1003:G:N2    | 8:AB:1153:C:C4    | 2.74                     | 0.55              |
| 8:AB:1056:G:H5''  | 8:AB:1057:A:H5'   | 1.88                     | 0.55              |
| 8:AB:1519:G:H5'   | 8:AB:1520:U:OP2   | 2.06                     | 0.55              |
| 8:AB:1584:U:H2'   | 8:AB:1584:U:O2    | 2.06                     | 0.55              |
| 8:AB:1648:U:C2    | 8:AB:2010:G:N2    | 2.75                     | 0.55              |
| 8:AB:1771:C:N4    | 8:AB:1772:A:N6    | 2.54                     | 0.55              |
| 8:AB:1796:U:C2'   | 8:AB:1797:G:H5'   | 2.37                     | 0.55              |
| 8:AB:1890:A:H2    | 8:AB:2234:G:N3    | 2.05                     | 0.55              |
| 8:AB:2243:U:C2    | 8:AB:2244:U:C5    | 2.94                     | 0.55              |
| 8:AB:2593:U:O4    | 9:AC:235:GLU:OE2  | 2.25                     | 0.55              |
| 9:AC:61:TYR:CD2   | 9:AC:84:PRO:HD3   | 2.42                     | 0.55              |
| 9:AC:161:VAL:N    | 9:AC:193:GLU:CD   | 2.59                     | 0.55              |
| 9:AC:254:LYS:NZ   | 9:AC:254:LYS:N    | 2.54                     | 0.55              |
| 11:AE:138:LEU:O   | 11:AE:139:LYS:HE2 | 2.07                     | 0.55              |
| 19:AM:16:ARG:O    | 19:AM:17:ASN:CB   | 2.55                     | 0.55              |
| 20:AN:115:LEU:H   | 20:AN:115:LEU:CD2 | 2.17                     | 0.55              |
| 21:AO:86:GLY:HA2  | 21:AO:89:ASP:HB2  | 1.88                     | 0.55              |
| 22:AP:71:ARG:HH21 | 22:AP:102:ARG:HB3 | 1.71                     | 0.55              |
| 25:AS:24:ILE:O    | 25:AS:25:ARG:HB3  | 2.07                     | 0.55              |
| 30:AX:14:LEU:CB   | 30:AX:53:VAL:HG13 | 2.36                     | 0.55              |
| 33:BA:11:G:C5     | 33:BA:12:U:C5     | 2.95                     | 0.55              |
| 33:BA:433:G:C6    | 33:BA:434:U:N3    | 2.75                     | 0.55              |
| 33:BA:827:U:C4    | 33:BA:870:U:C2    | 2.95                     | 0.55              |
| 33:BA:1116:U:H6   | 33:BA:1116:U:O5'  | 1.88                     | 0.55              |
| 33:BA:1131:G:H8   | 33:BA:1131:G:O5'  | 1.89                     | 0.55              |
| 33:BA:1193:G:C2   | 33:BA:1194:U:C6   | 2.94                     | 0.55              |
| 33:BA:1431:A:H2'  | 33:BA:1432:G:H5'' | 1.88                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BC:27:GLU:HG2  | 35:BC:28:PHE:H    | 1.72                     | 0.55              |
| 38:BF:18:VAL:N    | 38:BF:19:PRO:HD2  | 2.22                     | 0.55              |
| 39:BG:148:LYS:HA  | 39:BG:151:ALA:HB3 | 1.89                     | 0.55              |
| 45:BM:15:VAL:HG23 | 45:BM:33:LEU:CD1  | 2.29                     | 0.55              |
| 47:BO:84:LEU:O    | 47:BO:86:LEU:HD12 | 2.07                     | 0.55              |
| 1:C0:41:HIS:CD2   | 1:C0:46:GLY:CA    | 2.89                     | 0.55              |
| 8:CB:39:G:C4      | 8:CB:40:U:C5      | 2.94                     | 0.55              |
| 8:CB:131:A:N6     | 8:CB:132:G:O6     | 2.39                     | 0.55              |
| 8:CB:158:U:C2'    | 8:CB:159:G:H5'    | 2.34                     | 0.55              |
| 8:CB:223:A:N7     | 8:CB:422:A:N9     | 2.54                     | 0.55              |
| 8:CB:302:C:HO2'   | 8:CB:303:G:H8     | 0.71                     | 0.55              |
| 8:CB:338:G:H5''   | 8:CB:338:G:C8     | 2.31                     | 0.55              |
| 8:CB:373:U:N3     | 8:CB:374:A:N7     | 2.54                     | 0.55              |
| 8:CB:424:G:C2     | 8:CB:425:G:C8     | 2.94                     | 0.55              |
| 8:CB:857:G:H2'    | 8:CB:858:G:O4'    | 2.07                     | 0.55              |
| 8:CB:873:C:C6     | 8:CB:874:G:N7     | 2.75                     | 0.55              |
| 8:CB:957:C:N4     | 8:CB:2459:A:C8    | 2.74                     | 0.55              |
| 8:CB:1009:A:H5'   | 23:CQ:58:GLN:OE1  | 2.06                     | 0.55              |
| 8:CB:1028:A:C6    | 8:CB:2487:G:O2'   | 2.59                     | 0.55              |
| 8:CB:1647:U:H3'   | 8:CB:1647:U:P     | 2.46                     | 0.55              |
| 8:CB:2047:C:H2'   | 8:CB:2048:G:H8    | 1.69                     | 0.55              |
| 8:CB:2064:C:H1'   | 8:CB:2450:A:C5    | 2.41                     | 0.55              |
| 8:CB:2519:U:OP1   | 8:CB:2519:U:H3'   | 2.06                     | 0.55              |
| 8:CB:2587:A:H5''  | 8:CB:2587:A:H8    | 1.71                     | 0.55              |
| 8:CB:2593:U:C2'   | 8:CB:2594:C:H5''  | 2.37                     | 0.55              |
| 8:CB:2819:G:C6    | 8:CB:2821:A:C2    | 2.94                     | 0.55              |
| 12:CF:10:GLU:HA   | 12:CF:13:LYS:HB2  | 1.88                     | 0.55              |
| 13:CG:3:VAL:O     | 13:CG:4:ALA:CB    | 2.53                     | 0.55              |
| 14:CH:95:GLY:HA2  | 14:CH:99:ILE:HG23 | 1.87                     | 0.55              |
| 16:CJ:25:LEU:H    | 16:CJ:62:VAL:HG12 | 1.72                     | 0.55              |
| 16:CJ:65:THR:OG1  | 16:CJ:66:GLY:N    | 2.38                     | 0.55              |
| 18:CL:33:ARG:CZ   | 18:CL:33:ARG:CB   | 2.80                     | 0.55              |
| 19:CM:22:GLN:HA   | 19:CM:97:GLN:HE22 | 1.72                     | 0.55              |
| 19:CM:25:ASP:OD2  | 19:CM:25:ASP:C    | 2.45                     | 0.55              |
| 22:CP:103:THR:O   | 22:CP:105:LYS:HG2 | 2.06                     | 0.55              |
| 27:CU:57:ILE:O    | 27:CU:57:ILE:CG2  | 2.54                     | 0.55              |
| 33:DA:9:G:H2'     | 33:DA:10:A:H8     | 1.71                     | 0.55              |
| 33:DA:17:U:O2'    | 33:DA:18:C:C5'    | 2.55                     | 0.55              |
| 33:DA:38:G:N2     | 33:DA:397:A:C4    | 2.75                     | 0.55              |
| 33:DA:279:A:H5'   | 33:DA:281:G:O4'   | 2.07                     | 0.55              |
| 33:DA:355:C:C4    | 33:DA:356:A:N7    | 2.74                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:391:G:C2    | 33:DA:392:C:H1'    | 2.41                     | 0.55              |
| 33:DA:411:A:H2'   | 33:DA:412:A:H4'    | 1.88                     | 0.55              |
| 33:DA:417:G:C5    | 33:DA:418:C:C5     | 2.95                     | 0.55              |
| 33:DA:423:G:N2    | 33:DA:424:G:N7     | 2.54                     | 0.55              |
| 33:DA:482:A:H2'   | 33:DA:482:A:N3     | 2.22                     | 0.55              |
| 33:DA:491:G:H2'   | 33:DA:492:C:H6     | 1.71                     | 0.55              |
| 33:DA:860:A:H8    | 33:DA:860:A:O5'    | 1.89                     | 0.55              |
| 33:DA:861:G:H3'   | 33:DA:861:G:C8     | 2.42                     | 0.55              |
| 33:DA:889:A:N3    | 33:DA:891:U:O4     | 2.40                     | 0.55              |
| 33:DA:918:A:C6    | 33:DA:919:A:C6     | 2.94                     | 0.55              |
| 33:DA:1157:A:H62  | 33:DA:1177:G:N2    | 2.04                     | 0.55              |
| 33:DA:1250:A:C8   | 33:DA:1287:A:N7    | 2.74                     | 0.55              |
| 33:DA:1408:A:C2   | 33:DA:1494:G:C6    | 2.95                     | 0.55              |
| 33:DA:1475:G:H2'  | 33:DA:1476:A:C5'   | 2.36                     | 0.55              |
| 34:DB:95:TRP:CH2  | 34:DB:100:LEU:HD13 | 2.42                     | 0.55              |
| 35:DC:55:VAL:O    | 35:DC:56:ILE:HG13  | 2.07                     | 0.55              |
| 35:DC:65:VAL:HG23 | 35:DC:100:ILE:H    | 1.70                     | 0.55              |
| 46:DN:12:ARG:CD   | 46:DN:58:ARG:HB3   | 2.36                     | 0.55              |
| 46:DN:99:SER:C    | 46:DN:100:TRP:HE3  | 2.10                     | 0.55              |
| 48:DP:68:SER:HB3  | 48:DP:71:VAL:CG1   | 2.36                     | 0.55              |
| 2:A1:9:LYS:NZ     | 4:A3:34:LYS:NZ     | 2.54                     | 0.55              |
| 4:A3:10:ALA:O     | 18:AL:66:PHE:CZ    | 2.59                     | 0.55              |
| 7:AA:44:G:H4'     | 7:AA:45:A:C8       | 2.42                     | 0.55              |
| 8:AB:92:U:H3'     | 8:AB:93:G:H8       | 1.71                     | 0.55              |
| 8:AB:382:A:C2     | 8:AB:383:C:N1      | 2.74                     | 0.55              |
| 8:AB:452:G:C2     | 8:AB:458:G:C8      | 2.94                     | 0.55              |
| 8:AB:617:G:H2'    | 8:AB:618:G:H8      | 1.71                     | 0.55              |
| 8:AB:764:A:C2     | 8:AB:781:A:C2      | 2.95                     | 0.55              |
| 8:AB:1231:U:O2'   | 8:AB:1232:G:H5'    | 2.07                     | 0.55              |
| 8:AB:1404:C:H2'   | 8:AB:1405:U:H6     | 1.72                     | 0.55              |
| 8:AB:1434:A:H2'   | 8:AB:1435:G:O5'    | 2.06                     | 0.55              |
| 8:AB:1789:A:C2'   | 8:AB:1790:C:H5'    | 2.36                     | 0.55              |
| 8:AB:1797:G:O2'   | 9:AC:254:LYS:NZ    | 2.38                     | 0.55              |
| 8:AB:1824:G:H1'   | 9:AC:247:TRP:CZ3   | 2.39                     | 0.55              |
| 8:AB:1889:A:H8    | 8:AB:1889:A:O5'    | 1.90                     | 0.55              |
| 8:AB:1959:G:N1    | 8:AB:1960:A:C4     | 2.74                     | 0.55              |
| 8:AB:2082:A:N6    | 8:AB:2237:G:H1'    | 2.21                     | 0.55              |
| 8:AB:2345:G:C2    | 8:AB:2381:A:C5     | 2.93                     | 0.55              |
| 8:AB:2466:C:H1'   | 19:AM:118:LYS:NZ   | 2.22                     | 0.55              |
| 8:AB:2719:G:H5''  | 8:AB:2719:G:H8     | 1.71                     | 0.55              |
| 9:AC:136:VAL:HA   | 9:AC:165:ALA:C     | 2.27                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:AD:128:ARG:NH1 | 10:AD:142:VAL:HB  | 2.21                     | 0.55              |
| 13:AG:74:MET:O    | 13:AG:78:VAL:HG22 | 2.07                     | 0.55              |
| 14:AH:26:ALA:C    | 14:AH:28:ASN:N    | 2.58                     | 0.55              |
| 16:AJ:85:LYS:NZ   | 16:AJ:86:GLN:H    | 2.04                     | 0.55              |
| 18:AL:76:GLU:O    | 18:AL:78:ARG:N    | 2.39                     | 0.55              |
| 18:AL:78:ARG:HB2  | 18:AL:99:ASN:ND2  | 2.21                     | 0.55              |
| 20:AN:69:ARG:O    | 20:AN:70:THR:HB   | 2.06                     | 0.55              |
| 21:AO:25:ARG:CG   | 21:AO:25:ARG:NH1  | 2.54                     | 0.55              |
| 22:AP:42:PHE:O    | 22:AP:42:PHE:HD1  | 1.90                     | 0.55              |
| 23:AQ:82:LEU:O    | 23:AQ:85:ALA:HB3  | 2.07                     | 0.55              |
| 27:AU:35:VAL:HG12 | 27:AU:36:GLU:N    | 2.20                     | 0.55              |
| 33:BA:355:C:H2'   | 33:BA:356:A:O4'   | 2.06                     | 0.55              |
| 33:BA:355:C:N4    | 33:BA:356:A:H62   | 2.05                     | 0.55              |
| 33:BA:409:U:H2'   | 33:BA:410:G:O4'   | 2.06                     | 0.55              |
| 33:BA:601:G:O2'   | 33:BA:602:A:H5'   | 2.07                     | 0.55              |
| 33:BA:675:A:C4    | 33:BA:676:A:C8    | 2.94                     | 0.55              |
| 33:BA:683:G:C2'   | 33:BA:684:U:H5'   | 2.37                     | 0.55              |
| 33:BA:712:A:C8    | 33:BA:712:A:C5'   | 2.88                     | 0.55              |
| 33:BA:1131:G:C2'  | 33:BA:1132:C:H5'  | 2.36                     | 0.55              |
| 33:BA:1181:G:C2   | 33:BA:1182:G:C2   | 2.94                     | 0.55              |
| 33:BA:1307:U:C5'  | 45:BM:99:GLN:HE22 | 2.18                     | 0.55              |
| 34:BB:90:PHE:CD2  | 34:BB:149:GLY:HA3 | 2.41                     | 0.55              |
| 35:BC:155:ARG:HG2 | 35:BC:192:TYR:HD1 | 1.70                     | 0.55              |
| 36:BD:80:ARG:HH11 | 36:BD:80:ARG:CB   | 2.19                     | 0.55              |
| 38:BF:91:ARG:HD2  | 38:BF:92:THR:CG2  | 2.36                     | 0.55              |
| 42:BJ:93:ALA:HB1  | 42:BJ:96:VAL:HG23 | 1.88                     | 0.55              |
| 44:BL:113:ARG:NH2 | 44:BL:120:ARG:HB2 | 2.22                     | 0.55              |
| 47:BO:57:ARG:HA   | 47:BO:60:SER:HB2  | 1.88                     | 0.55              |
| 49:BQ:57:VAL:HB   | 49:BQ:79:GLU:CB   | 2.37                     | 0.55              |
| 50:BR:41:SER:HB2  | 50:BR:51:GLN:CG   | 2.37                     | 0.55              |
| 3:C2:19:ARG:HG2   | 8:CB:125:A:OP2    | 2.07                     | 0.55              |
| 7:CA:7:G:H4'      | 21:CO:29:HIS:CD2  | 2.41                     | 0.55              |
| 8:CB:124:G:H5'    | 8:CB:124:G:H8     | 1.68                     | 0.55              |
| 8:CB:307:G:C2     | 8:CB:310:A:OP2    | 2.60                     | 0.55              |
| 8:CB:324:A:C8     | 8:CB:324:A:H3'    | 2.42                     | 0.55              |
| 8:CB:419:U:C2     | 8:CB:420:C:C5     | 2.94                     | 0.55              |
| 8:CB:795:C:N3     | 8:CB:796:C:C4     | 2.74                     | 0.55              |
| 8:CB:834:G:H1'    | 8:CB:2358:A:H1'   | 1.89                     | 0.55              |
| 8:CB:983:A:H2'    | 8:CB:984:A:N7     | 2.21                     | 0.55              |
| 8:CB:1004:U:O4'   | 8:CB:1010:A:C6    | 2.60                     | 0.55              |
| 8:CB:1010:A:C8    | 8:CB:1010:A:C3'   | 2.90                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1211:C:H4'   | 8:CB:1212:G:OP2   | 2.05                     | 0.55              |
| 8:CB:1358:G:N7    | 8:CB:1371:G:O6    | 2.40                     | 0.55              |
| 8:CB:1359:A:N3    | 8:CB:1360:G:H1'   | 2.20                     | 0.55              |
| 8:CB:1651:G:C6    | 8:CB:1652:A:C6    | 2.94                     | 0.55              |
| 8:CB:1664:A:H2'   | 8:CB:1665:A:C8    | 2.41                     | 0.55              |
| 8:CB:1707:G:C8    | 8:CB:1756:G:C5    | 2.94                     | 0.55              |
| 8:CB:1783:A:C2    | 8:CB:2587:A:C6    | 2.93                     | 0.55              |
| 8:CB:1816:C:C5    | 9:CC:62:ARG:HD2   | 2.34                     | 0.55              |
| 8:CB:1997:C:O2'   | 8:CB:1998:A:C5'   | 2.54                     | 0.55              |
| 8:CB:2001:C:H2'   | 8:CB:2002:G:O5'   | 2.07                     | 0.55              |
| 8:CB:2244:U:C2    | 8:CB:2245:U:C5    | 2.95                     | 0.55              |
| 8:CB:2681:C:H4'   | 8:CB:2682:A:H5'   | 1.89                     | 0.55              |
| 8:CB:2807:U:C2    | 8:CB:2892:G:N2    | 2.75                     | 0.55              |
| 10:CD:208:LYS:HG2 | 10:CD:208:LYS:O   | 2.07                     | 0.55              |
| 11:CE:67:ARG:H    | 11:CE:67:ARG:CD   | 2.20                     | 0.55              |
| 13:CG:126:THR:O   | 13:CG:128:THR:N   | 2.37                     | 0.55              |
| 13:CG:147:LEU:C   | 13:CG:149:ALA:N   | 2.59                     | 0.55              |
| 15:CI:14:ALA:CB   | 15:CI:51:GLY:H    | 2.20                     | 0.55              |
| 15:CI:27:LEU:HD21 | 15:CI:34:ILE:HG23 | 1.89                     | 0.55              |
| 19:CM:42:THR:O    | 19:CM:44:ARG:N    | 2.40                     | 0.55              |
| 19:CM:61:GLY:CA   | 19:CM:105:MET:SD  | 2.95                     | 0.55              |
| 23:CQ:47:ARG:HH11 | 23:CQ:50:ARG:HG3  | 1.65                     | 0.55              |
| 24:CR:4:VAL:HG12  | 24:CR:43:ASN:HB3  | 1.88                     | 0.55              |
| 24:CR:6:GLN:HA    | 24:CR:10:LYS:CA   | 2.36                     | 0.55              |
| 27:CU:57:ILE:HG23 | 27:CU:57:ILE:O    | 2.06                     | 0.55              |
| 32:CZ:3:LYS:C     | 32:CZ:5:ILE:H     | 2.08                     | 0.55              |
| 33:DA:107:G:H5''  | 33:DA:108:G:OP2   | 2.06                     | 0.55              |
| 33:DA:292:G:N7    | 33:DA:293:G:H1'   | 2.21                     | 0.55              |
| 33:DA:299:G:H2'   | 33:DA:300:A:C8    | 2.41                     | 0.55              |
| 33:DA:522:C:H1'   | 33:DA:536:C:H5''  | 1.87                     | 0.55              |
| 33:DA:619:U:H3    | 36:DD:130:ASN:ND2 | 2.04                     | 0.55              |
| 33:DA:687:A:C2    | 33:DA:704:A:C6    | 2.94                     | 0.55              |
| 33:DA:1418:A:N7   | 33:DA:1419:G:C1'  | 2.69                     | 0.55              |
| 36:DD:33:ILE:O    | 36:DD:34:GLU:HB3  | 2.06                     | 0.55              |
| 36:DD:40:HIS:HB3  | 36:DD:43:ARG:HD3  | 1.87                     | 0.55              |
| 40:DH:49:LYS:CB   | 40:DH:59:GLU:HB2  | 2.37                     | 0.55              |
| 43:DK:63:GLN:HG2  | 43:DK:98:ALA:CB   | 2.37                     | 0.55              |
| 1:A0:21:LEU:H     | 1:A0:21:LEU:CD1   | 2.10                     | 0.55              |
| 3:A2:21:ARG:HE    | 3:A2:30:VAL:HG21  | 1.71                     | 0.55              |
| 4:A3:35:LYS:H     | 4:A3:35:LYS:CD    | 2.14                     | 0.55              |
| 8:AB:49:A:C6      | 8:AB:118:A:C2     | 2.94                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:407:G:N2     | 8:AB:421:C:C6     | 2.75                     | 0.55              |
| 8:AB:471:A:N6     | 8:AB:472:A:C2     | 2.74                     | 0.55              |
| 8:AB:501:A:N6     | 8:AB:502:A:C6     | 2.74                     | 0.55              |
| 8:AB:662:G:O2'    | 8:AB:663:G:H5'    | 2.06                     | 0.55              |
| 8:AB:794:A:O2'    | 8:AB:795:C:H5'    | 2.07                     | 0.55              |
| 8:AB:985:C:C2'    | 8:AB:986:C:H5''   | 2.37                     | 0.55              |
| 8:AB:1084:A:N7    | 8:AB:1085:A:N7    | 2.55                     | 0.55              |
| 8:AB:1531:C:O5'   | 8:AB:1531:C:H6    | 1.89                     | 0.55              |
| 8:AB:1668:A:C5    | 8:AB:1674:G:C5    | 2.94                     | 0.55              |
| 8:AB:1742:U:H2'   | 8:AB:1743:G:C8    | 2.42                     | 0.55              |
| 8:AB:1831:G:C4    | 8:AB:1832:C:C5    | 2.94                     | 0.55              |
| 8:AB:2093:G:OP1   | 14:AH:24:GLY:HA3  | 2.06                     | 0.55              |
| 8:AB:2587:A:C8    | 8:AB:2587:A:C5'   | 2.89                     | 0.55              |
| 8:AB:2761:A:C5    | 8:AB:2762:C:H5    | 2.23                     | 0.55              |
| 8:AB:2774:C:H2'   | 8:AB:2775:G:O4'   | 2.07                     | 0.55              |
| 18:AL:78:ARG:NH2  | 18:AL:80:SER:HA   | 2.21                     | 0.55              |
| 18:AL:82:LEU:CD2  | 18:AL:86:GLU:HG3  | 2.31                     | 0.55              |
| 30:AX:4:LYS:HA    | 30:AX:7:ARG:NE    | 2.22                     | 0.55              |
| 33:BA:17:U:O2'    | 33:BA:18:C:H5'    | 2.05                     | 0.55              |
| 33:BA:26:A:H2     | 36:BD:205:LYS:CB  | 2.19                     | 0.55              |
| 33:BA:87:C:H2'    | 33:BA:88:U:O4'    | 2.07                     | 0.55              |
| 33:BA:147:G:H2'   | 33:BA:148:G:C8    | 2.41                     | 0.55              |
| 33:BA:350:G:C5'   | 33:BA:350:G:C8    | 2.89                     | 0.55              |
| 33:BA:356:A:H2'   | 33:BA:357:G:C8    | 2.42                     | 0.55              |
| 33:BA:542:G:N2    | 33:BA:543:U:C2    | 2.74                     | 0.55              |
| 33:BA:786:G:C2    | 33:BA:787:A:C4    | 2.95                     | 0.55              |
| 33:BA:859:G:N1    | 33:BA:860:A:C2    | 2.75                     | 0.55              |
| 33:BA:1068:G:N2   | 33:BA:1069:C:C2   | 2.75                     | 0.55              |
| 33:BA:1169:A:H2'  | 33:BA:1170:A:O4'  | 2.07                     | 0.55              |
| 33:BA:1356:G:N2   | 33:BA:1357:A:C2   | 2.75                     | 0.55              |
| 37:BE:55:VAL:H    | 37:BE:56:PRO:HD2  | 1.72                     | 0.55              |
| 38:BF:64:VAL:HG12 | 38:BF:65:GLU:N    | 2.17                     | 0.55              |
| 44:BL:106:VAL:CG2 | 44:BL:116:TYR:HB3 | 2.37                     | 0.55              |
| 45:BM:48:SER:H    | 45:BM:51:GLN:HB2  | 1.72                     | 0.55              |
| 50:BR:21:ASP:OD2  | 50:BR:23:LYS:HE2  | 2.06                     | 0.55              |
| 50:BR:56:ARG:O    | 50:BR:60:ARG:HG2  | 2.06                     | 0.55              |
| 52:BT:24:ARG:HH12 | 52:BT:65:LEU:HD22 | 1.70                     | 0.55              |
| 1:C0:13:GLY:O     | 1:C0:17:SER:N     | 2.36                     | 0.55              |
| 1:C0:20:ALA:CA    | 1:C0:21:LEU:HD12  | 2.36                     | 0.55              |
| 2:C1:14:ALA:HA    | 2:C1:48:TYR:CD2   | 2.42                     | 0.55              |
| 7:CA:31:C:N4      | 21:CO:32:PRO:HB3  | 2.21                     | 0.55              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:CA:113:C:H2'     | 7:CA:114:C:H5'     | 1.87                     | 0.55              |
| 8:CB:160:A:N1      | 8:CB:161:A:C6      | 2.75                     | 0.55              |
| 8:CB:246:C:C5      | 8:CB:247:G:N7      | 2.75                     | 0.55              |
| 8:CB:622:G:C2      | 8:CB:623:C:C2      | 2.95                     | 0.55              |
| 8:CB:699:A:O3'     | 8:CB:1554:U:C5     | 2.58                     | 0.55              |
| 8:CB:792:A:C6      | 8:CB:2440:C:C5     | 2.94                     | 0.55              |
| 8:CB:797:G:C2      | 8:CB:798:G:H1'     | 2.41                     | 0.55              |
| 8:CB:1232:G:C4     | 8:CB:1233:C:C6     | 2.94                     | 0.55              |
| 8:CB:1378:A:N7     | 8:CB:1380:G:C5     | 2.75                     | 0.55              |
| 8:CB:1584:U:H2'    | 8:CB:1584:U:O2     | 2.07                     | 0.55              |
| 8:CB:1708:C:C2'    | 8:CB:1709:U:H6     | 2.19                     | 0.55              |
| 8:CB:1901:A:O2'    | 8:CB:1902:C:H5'    | 2.06                     | 0.55              |
| 8:CB:1973:G:H3'    | 8:CB:1973:G:C8     | 2.42                     | 0.55              |
| 8:CB:2148:G:H5''   | 8:CB:2149:U:OP1    | 2.06                     | 0.55              |
| 8:CB:2199:A:C6     | 8:CB:2200:C:O2     | 2.59                     | 0.55              |
| 8:CB:2259:U:N3     | 8:CB:2260:C:C5     | 2.75                     | 0.55              |
| 8:CB:2396:G:C8     | 8:CB:2396:G:C5'    | 2.90                     | 0.55              |
| 8:CB:2415:G:C4'    | 18:CL:66:PHE:CD2   | 2.90                     | 0.55              |
| 8:CB:2464:G:C4     | 8:CB:2487:G:N2     | 2.74                     | 0.55              |
| 8:CB:2867:G:O6     | 22:CP:96:LEU:HD21  | 2.05                     | 0.55              |
| 11:CE:123:LYS:HE3  | 11:CE:157:LEU:HG   | 1.88                     | 0.55              |
| 12:CF:6:TYR:HD2    | 12:CF:6:TYR:H      | 1.53                     | 0.55              |
| 12:CF:140:ILE:HG22 | 12:CF:142:TYR:H    | 1.71                     | 0.55              |
| 18:CL:123:ARG:HB2  | 18:CL:143:GLU:OE2  | 2.07                     | 0.55              |
| 19:CM:123:LYS:HB3  | 19:CM:123:LYS:NZ   | 2.22                     | 0.55              |
| 21:CO:104:GLN:O    | 21:CO:107:ALA:N    | 2.40                     | 0.55              |
| 23:CQ:70:GLN:HE22  | 23:CQ:106:THR:HA   | 1.71                     | 0.55              |
| 24:CR:72:VAL:C     | 24:CR:73:LYS:HD2   | 2.27                     | 0.55              |
| 24:CR:80:ARG:CD    | 24:CR:86:GLN:H     | 2.20                     | 0.55              |
| 25:CS:66:ILE:C     | 25:CS:68:ASP:H     | 2.10                     | 0.55              |
| 33:DA:227:G:C4     | 33:DA:228:A:C8     | 2.95                     | 0.55              |
| 33:DA:619:U:O2'    | 33:DA:620:C:H5'    | 2.06                     | 0.55              |
| 33:DA:696:A:H2'    | 33:DA:697:U:C6     | 2.41                     | 0.55              |
| 33:DA:794:A:H4'    | 33:DA:1521:C:O2'   | 2.06                     | 0.55              |
| 33:DA:881:G:C2     | 33:DA:882:C:C6     | 2.95                     | 0.55              |
| 33:DA:1084:G:C5    | 33:DA:1085:U:C5    | 2.95                     | 0.55              |
| 35:DC:160:GLU:C    | 35:DC:161:ILE:HG13 | 2.27                     | 0.55              |
| 36:DD:51:GLY:O     | 36:DD:55:ARG:HB2   | 2.07                     | 0.55              |
| 36:DD:96:ARG:HH11  | 36:DD:96:ARG:HG2   | 1.72                     | 0.55              |
| 37:DE:64:GLU:HG2   | 37:DE:68:ARG:HE    | 1.70                     | 0.55              |
| 37:DE:98:ALA:HB1   | 37:DE:102:THR:CG2  | 2.35                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:DH:77:VAL:HG21 | 40:DH:124:ILE:HD11 | 1.89                     | 0.55              |
| 44:DL:64:SER:HB2  | 44:DL:81:ILE:CD1   | 2.35                     | 0.55              |
| 45:DM:57:ASP:O    | 45:DM:60:ALA:HB3   | 2.07                     | 0.55              |
| 46:DN:30:ILE:CB   | 46:DN:44:VAL:HB    | 2.37                     | 0.55              |
| 49:DQ:10:ARG:NH1  | 49:DQ:11:VAL:HB    | 2.22                     | 0.55              |
| 52:DT:82:ILE:O    | 52:DT:85:LEU:HB3   | 2.07                     | 0.55              |
| 2:A1:42:VAL:O     | 2:A1:43:ARG:HB2    | 2.07                     | 0.55              |
| 4:A3:60:CYS:O     | 4:A3:61:LEU:O      | 2.24                     | 0.55              |
| 7:AA:66:A:N3      | 7:AA:108:A:C2      | 2.74                     | 0.55              |
| 8:AB:428:A:O2'    | 8:AB:429:A:H5'     | 2.07                     | 0.55              |
| 8:AB:751:A:C4     | 8:AB:789:A:C2      | 2.94                     | 0.55              |
| 8:AB:762:U:H4'    | 8:AB:763:G:O5'     | 2.07                     | 0.55              |
| 8:AB:768:G:C5     | 8:AB:769:U:N3      | 2.74                     | 0.55              |
| 8:AB:784:G:O4'    | 9:AC:225:ASN:OD1   | 2.24                     | 0.55              |
| 8:AB:965:C:H6     | 8:AB:965:C:H5''    | 1.72                     | 0.55              |
| 8:AB:1038:G:N2    | 8:AB:1118:C:C2     | 2.75                     | 0.55              |
| 8:AB:1049:C:H2'   | 8:AB:1050:A:H8     | 1.69                     | 0.55              |
| 8:AB:1107:G:C2'   | 8:AB:1108:U:H5'    | 2.37                     | 0.55              |
| 8:AB:1369:G:H1'   | 8:AB:1809:A:N1     | 2.21                     | 0.55              |
| 8:AB:1431:A:H2'   | 8:AB:1432:G:O4'    | 2.06                     | 0.55              |
| 8:AB:1476:U:H1'   | 8:AB:1732:C:O2     | 2.07                     | 0.55              |
| 8:AB:1764:C:C4    | 8:AB:1765:U:C5     | 2.95                     | 0.55              |
| 8:AB:1885:A:C2    | 8:AB:1886:U:C2     | 2.95                     | 0.55              |
| 8:AB:2052:A:C4'   | 10:AD:149:ASN:N    | 2.53                     | 0.55              |
| 8:AB:2243:U:O2    | 8:AB:2434:A:C2     | 2.59                     | 0.55              |
| 8:AB:2256:G:H21   | 8:AB:2257:U:H1'    | 1.71                     | 0.55              |
| 8:AB:2298:A:N1    | 8:AB:2299:U:O2     | 2.40                     | 0.55              |
| 8:AB:2542:A:H4'   | 8:AB:2543:G:H5''   | 1.89                     | 0.55              |
| 8:AB:2737:G:N2    | 8:AB:2768:U:C4     | 2.75                     | 0.55              |
| 10:AD:58:ASN:N    | 10:AD:58:ASN:HD22  | 2.05                     | 0.55              |
| 10:AD:83:ARG:O    | 10:AD:84:LEU:HB3   | 2.06                     | 0.55              |
| 10:AD:116:LYS:HB2 | 10:AD:165:MET:HB3  | 1.88                     | 0.55              |
| 15:AI:21:PRO:HB2  | 15:AI:22:PRO:CD    | 2.35                     | 0.55              |
| 15:AI:122:GLU:CB  | 15:AI:126:ARG:HH21 | 2.19                     | 0.55              |
| 22:AP:31:VAL:HA   | 22:AP:81:ASP:HB2   | 1.88                     | 0.55              |
| 26:AT:19:LYS:HE3  | 26:AT:84:TYR:OH    | 2.06                     | 0.55              |
| 26:AT:31:VAL:O    | 26:AT:32:LEU:HD12  | 2.07                     | 0.55              |
| 27:AU:69:VAL:HG13 | 27:AU:70:ALA:O     | 2.05                     | 0.55              |
| 29:AW:44:PHE:HE2  | 29:AW:80:SER:HA    | 1.72                     | 0.55              |
| 33:BA:105:G:C5    | 33:BA:106:C:C5     | 2.94                     | 0.55              |
| 33:BA:119:A:C8    | 33:BA:240:G:O6     | 2.60                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:299:G:H2'   | 33:BA:300:A:C8     | 2.42                     | 0.55              |
| 33:BA:331:G:O2'   | 52:BT:2:ASN:ND2    | 2.40                     | 0.55              |
| 33:BA:400:C:H2'   | 33:BA:401:C:O5'    | 2.06                     | 0.55              |
| 33:BA:465:A:N7    | 33:BA:468:A:C2     | 2.75                     | 0.55              |
| 33:BA:527:G:N2    | 33:BA:528:C:C2     | 2.74                     | 0.55              |
| 33:BA:865:A:H8    | 33:BA:865:A:C5'    | 2.20                     | 0.55              |
| 33:BA:1032:G:H5'' | 33:BA:1032:G:N3    | 2.22                     | 0.55              |
| 33:BA:1406:U:H2'  | 33:BA:1407:C:O4'   | 2.06                     | 0.55              |
| 33:BA:1499:A:N3   | 33:BA:1500:A:C8    | 2.74                     | 0.55              |
| 33:BA:1501:C:N4   | 33:BA:1504:G:C2    | 2.75                     | 0.55              |
| 33:BA:1510:C:N4   | 33:BA:1525:G:H1    | 2.02                     | 0.55              |
| 36:BD:48:SER:HB3  | 36:BD:51:GLY:CA    | 2.35                     | 0.55              |
| 36:BD:60:VAL:O    | 36:BD:64:TYR:CD1   | 2.59                     | 0.55              |
| 36:BD:201:GLU:OE2 | 37:BE:104:ILE:HG23 | 2.06                     | 0.55              |
| 37:BE:136:VAL:O   | 37:BE:140:ILE:HG13 | 2.07                     | 0.55              |
| 38:BF:67:PRO:HG2  | 38:BF:70:VAL:HG13  | 1.89                     | 0.55              |
| 41:BI:79:ARG:O    | 41:BI:83:THR:HG22  | 2.07                     | 0.55              |
| 1:C0:5:ASN:HD21   | 8:CB:2019:A:N6     | 2.03                     | 0.55              |
| 7:CA:45:A:C5      | 7:CA:46:A:C8       | 2.95                     | 0.55              |
| 7:CA:56:G:C8      | 7:CA:56:G:C5'      | 2.90                     | 0.55              |
| 8:CB:67:U:C2      | 8:CB:68:G:N7       | 2.74                     | 0.55              |
| 8:CB:598:U:H5'    | 18:CL:21:ARG:CG    | 2.30                     | 0.55              |
| 8:CB:714:U:H2'    | 8:CB:716:A:N7      | 2.21                     | 0.55              |
| 8:CB:969:G:H21    | 8:CB:985:C:P       | 2.29                     | 0.55              |
| 8:CB:1334:G:C6    | 8:CB:1335:C:N3     | 2.74                     | 0.55              |
| 8:CB:1345:C:H3'   | 8:CB:1345:C:C6     | 2.42                     | 0.55              |
| 8:CB:1392:A:C5    | 8:CB:1393:A:N6     | 2.75                     | 0.55              |
| 8:CB:1426:G:H8    | 8:CB:1426:G:O5'    | 1.90                     | 0.55              |
| 8:CB:1960:A:N6    | 8:CB:1961:C:N4     | 2.55                     | 0.55              |
| 8:CB:2485:G:C2'   | 8:CB:2486:C:H5'    | 2.37                     | 0.55              |
| 8:CB:2656:U:C4    | 8:CB:2664:G:N2     | 2.75                     | 0.55              |
| 8:CB:2748:A:C8    | 8:CB:2757:A:N6     | 2.75                     | 0.55              |
| 10:CD:129:THR:CA  | 10:CD:140:HIS:CE1  | 2.90                     | 0.55              |
| 15:CI:7:TYR:HB2   | 15:CI:59:THR:HB    | 1.87                     | 0.55              |
| 18:CL:33:ARG:CB   | 24:CR:85:LYS:HE2   | 2.37                     | 0.55              |
| 20:CN:2:ARG:O     | 20:CN:2:ARG:CD     | 2.55                     | 0.55              |
| 20:CN:102:PHE:H   | 20:CN:109:PRO:HA   | 1.71                     | 0.55              |
| 21:CO:90:VAL:HG22 | 21:CO:116:GLN:CB   | 2.36                     | 0.55              |
| 23:CQ:43:GLN:NE2  | 24:CR:81:LYS:HB3   | 2.22                     | 0.55              |
| 24:CR:39:LEU:HD12 | 24:CR:57:GLY:HA3   | 1.88                     | 0.55              |
| 24:CR:76:LYS:O    | 24:CR:77:PHE:CB    | 2.55                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 24:CR:82:HIS:O    | 24:CR:82:HIS:CG   | 2.60                     | 0.55              |
| 25:CS:27:LYS:HB2  | 25:CS:28:LYS:CD   | 2.36                     | 0.55              |
| 26:CT:10:VAL:HG23 | 26:CT:11:LEU:HD12 | 1.89                     | 0.55              |
| 26:CT:19:LYS:HE3  | 26:CT:84:TYR:OH   | 2.07                     | 0.55              |
| 28:CV:85:LYS:C    | 28:CV:86:LEU:HD12 | 2.26                     | 0.55              |
| 29:CW:30:VAL:HG12 | 29:CW:31:LEU:HB2  | 1.89                     | 0.55              |
| 29:CW:57:THR:CG2  | 29:CW:77:LYS:HE3  | 2.37                     | 0.55              |
| 32:CZ:30:HIS:HB3  | 32:CZ:32:LEU:HD23 | 1.89                     | 0.55              |
| 32:CZ:48:GLN:OE1  | 32:CZ:49:ARG:O    | 2.24                     | 0.55              |
| 33:DA:106:C:H2'   | 33:DA:107:G:O4'   | 2.07                     | 0.55              |
| 33:DA:201:G:H22   | 33:DA:217:C:H1'   | 1.70                     | 0.55              |
| 33:DA:292:G:N2    | 33:DA:308:C:O2    | 2.36                     | 0.55              |
| 33:DA:325:A:H2'   | 33:DA:326:G:O4'   | 2.07                     | 0.55              |
| 33:DA:479:U:C2'   | 33:DA:480:U:H5'   | 2.36                     | 0.55              |
| 33:DA:724:G:H2'   | 33:DA:725:G:O5'   | 2.06                     | 0.55              |
| 33:DA:780:A:C8    | 33:DA:780:A:C3'   | 2.89                     | 0.55              |
| 33:DA:813:U:H2'   | 33:DA:814:A:H5'   | 1.89                     | 0.55              |
| 33:DA:819:A:N1    | 55:DA:5171:HOH:O  | 2.33                     | 0.55              |
| 33:DA:899:C:N4    | 33:DA:900:A:C6    | 2.75                     | 0.55              |
| 33:DA:913:A:C4'   | 33:DA:914:A:O5'   | 2.53                     | 0.55              |
| 33:DA:1059:C:C4   | 33:DA:1060:U:C5   | 2.88                     | 0.55              |
| 33:DA:1360:A:H62  | 33:DA:1361:G:H21  | 1.54                     | 0.55              |
| 33:DA:1444:U:C5   | 33:DA:1445:U:C5   | 2.95                     | 0.55              |
| 33:DA:1459:G:N2   | 33:DA:1460:C:C2   | 2.75                     | 0.55              |
| 33:DA:1494:G:C5   | 33:DA:1495:U:C5   | 2.93                     | 0.55              |
| 35:DC:84:GLU:O    | 35:DC:88:LYS:HB2  | 2.06                     | 0.55              |
| 35:DC:119:ILE:O   | 35:DC:122:GLN:HB2 | 2.07                     | 0.55              |
| 36:DD:28:ASP:OD2  | 36:DD:33:ILE:HB   | 2.06                     | 0.55              |
| 36:DD:40:HIS:HB3  | 36:DD:43:ARG:CD   | 2.37                     | 0.55              |
| 36:DD:90:LEU:HD21 | 36:DD:196:GLU:CB  | 2.36                     | 0.55              |
| 37:DE:125:LYS:HD2 | 37:DE:127:TYR:CD1 | 2.42                     | 0.55              |
| 40:DH:9:MET:HE3   | 40:DH:35:ILE:HG21 | 1.89                     | 0.55              |
| 41:DI:6:TYR:HE2   | 41:DI:17:ARG:HG3  | 1.72                     | 0.55              |
| 41:DI:54:VAL:O    | 41:DI:55:ASP:HB2  | 2.06                     | 0.55              |
| 46:DN:62:ARG:HD3  | 46:DN:69:PRO:HD3  | 1.88                     | 0.55              |
| 46:DN:100:TRP:N   | 46:DN:100:TRP:CE3 | 2.75                     | 0.55              |
| 48:DP:78:VAL:HG12 | 48:DP:78:VAL:O    | 2.05                     | 0.55              |
| 7:AA:38:C:H2'     | 7:AA:39:A:H8      | 1.71                     | 0.55              |
| 8:AB:143:C:H2'    | 8:AB:144:A:C1'    | 2.37                     | 0.55              |
| 8:AB:246:C:H2'    | 8:AB:247:G:H5'    | 1.88                     | 0.55              |
| 8:AB:255:A:H5''   | 8:AB:255:A:H8     | 1.71                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:381:G:H2'    | 8:AB:382:A:H5'     | 1.89                     | 0.55              |
| 8:AB:476:G:C2     | 8:AB:479:A:C8      | 2.95                     | 0.55              |
| 8:AB:737:C:HO2'   | 8:AB:738:G:H5'     | 1.71                     | 0.55              |
| 8:AB:866:A:H2'    | 8:AB:867:C:C5'     | 2.34                     | 0.55              |
| 8:AB:942:G:H5'    | 18:AL:40:SER:CB    | 2.37                     | 0.55              |
| 8:AB:956:G:H4'    | 19:AM:81:ARG:NH2   | 2.21                     | 0.55              |
| 8:AB:1256:G:H2'   | 8:AB:1257:C:H6     | 1.72                     | 0.55              |
| 8:AB:1366:A:C4    | 8:AB:1367:A:C8     | 2.95                     | 0.55              |
| 8:AB:1680:U:C2'   | 8:AB:1681:G:H5'    | 2.37                     | 0.55              |
| 8:AB:1899:A:O2'   | 8:AB:1901:A:H5''   | 2.07                     | 0.55              |
| 8:AB:2142:A:N6    | 8:AB:2149:U:H3     | 2.04                     | 0.55              |
| 8:AB:2431:U:C2'   | 8:AB:2432:A:H5''   | 2.36                     | 0.55              |
| 8:AB:2464:G:C4    | 8:AB:2487:G:N2     | 2.75                     | 0.55              |
| 8:AB:2636:C:O3'   | 10:AD:80:TRP:CH2   | 2.59                     | 0.55              |
| 8:AB:2657:A:H2'   | 8:AB:2658:C:H5'    | 1.89                     | 0.55              |
| 8:AB:2849:U:H4'   | 8:AB:2850:A:C5'    | 2.37                     | 0.55              |
| 8:AB:2856:A:H5'   | 8:AB:2856:A:C8     | 2.40                     | 0.55              |
| 9:AC:128:THR:HG23 | 9:AC:189:ALA:H     | 1.72                     | 0.55              |
| 10:AD:88:GLU:C    | 10:AD:90:PHE:H     | 2.10                     | 0.55              |
| 11:AE:89:PRO:O    | 11:AE:90:GLN:HG2   | 2.07                     | 0.55              |
| 17:AK:21:CYS:SG   | 17:AK:39:ILE:HD11  | 2.46                     | 0.55              |
| 18:AL:39:LYS:HD3  | 18:AL:45:GLY:O     | 2.07                     | 0.55              |
| 26:AT:84:TYR:C    | 26:AT:85:VAL:HG13  | 2.27                     | 0.55              |
| 27:AU:3:LYS:O     | 27:AU:4:ILE:CB     | 2.54                     | 0.55              |
| 29:AW:44:PHE:HZ   | 29:AW:58:LEU:O     | 1.90                     | 0.55              |
| 33:BA:158:G:O6    | 33:BA:164:G:C5     | 2.60                     | 0.55              |
| 33:BA:480:U:O2    | 33:BA:480:U:C2'    | 2.55                     | 0.55              |
| 33:BA:487:A:H8    | 33:BA:487:A:O5'    | 1.89                     | 0.55              |
| 33:BA:683:G:C6    | 33:BA:708:C:N3     | 2.75                     | 0.55              |
| 33:BA:712:A:H5'   | 33:BA:712:A:H8     | 1.69                     | 0.55              |
| 33:BA:817:C:H5'   | 55:BA:5159:HOH:O   | 2.06                     | 0.55              |
| 33:BA:852:G:H2'   | 33:BA:853:C:O4'    | 2.07                     | 0.55              |
| 33:BA:980:C:C4'   | 46:BN:12:ARG:HH22  | 2.18                     | 0.55              |
| 33:BA:1175:G:H8   | 33:BA:1175:G:O5'   | 1.90                     | 0.55              |
| 33:BA:1318:A:H4'  | 51:BS:9:PHE:CG     | 2.42                     | 0.55              |
| 33:BA:1438:G:C5   | 33:BA:1439:G:N7    | 2.75                     | 0.55              |
| 33:BA:1453:G:N2   | 33:BA:1454:G:C5    | 2.75                     | 0.55              |
| 33:BA:1477:U:C2   | 33:BA:1478:U:C6    | 2.94                     | 0.55              |
| 34:BB:202:ASN:C   | 34:BB:202:ASN:HD22 | 2.10                     | 0.55              |
| 35:BC:38:VAL:HG23 | 35:BC:39:ARG:N     | 2.21                     | 0.55              |
| 36:BD:159:GLU:HG3 | 36:BD:160:LEU:N    | 2.22                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:BM:21:ILE:HD12 | 45:BM:24:VAL:HG11 | 1.89                     | 0.55              |
| 46:BN:18:LYS:HB2  | 46:BN:19:TYR:CE1  | 2.42                     | 0.55              |
| 47:BO:11:VAL:HG23 | 47:BO:26:VAL:HG21 | 1.89                     | 0.55              |
| 4:C3:7:ARG:CZ     | 8:CB:250:G:P      | 2.95                     | 0.55              |
| 8:CB:458:G:H22    | 8:CB:469:G:C2'    | 2.15                     | 0.55              |
| 8:CB:575:A:O2'    | 8:CB:576:U:H5''   | 2.07                     | 0.55              |
| 8:CB:639:U:H2'    | 8:CB:640:C:H6     | 1.72                     | 0.55              |
| 8:CB:751:A:C6     | 8:CB:789:A:C5     | 2.95                     | 0.55              |
| 8:CB:788:A:H5''   | 8:CB:790:U:O4     | 2.06                     | 0.55              |
| 8:CB:929:U:O2'    | 31:CY:24:LEU:O    | 2.18                     | 0.55              |
| 8:CB:969:G:C6     | 8:CB:970:U:C4     | 2.95                     | 0.55              |
| 8:CB:993:G:N2     | 8:CB:1162:G:C2    | 2.75                     | 0.55              |
| 8:CB:1052:C:H2'   | 8:CB:1053:C:H5    | 1.70                     | 0.55              |
| 8:CB:1139:G:H8    | 8:CB:1139:G:C5'   | 2.18                     | 0.55              |
| 8:CB:1360:G:O6    | 8:CB:1372:U:C2    | 2.60                     | 0.55              |
| 8:CB:1361:G:C2    | 8:CB:1362:C:C5    | 2.94                     | 0.55              |
| 8:CB:1997:C:O2'   | 8:CB:1998:A:H5'   | 2.06                     | 0.55              |
| 8:CB:2250:G:C2    | 19:CM:81:ARG:HG2  | 2.42                     | 0.55              |
| 8:CB:2276:G:OP2   | 19:CM:82:MET:O    | 2.25                     | 0.55              |
| 8:CB:2553:G:C2    | 8:CB:2583:G:H1'   | 2.41                     | 0.55              |
| 8:CB:2574:G:H21   | 10:CD:147:GLY:HA2 | 1.71                     | 0.55              |
| 8:CB:2853:C:O2'   | 8:CB:2854:G:H5'   | 2.07                     | 0.55              |
| 9:CC:30:ALA:N     | 9:CC:31:PRO:CD    | 2.70                     | 0.55              |
| 9:CC:80:LEU:HD22  | 9:CC:91:ALA:HB2   | 1.89                     | 0.55              |
| 9:CC:140:VAL:O    | 9:CC:141:HIS:CB   | 2.53                     | 0.55              |
| 9:CC:208:GLY:C    | 9:CC:210:ALA:N    | 2.59                     | 0.55              |
| 11:CE:35:TYR:O    | 11:CE:38:GLY:N    | 2.39                     | 0.55              |
| 11:CE:49:ARG:HB2  | 11:CE:51:GLU:CG   | 2.34                     | 0.55              |
| 13:CG:156:TYR:HD1 | 13:CG:174:LYS:NZ  | 2.05                     | 0.55              |
| 17:CK:2:ILE:HG22  | 17:CK:32:TYR:HB3  | 1.89                     | 0.55              |
| 18:CL:18:ARG:HD2  | 18:CL:20:GLY:N    | 2.22                     | 0.55              |
| 21:CO:18:LEU:N    | 21:CO:20:GLU:OE2  | 2.40                     | 0.55              |
| 21:CO:35:ILE:HG12 | 21:CO:71:ALA:HB1  | 1.87                     | 0.55              |
| 22:CP:25:VAL:O    | 22:CP:27:VAL:HG12 | 2.07                     | 0.55              |
| 22:CP:45:VAL:HG13 | 22:CP:65:ASN:ND2  | 2.21                     | 0.55              |
| 22:CP:64:SER:HB3  | 22:CP:71:ARG:HH11 | 1.72                     | 0.55              |
| 23:CQ:38:VAL:HA   | 23:CQ:42:GLY:N    | 2.19                     | 0.55              |
| 23:CQ:113:LYS:C   | 23:CQ:115:ALA:H   | 2.09                     | 0.55              |
| 25:CS:20:VAL:HG13 | 25:CS:21:ALA:H    | 1.70                     | 0.55              |
| 27:CU:38:ILE:HG13 | 27:CU:39:ASN:N    | 2.21                     | 0.55              |
| 32:CZ:2:LYS:O     | 32:CZ:3:LYS:HB2   | 2.06                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:15:G:C2     | 33:DA:16:A:C8      | 2.95                     | 0.55              |
| 33:DA:109:A:C4    | 33:DA:327:A:C2     | 2.95                     | 0.55              |
| 33:DA:345:C:C6    | 33:DA:345:C:H5'    | 2.42                     | 0.55              |
| 33:DA:397:A:C6    | 33:DA:548:G:C5     | 2.95                     | 0.55              |
| 33:DA:402:G:C6    | 33:DA:403:C:N4     | 2.74                     | 0.55              |
| 33:DA:456:A:C8    | 33:DA:456:A:C3'    | 2.90                     | 0.55              |
| 33:DA:563:A:C2    | 33:DA:567:G:C5     | 2.95                     | 0.55              |
| 33:DA:914:A:O2'   | 33:DA:915:A:O5'    | 2.24                     | 0.55              |
| 33:DA:918:A:C4    | 33:DA:919:A:C8     | 2.95                     | 0.55              |
| 33:DA:1314:C:C6   | 51:DS:5:LYS:HE2    | 2.42                     | 0.55              |
| 33:DA:1320:C:C2   | 51:DS:71:GLY:HA3   | 2.42                     | 0.55              |
| 34:DB:179:GLY:O   | 34:DB:180:ILE:HD13 | 2.07                     | 0.55              |
| 37:DE:135:VAL:O   | 37:DE:138:ALA:N    | 2.33                     | 0.55              |
| 41:DI:44:ARG:C    | 41:DI:46:VAL:H     | 2.09                     | 0.55              |
| 47:DO:80:LEU:HD23 | 47:DO:84:LEU:HD13  | 1.88                     | 0.55              |
| 7:AA:115:A:C2     | 7:AA:116:G:N7      | 2.75                     | 0.55              |
| 8:AB:705:A:H4'    | 9:AC:13:ARG:HG2    | 1.89                     | 0.55              |
| 8:AB:1010:A:H4'   | 23:AQ:75:TYR:HD2   | 1.71                     | 0.55              |
| 8:AB:1503:A:C5    | 8:AB:1504:A:C8     | 2.95                     | 0.55              |
| 8:AB:1733:G:H8    | 8:AB:1733:G:H5'    | 1.71                     | 0.55              |
| 8:AB:1755:A:H61   | 8:AB:2694:G:H2'    | 1.71                     | 0.55              |
| 8:AB:1810:A:H2'   | 8:AB:1811:G:O4'    | 2.07                     | 0.55              |
| 8:AB:1914:C:H2'   | 8:AB:1915:U:H6     | 1.71                     | 0.55              |
| 8:AB:2077:A:OP1   | 8:AB:2238:G:N2     | 2.39                     | 0.55              |
| 8:AB:2485:G:H8    | 8:AB:2485:G:O5'    | 1.89                     | 0.55              |
| 8:AB:2605:U:O2    | 8:AB:2606:C:C5     | 2.60                     | 0.55              |
| 8:AB:2678:C:C2    | 8:AB:2679:A:N7     | 2.75                     | 0.55              |
| 8:AB:2852:G:H2'   | 8:AB:2853:C:C6     | 2.42                     | 0.55              |
| 8:AB:2867:G:N3    | 8:AB:2867:G:C2'    | 2.70                     | 0.55              |
| 9:AC:63:ILE:O     | 9:AC:64:VAL:HG22   | 2.07                     | 0.55              |
| 13:AG:30:GLY:H    | 13:AG:78:VAL:HG12  | 1.71                     | 0.55              |
| 13:AG:148:ARG:HG3 | 13:AG:153:PRO:HD3  | 1.89                     | 0.55              |
| 16:AJ:35:ARG:NH1  | 16:AJ:40:HIS:HB2   | 2.21                     | 0.55              |
| 17:AK:22:ILE:HG23 | 17:AK:40:LYS:O     | 2.06                     | 0.55              |
| 18:AL:56:PRO:HG3  | 18:AL:60:ARG:HH22  | 1.70                     | 0.55              |
| 20:AN:103:ARG:HG2 | 20:AN:103:ARG:HH11 | 1.71                     | 0.55              |
| 21:AO:8:ILE:CG2   | 21:AO:9:ARG:N      | 2.69                     | 0.55              |
| 23:AQ:52:ARG:NH2  | 23:AQ:55:GLN:HG2   | 2.22                     | 0.55              |
| 23:AQ:108:LEU:HA  | 23:AQ:111:LYS:CE   | 2.32                     | 0.55              |
| 24:AR:84:ARG:HG2  | 24:AR:84:ARG:O     | 2.05                     | 0.55              |
| 25:AS:84:ARG:HH21 | 25:AS:98:LYS:HD3   | 1.71                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:11:G:C4     | 33:BA:12:U:C6     | 2.95                     | 0.55              |
| 33:BA:146:G:C2    | 33:BA:147:G:C8    | 2.95                     | 0.55              |
| 33:BA:229:U:H5'   | 48:BP:33:ILE:HD13 | 1.89                     | 0.55              |
| 33:BA:345:C:H5'   | 33:BA:345:C:H6    | 1.72                     | 0.55              |
| 33:BA:546:A:O5'   | 33:BA:546:A:C8    | 2.59                     | 0.55              |
| 33:BA:669:G:N2    | 33:BA:738:C:N3    | 2.54                     | 0.55              |
| 33:BA:828:U:O2    | 34:BB:24:PRO:HB2  | 2.06                     | 0.55              |
| 33:BA:973:G:H3'   | 33:BA:974:A:H5''  | 1.89                     | 0.55              |
| 33:BA:1118:U:O2   | 33:BA:1179:A:C6   | 2.60                     | 0.55              |
| 33:BA:1187:G:H21  | 46:BN:99:SER:CB   | 2.20                     | 0.55              |
| 37:BE:37:VAL:HG11 | 37:BE:113:VAL:CG1 | 2.37                     | 0.55              |
| 39:BG:38:ALA:C    | 39:BG:40:SER:H    | 2.10                     | 0.55              |
| 43:BK:30:ILE:HG22 | 43:BK:45:THR:OG1  | 2.06                     | 0.55              |
| 45:BM:79:LEU:HD23 | 45:BM:86:ARG:HH12 | 1.71                     | 0.55              |
| 52:BT:33:LYS:O    | 52:BT:36:ALA:HB3  | 2.07                     | 0.55              |
| 53:BU:5:VAL:O     | 53:BU:6:ARG:CB    | 2.52                     | 0.55              |
| 2:C1:11:VAL:HB    | 2:C1:51:ALA:HB3   | 1.88                     | 0.55              |
| 7:CA:26:C:H2'     | 7:CA:27:C:C6      | 2.42                     | 0.55              |
| 8:CB:411:G:OP2    | 8:CB:2407:A:OP2   | 2.24                     | 0.55              |
| 8:CB:467:G:N1     | 8:CB:468:G:C5     | 2.75                     | 0.55              |
| 8:CB:570:G:OP1    | 8:CB:972:A:H4'    | 2.06                     | 0.55              |
| 8:CB:639:U:H2'    | 8:CB:640:C:C6     | 2.41                     | 0.55              |
| 8:CB:764:A:C2     | 8:CB:781:A:C2     | 2.95                     | 0.55              |
| 8:CB:802:A:C4     | 8:CB:803:U:C5     | 2.95                     | 0.55              |
| 8:CB:972:A:OP2    | 8:CB:974:G:H5''   | 2.06                     | 0.55              |
| 8:CB:1018:U:H2'   | 8:CB:1019:U:H6    | 1.72                     | 0.55              |
| 8:CB:1213:A:N3    | 8:CB:1238:G:H1'   | 2.21                     | 0.55              |
| 8:CB:1236:G:O2'   | 8:CB:1237:A:H8    | 1.90                     | 0.55              |
| 8:CB:1809:A:C4    | 8:CB:1810:A:N7    | 2.75                     | 0.55              |
| 8:CB:2046:G:C6    | 8:CB:2047:C:C4    | 2.95                     | 0.55              |
| 8:CB:2199:A:C2    | 8:CB:2225:A:N3    | 2.75                     | 0.55              |
| 8:CB:2256:G:N2    | 8:CB:2257:U:C2    | 2.75                     | 0.55              |
| 8:CB:2258:C:H6    | 8:CB:2258:C:H5''  | 1.70                     | 0.55              |
| 8:CB:2280:G:C2    | 8:CB:2281:A:N7    | 2.75                     | 0.55              |
| 8:CB:2305:U:C2    | 8:CB:2306:C:C6    | 2.95                     | 0.55              |
| 8:CB:2384:U:H3'   | 8:CB:2385:C:C5'   | 2.37                     | 0.55              |
| 8:CB:2443:C:H2'   | 8:CB:2444:G:H8    | 1.72                     | 0.55              |
| 8:CB:2461:A:C4    | 8:CB:2462:C:C5    | 2.94                     | 0.55              |
| 8:CB:2527:C:C2    | 8:CB:2528:U:C6    | 2.94                     | 0.55              |
| 8:CB:2561:U:H4'   | 17:CK:22:ILE:HD11 | 1.88                     | 0.55              |
| 8:CB:2740:A:H2'   | 8:CB:2741:A:O4'   | 2.07                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2798:U:OP2   | 8:CB:2798:U:H3'   | 2.07                     | 0.55              |
| 8:CB:2899:A:O2'   | 8:CB:2900:A:H5'   | 2.07                     | 0.55              |
| 9:CC:32:LEU:HD23  | 9:CC:61:TYR:HE1   | 1.72                     | 0.55              |
| 10:CD:61:THR:HG23 | 10:CD:62:LYS:N    | 2.20                     | 0.55              |
| 10:CD:88:GLU:O    | 10:CD:89:GLU:O    | 2.24                     | 0.55              |
| 11:CE:103:GLY:O   | 11:CE:104:ALA:C   | 2.45                     | 0.55              |
| 13:CG:148:ARG:O   | 13:CG:152:ARG:HA  | 2.07                     | 0.55              |
| 16:CJ:13:ARG:HG2  | 16:CJ:50:THR:CG2  | 2.37                     | 0.55              |
| 16:CJ:50:THR:HG22 | 16:CJ:50:THR:O    | 2.06                     | 0.55              |
| 21:CO:40:ILE:HA   | 21:CO:46:GLU:HB3  | 1.88                     | 0.55              |
| 22:CP:23:ASP:CG   | 22:CP:93:LYS:NZ   | 2.59                     | 0.55              |
| 25:CS:2:GLU:O     | 25:CS:3:THR:O     | 2.24                     | 0.55              |
| 25:CS:58:ALA:O    | 25:CS:62:ASP:O    | 2.24                     | 0.55              |
| 27:CU:68:ASN:C    | 27:CU:69:VAL:HG22 | 2.27                     | 0.55              |
| 28:CV:69:GLU:HA   | 28:CV:69:GLU:OE2  | 2.07                     | 0.55              |
| 32:CZ:6:HIS:O     | 32:CZ:8:LYS:N     | 2.39                     | 0.55              |
| 33:DA:24:U:O2'    | 33:DA:25:C:H5'    | 2.07                     | 0.55              |
| 33:DA:57:G:O6     | 33:DA:356:A:N6    | 2.39                     | 0.55              |
| 33:DA:243:A:OP1   | 33:DA:243:A:H4'   | 2.05                     | 0.55              |
| 33:DA:700:G:O2'   | 33:DA:704:A:H1'   | 2.07                     | 0.55              |
| 33:DA:705:G:H8    | 33:DA:705:G:C5'   | 2.09                     | 0.55              |
| 33:DA:746:A:H2'   | 33:DA:747:A:N7    | 2.21                     | 0.55              |
| 33:DA:922:G:H4'   | 37:DE:24:VAL:HA   | 1.89                     | 0.55              |
| 33:DA:1069:C:N4   | 33:DA:1094:G:N1   | 2.55                     | 0.55              |
| 33:DA:1075:U:C4'  | 33:DA:1101:A:N6   | 2.69                     | 0.55              |
| 33:DA:1459:G:C6   | 33:DA:1460:C:N4   | 2.75                     | 0.55              |
| 35:DC:32:LEU:HD22 | 35:DC:36:PHE:CD1  | 2.42                     | 0.55              |
| 36:DD:16:THR:HB   | 36:DD:18:LEU:CD2  | 2.36                     | 0.55              |
| 37:DE:111:ARG:HG3 | 37:DE:112:ALA:N   | 2.22                     | 0.55              |
| 40:DH:76:ARG:HG3  | 40:DH:77:VAL:N    | 2.22                     | 0.55              |
| 44:DL:19:ASN:O    | 44:DL:85:ARG:NH1  | 2.37                     | 0.55              |
| 48:DP:24:SER:OG   | 48:DP:25:ARG:HD3  | 2.07                     | 0.55              |
| 4:A3:56:LEU:O     | 4:A3:58:ILE:N     | 2.40                     | 0.54              |
| 7:AA:6:G:C8       | 7:AA:6:G:H3'      | 2.41                     | 0.54              |
| 7:AA:73:A:N7      | 7:AA:74:U:C5      | 2.75                     | 0.54              |
| 8:AB:26:G:H2'     | 8:AB:27:G:O4'     | 2.07                     | 0.54              |
| 8:AB:282:A:C4     | 8:AB:283:G:C8     | 2.95                     | 0.54              |
| 8:AB:297:G:C6     | 8:AB:342:A:N1     | 2.74                     | 0.54              |
| 8:AB:301:G:C6     | 8:AB:317:G:C6     | 2.95                     | 0.54              |
| 8:AB:350:G:C2     | 8:AB:351:C:C2     | 2.95                     | 0.54              |
| 8:AB:362:A:N7     | 8:AB:363:G:N7     | 2.55                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:445:C:H4'     | 11:AE:47:LYS:HE2  | 1.88                     | 0.54              |
| 8:AB:910:A:H2      | 8:AB:911:A:N1     | 2.04                     | 0.54              |
| 8:AB:911:A:H2      | 8:AB:2277:G:N3    | 2.04                     | 0.54              |
| 8:AB:970:U:C2      | 8:AB:971:G:C8     | 2.95                     | 0.54              |
| 8:AB:1149:G:H2'    | 8:AB:1150:C:C6    | 2.42                     | 0.54              |
| 8:AB:1227:G:H2'    | 8:AB:1228:G:O4'   | 2.07                     | 0.54              |
| 8:AB:1262:A:C2'    | 8:AB:1263:U:H5'   | 2.37                     | 0.54              |
| 8:AB:1347:A:H2'    | 8:AB:1348:C:O4'   | 2.06                     | 0.54              |
| 8:AB:1809:A:H2'    | 8:AB:1809:A:N3    | 2.22                     | 0.54              |
| 8:AB:1943:U:O2     | 8:AB:1943:U:O4'   | 2.23                     | 0.54              |
| 8:AB:1945:G:N3     | 8:AB:1946:U:C6    | 2.76                     | 0.54              |
| 8:AB:2024:G:N1     | 8:AB:2025:C:C4    | 2.76                     | 0.54              |
| 8:AB:2090:A:H3'    | 8:AB:2091:C:H6    | 1.73                     | 0.54              |
| 8:AB:2137:U:H3     | 8:AB:2154:A:N6    | 2.01                     | 0.54              |
| 8:AB:2335:A:N7     | 8:AB:2337:G:C6    | 2.75                     | 0.54              |
| 8:AB:2469:A:C6     | 8:AB:2482:A:N7    | 2.75                     | 0.54              |
| 8:AB:2641:G:H8     | 8:AB:2641:G:H5'   | 1.72                     | 0.54              |
| 9:AC:208:GLY:C     | 9:AC:210:ALA:N    | 2.59                     | 0.54              |
| 11:AE:174:GLY:C    | 11:AE:175:ILE:O   | 2.43                     | 0.54              |
| 13:AG:169:ARG:NH1  | 13:AG:171:LYS:N   | 2.54                     | 0.54              |
| 14:AH:2:GLN:NE2    | 14:AH:21:VAL:HG23 | 2.23                     | 0.54              |
| 24:AR:23:GLU:CB    | 24:AR:96:VAL:HG13 | 2.37                     | 0.54              |
| 24:AR:90:ARG:HH22  | 24:AR:92:TRP:HB3  | 1.71                     | 0.54              |
| 28:AV:80:HIS:CD2   | 28:AV:83:LYS:HB2  | 2.41                     | 0.54              |
| 33:BA:219:U:C2     | 33:BA:220:G:C8    | 2.95                     | 0.54              |
| 33:BA:1014:A:H2'   | 33:BA:1015:G:O4'  | 2.07                     | 0.54              |
| 33:BA:1152:A:H2'   | 33:BA:1153:G:O4'  | 2.07                     | 0.54              |
| 34:BB:162:VAL:HG22 | 34:BB:163:ILE:N   | 2.22                     | 0.54              |
| 36:BD:43:ARG:O     | 36:BD:45:PRO:HD3  | 2.06                     | 0.54              |
| 36:BD:187:ARG:HA   | 36:BD:190:LEU:HB2 | 1.88                     | 0.54              |
| 37:BE:44:ARG:HA    | 37:BE:71:ILE:O    | 2.08                     | 0.54              |
| 47:BO:65:LEU:O     | 47:BO:69:LEU:HB2  | 2.07                     | 0.54              |
| 49:BQ:79:GLU:OE1   | 49:BQ:79:GLU:HA   | 2.07                     | 0.54              |
| 50:BR:24:ASP:O     | 50:BR:27:THR:HB   | 2.07                     | 0.54              |
| 51:BS:4:LEU:HD21   | 51:BS:9:PHE:HB3   | 1.88                     | 0.54              |
| 53:BU:37:TYR:HD1   | 53:BU:39:LYS:HE3  | 1.72                     | 0.54              |
| 2:C1:50:GLU:HG2    | 2:C1:51:ALA:N     | 2.20                     | 0.54              |
| 5:C4:28:SER:O      | 5:C4:29:ALA:C     | 2.44                     | 0.54              |
| 8:CB:14:A:C6       | 8:CB:526:A:C2     | 2.95                     | 0.54              |
| 8:CB:144:A:C6      | 26:CT:3:ARG:NH2   | 2.76                     | 0.54              |
| 8:CB:375:G:H8      | 8:CB:375:G:H5''   | 1.70                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:443:A:N7     | 11:CE:40:ARG:CG    | 2.70                     | 0.54              |
| 8:CB:498:G:C6     | 8:CB:499:U:C5      | 2.96                     | 0.54              |
| 8:CB:689:A:C2     | 8:CB:690:G:C4      | 2.95                     | 0.54              |
| 8:CB:964:C:OP2    | 55:CB:5192:HOH:O   | 2.17                     | 0.54              |
| 8:CB:1162:G:C8    | 8:CB:1162:G:C3'    | 2.90                     | 0.54              |
| 8:CB:1219:U:H2'   | 8:CB:1220:G:H8     | 1.72                     | 0.54              |
| 8:CB:1220:G:C6    | 8:CB:1230:A:C6     | 2.95                     | 0.54              |
| 8:CB:1451:C:H6    | 8:CB:1451:C:C5'    | 2.21                     | 0.54              |
| 8:CB:1635:A:H5'   | 8:CB:1635:A:C8     | 2.32                     | 0.54              |
| 8:CB:1862:G:N1    | 8:CB:1881:C:C4     | 2.75                     | 0.54              |
| 8:CB:2266:A:C3'   | 8:CB:2267:A:H5'    | 2.37                     | 0.54              |
| 8:CB:2280:G:O6    | 29:CW:3:LYS:HD2    | 2.07                     | 0.54              |
| 8:CB:2557:G:O5'   | 8:CB:2557:G:H8     | 1.90                     | 0.54              |
| 8:CB:2590:A:OP2   | 9:CC:224:MET:HE3   | 2.06                     | 0.54              |
| 8:CB:2639:A:O2'   | 16:CJ:99:ARG:NH2   | 2.37                     | 0.54              |
| 8:CB:2736:A:C2'   | 8:CB:2737:G:H8     | 2.10                     | 0.54              |
| 8:CB:2745:C:N3    | 8:CB:2759:G:N2     | 2.40                     | 0.54              |
| 8:CB:2773:C:H2'   | 8:CB:2774:C:H6     | 1.72                     | 0.54              |
| 11:CE:147:LEU:C   | 11:CE:148:ILE:HG23 | 2.26                     | 0.54              |
| 13:CG:118:ALA:C   | 13:CG:120:ILE:N    | 2.60                     | 0.54              |
| 14:CH:101:ASP:CA  | 14:CH:104:THR:HB   | 2.18                     | 0.54              |
| 15:CI:126:ARG:HD2 | 15:CI:126:ARG:O    | 2.07                     | 0.54              |
| 18:CL:42:SER:C    | 18:CL:44:GLY:H     | 2.10                     | 0.54              |
| 23:CQ:63:ARG:HB3  | 23:CQ:63:ARG:NH1   | 2.16                     | 0.54              |
| 23:CQ:70:GLN:CG   | 23:CQ:71:ASN:H     | 1.97                     | 0.54              |
| 29:CW:39:GLN:HA   | 29:CW:68:PHE:CB    | 2.27                     | 0.54              |
| 32:CZ:48:GLN:NE2  | 32:CZ:49:ARG:HD3   | 2.22                     | 0.54              |
| 33:DA:22:G:OP2    | 33:DA:561:U:C6     | 2.60                     | 0.54              |
| 33:DA:147:G:H2'   | 33:DA:148:G:C8     | 2.42                     | 0.54              |
| 33:DA:186:C:O3'   | 52:DT:76:ALA:CB    | 2.55                     | 0.54              |
| 33:DA:404:G:OP1   | 36:DD:2:ARG:NH1    | 2.40                     | 0.54              |
| 33:DA:515:G:O2'   | 33:DA:516:U:H5'    | 2.07                     | 0.54              |
| 33:DA:909:A:C2'   | 33:DA:910:C:H5'    | 2.36                     | 0.54              |
| 33:DA:953:G:N3    | 33:DA:953:G:H2'    | 2.21                     | 0.54              |
| 33:DA:1078:U:H4'  | 37:DE:137:ARG:HH22 | 1.71                     | 0.54              |
| 33:DA:1197:A:OP1  | 33:DA:1197:A:H3'   | 2.07                     | 0.54              |
| 33:DA:1239:A:C5   | 33:DA:1298:U:C5    | 2.95                     | 0.54              |
| 33:DA:1391:U:O5'  | 33:DA:1391:U:H6    | 1.90                     | 0.54              |
| 34:DB:16:GLY:HA3  | 34:DB:40:ILE:H     | 1.72                     | 0.54              |
| 34:DB:83:ALA:HB1  | 34:DB:90:PHE:CG    | 2.41                     | 0.54              |
| 40:DH:94:VAL:HG21 | 40:DH:100:ILE:O    | 2.07                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:DI:90:ASP:C     | 41:DI:92:SER:H    | 2.10                     | 0.54              |
| 42:DJ:84:VAL:HG12  | 42:DJ:84:VAL:O    | 2.07                     | 0.54              |
| 49:DQ:10:ARG:CZ    | 49:DQ:11:VAL:HB   | 2.37                     | 0.54              |
| 1:A0:5:ASN:HD21    | 8:AB:2019:A:H62   | 1.51                     | 0.54              |
| 5:A4:3:VAL:HG21    | 5:A4:35:GLN:CG    | 2.34                     | 0.54              |
| 8:AB:141:G:OP2     | 8:AB:142:A:C5     | 2.59                     | 0.54              |
| 8:AB:406:G:H2'     | 8:AB:407:G:O4'    | 2.06                     | 0.54              |
| 8:AB:699:A:H4'     | 8:AB:1634:A:N7    | 2.22                     | 0.54              |
| 8:AB:747:U:O2      | 8:AB:2014:A:H1'   | 2.07                     | 0.54              |
| 8:AB:818:G:N1      | 8:AB:1188:U:OP2   | 2.29                     | 0.54              |
| 8:AB:998:C:C4      | 55:AB:4421:HOH:O  | 2.53                     | 0.54              |
| 8:AB:1364:G:H5''   | 8:AB:1365:A:P     | 2.47                     | 0.54              |
| 8:AB:1429:G:C8     | 8:AB:1568:G:C8    | 2.95                     | 0.54              |
| 8:AB:1540:G:C6     | 8:AB:1541:C:C4    | 2.95                     | 0.54              |
| 8:AB:1541:C:H2'    | 8:AB:1542:U:C6    | 2.40                     | 0.54              |
| 8:AB:1783:A:C2     | 8:AB:2587:A:C5    | 2.95                     | 0.54              |
| 8:AB:2024:G:H4'    | 10:AD:154:LYS:HE3 | 1.89                     | 0.54              |
| 8:AB:2051:A:H5''   | 8:AB:2051:A:C8    | 2.41                     | 0.54              |
| 8:AB:2216:G:C2'    | 8:AB:2217:G:H5'   | 2.37                     | 0.54              |
| 8:AB:2256:G:N2     | 8:AB:2257:U:C2    | 2.75                     | 0.54              |
| 8:AB:2311:A:H3'    | 8:AB:2311:A:OP1   | 2.08                     | 0.54              |
| 8:AB:2669:G:H2'    | 8:AB:2670:A:C8    | 2.41                     | 0.54              |
| 8:AB:2721:A:H2'    | 8:AB:2722:G:O4'   | 2.06                     | 0.54              |
| 8:AB:2751:G:P      | 13:AG:1:SER:HB2   | 2.48                     | 0.54              |
| 8:AB:2764:A:N6     | 8:AB:2766:A:C6    | 2.75                     | 0.54              |
| 9:AC:169:ALA:O     | 9:AC:170:TYR:CB   | 2.51                     | 0.54              |
| 13:AG:64:ALA:HB1   | 13:AG:68:ARG:CZ   | 2.38                     | 0.54              |
| 13:AG:81:GLY:HA2   | 13:AG:134:GLY:O   | 2.07                     | 0.54              |
| 15:AI:58:ILE:CG2   | 15:AI:66:PHE:HB2  | 2.37                     | 0.54              |
| 17:AK:35:VAL:CG2   | 17:AK:69:VAL:HG22 | 2.33                     | 0.54              |
| 18:AL:29:LYS:HD2   | 18:AL:31:GLY:CA   | 2.37                     | 0.54              |
| 18:AL:74:THR:HG22  | 18:AL:107:PHE:H   | 1.72                     | 0.54              |
| 18:AL:112:LEU:HD21 | 18:AL:134:ALA:HB2 | 1.90                     | 0.54              |
| 21:AO:109:ALA:HA   | 21:AO:112:GLU:HG2 | 1.89                     | 0.54              |
| 23:AQ:43:GLN:OE1   | 24:AR:80:ARG:HG2  | 2.07                     | 0.54              |
| 24:AR:69:GLY:C     | 24:AR:70:GLU:HG3  | 2.27                     | 0.54              |
| 24:AR:73:LYS:O     | 24:AR:74:ILE:HG22 | 2.07                     | 0.54              |
| 25:AS:2:GLU:O      | 25:AS:3:THR:O     | 2.26                     | 0.54              |
| 26:AT:65:GLY:O     | 26:AT:66:LYS:HB2  | 2.07                     | 0.54              |
| 33:BA:179:A:C5     | 33:BA:180:U:C4    | 2.95                     | 0.54              |
| 33:BA:324:G:N2     | 33:BA:327:A:C5    | 2.75                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:386:C:H3'    | 33:BA:386:C:C6    | 2.42                     | 0.54              |
| 33:BA:414:A:C8     | 33:BA:415:A:C2    | 2.95                     | 0.54              |
| 33:BA:600:A:H5'    | 40:BH:120:LEU:HA  | 1.90                     | 0.54              |
| 33:BA:822:U:H5''   | 33:BA:823:C:OP2   | 2.07                     | 0.54              |
| 33:BA:903:G:N1     | 33:BA:904:U:C2    | 2.75                     | 0.54              |
| 33:BA:1032:G:H5'   | 33:BA:1033:G:OP2  | 2.06                     | 0.54              |
| 33:BA:1182:G:OP2   | 33:BA:1182:G:H8   | 1.88                     | 0.54              |
| 33:BA:1258:G:C2    | 33:BA:1278:G:N2   | 2.75                     | 0.54              |
| 34:BB:140:LEU:O    | 34:BB:144:GLU:HB2 | 2.07                     | 0.54              |
| 35:BC:121:SER:HA   | 35:BC:124:GLU:HB2 | 1.90                     | 0.54              |
| 36:BD:79:ALA:N     | 36:BD:85:THR:HG23 | 2.22                     | 0.54              |
| 36:BD:90:LEU:HA    | 36:BD:93:LEU:HG   | 1.88                     | 0.54              |
| 40:BH:9:MET:HE3    | 40:BH:32:LYS:HD3  | 1.89                     | 0.54              |
| 47:BO:31:LEU:O     | 47:BO:35:ILE:HG12 | 2.07                     | 0.54              |
| 48:BP:39:PHE:CD2   | 48:BP:40:ASN:N    | 2.75                     | 0.54              |
| 7:CA:99:A:C5       | 7:CA:100:G:C8     | 2.94                     | 0.54              |
| 8:CB:93:G:C4       | 8:CB:94:A:C8      | 2.95                     | 0.54              |
| 8:CB:316:C:H2'     | 8:CB:317:G:O4'    | 2.07                     | 0.54              |
| 8:CB:339:U:O5'     | 8:CB:339:U:H6     | 1.90                     | 0.54              |
| 8:CB:672:C:N3      | 8:CB:673:C:C5     | 2.75                     | 0.54              |
| 8:CB:1015:U:H6     | 8:CB:1015:U:H3'   | 1.72                     | 0.54              |
| 8:CB:1323:C:H5''   | 25:CS:84:ARG:HH12 | 1.72                     | 0.54              |
| 8:CB:1359:A:C2     | 8:CB:1360:G:C1'   | 2.74                     | 0.54              |
| 8:CB:1551:A:H3'    | 8:CB:1552:A:H5''  | 1.89                     | 0.54              |
| 8:CB:1663:G:H2'    | 55:CB:5347:HOH:O  | 2.06                     | 0.54              |
| 8:CB:1744:A:H2'    | 8:CB:1745:A:C8    | 2.42                     | 0.54              |
| 8:CB:1974:C:H2'    | 8:CB:1975:G:O5'   | 2.07                     | 0.54              |
| 8:CB:2317:A:H2'    | 8:CB:2318:G:H5'   | 1.87                     | 0.54              |
| 8:CB:2331:G:C4'    | 29:CW:69:GLU:HG2  | 2.35                     | 0.54              |
| 8:CB:2435:A:H2'    | 8:CB:2436:G:O5'   | 2.07                     | 0.54              |
| 8:CB:2854:G:N2     | 8:CB:2864:G:C4    | 2.76                     | 0.54              |
| 9:CC:34:GLU:CD     | 9:CC:35:LYS:N     | 2.61                     | 0.54              |
| 10:CD:36:GLN:HB3   | 10:CD:47:ALA:HA   | 1.89                     | 0.54              |
| 10:CD:122:VAL:HG21 | 10:CD:141:ARG:CD  | 2.35                     | 0.54              |
| 11:CE:58:LYS:HZ1   | 11:CE:62:GLN:N    | 2.05                     | 0.54              |
| 12:CF:35:LEU:HD11  | 12:CF:60:SER:HB3  | 1.90                     | 0.54              |
| 12:CF:103:ILE:HD12 | 12:CF:173:ASP:HA  | 1.89                     | 0.54              |
| 14:CH:4:ILE:HD13   | 14:CH:37:VAL:HG13 | 1.88                     | 0.54              |
| 16:CJ:113:PRO:HA   | 16:CJ:116:ARG:CB  | 2.37                     | 0.54              |
| 17:CK:35:VAL:CG2   | 17:CK:69:VAL:HG22 | 2.34                     | 0.54              |
| 17:CK:42:THR:HG22  | 17:CK:42:THR:O    | 2.06                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:CK:78:ARG:CZ   | 22:CP:102:ARG:HH12 | 2.20                     | 0.54              |
| 18:CL:34:GLY:H    | 24:CR:85:LYS:CE    | 2.18                     | 0.54              |
| 18:CL:35:HIS:CE1  | 24:CR:84:ARG:CB    | 2.90                     | 0.54              |
| 21:CO:63:LYS:O    | 21:CO:65:THR:N     | 2.40                     | 0.54              |
| 23:CQ:107:ALA:O   | 23:CQ:110:GLU:HB2  | 2.07                     | 0.54              |
| 24:CR:40:MET:HG3  | 24:CR:40:MET:O     | 2.06                     | 0.54              |
| 25:CS:7:HIS:O     | 25:CS:8:ARG:CB     | 2.54                     | 0.54              |
| 27:CU:5:ARG:O     | 27:CU:25:LYS:HG2   | 2.07                     | 0.54              |
| 29:CW:3:LYS:HZ3   | 29:CW:10:ARG:NE    | 2.05                     | 0.54              |
| 30:CX:9:LYS:HE2   | 30:CX:11:VAL:CG1   | 2.36                     | 0.54              |
| 30:CX:49:ASP:O    | 30:CX:51:ALA:O     | 2.25                     | 0.54              |
| 33:DA:321:A:H2    | 33:DA:332:G:H22    | 1.55                     | 0.54              |
| 33:DA:378:G:C2    | 33:DA:386:C:N3     | 2.74                     | 0.54              |
| 33:DA:455:G:N2    | 33:DA:456:A:N3     | 2.55                     | 0.54              |
| 33:DA:485:U:O2'   | 33:DA:486:U:OP1    | 2.25                     | 0.54              |
| 33:DA:515:G:H2'   | 33:DA:516:U:O4'    | 2.08                     | 0.54              |
| 33:DA:645:G:C2    | 33:DA:646:G:C8     | 2.95                     | 0.54              |
| 33:DA:716:A:C2    | 33:DA:717:U:H1'    | 2.41                     | 0.54              |
| 33:DA:722:G:C6    | 33:DA:724:G:C4     | 2.95                     | 0.54              |
| 33:DA:818:G:HO2'  | 33:DA:820:U:H5     | 1.54                     | 0.54              |
| 33:DA:917:G:N2    | 33:DA:918:A:C4     | 2.75                     | 0.54              |
| 33:DA:1065:U:O2'  | 33:DA:1066:C:OP2   | 2.20                     | 0.54              |
| 33:DA:1079:G:C5   | 33:DA:1080:A:N1    | 2.75                     | 0.54              |
| 33:DA:1410:A:H3'  | 33:DA:1411:C:C6    | 2.43                     | 0.54              |
| 35:DC:86:LEU:O    | 35:DC:90:VAL:HG23  | 2.07                     | 0.54              |
| 38:DF:100:SER:CB  | 50:DR:23:LYS:HD3   | 2.25                     | 0.54              |
| 40:DH:23:ALA:O    | 40:DH:24:VAL:HG23  | 2.08                     | 0.54              |
| 40:DH:33:VAL:HG12 | 40:DH:34:ALA:N     | 2.21                     | 0.54              |
| 49:DQ:64:ARG:CB   | 49:DQ:64:ARG:NH1   | 2.69                     | 0.54              |
| 2:A1:46:VAL:HG13  | 2:A1:47:ILE:CG1    | 2.36                     | 0.54              |
| 7:AA:30:C:H2'     | 7:AA:31:C:H5'      | 1.88                     | 0.54              |
| 8:AB:13:A:C2      | 8:AB:526:A:C8      | 2.95                     | 0.54              |
| 8:AB:132:G:H8     | 8:AB:132:G:O5'     | 1.90                     | 0.54              |
| 8:AB:134:G:N2     | 8:AB:146:A:C4      | 2.76                     | 0.54              |
| 8:AB:160:A:N6     | 8:AB:167:A:H1'     | 2.23                     | 0.54              |
| 8:AB:370:G:H8     | 8:AB:370:G:O5'     | 1.90                     | 0.54              |
| 8:AB:450:G:H4'    | 11:AE:47:LYS:HZ2   | 1.72                     | 0.54              |
| 8:AB:468:G:HO2'   | 8:AB:469:G:P       | 2.31                     | 0.54              |
| 8:AB:553:G:N7     | 8:AB:554:U:C5      | 2.76                     | 0.54              |
| 8:AB:974:G:C6     | 8:AB:989:G:C6      | 2.95                     | 0.54              |
| 8:AB:1005:C:C2    | 8:AB:1006:C:C5     | 2.95                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:1279:G:N2     | 8:AB:1292:G:C4    | 2.76                     | 0.54              |
| 8:AB:1335:C:H6     | 8:AB:1335:C:H3'   | 1.73                     | 0.54              |
| 8:AB:1342:A:O2'    | 8:AB:1343:G:H5''  | 2.07                     | 0.54              |
| 8:AB:1419:A:C2     | 8:AB:2211:A:N6    | 2.74                     | 0.54              |
| 8:AB:1541:C:C2     | 8:AB:1542:U:C6    | 2.95                     | 0.54              |
| 8:AB:2355:G:H1'    | 8:AB:2363:G:N2    | 2.22                     | 0.54              |
| 8:AB:2749:A:C8     | 8:AB:2750:A:H2'   | 2.42                     | 0.54              |
| 8:AB:2788:C:H2'    | 8:AB:2789:C:H6    | 1.68                     | 0.54              |
| 8:AB:2819:G:OP1    | 20:AN:5:LYS:HE2   | 2.07                     | 0.54              |
| 9:AC:17:LYS:HA     | 9:AC:17:LYS:HZ3   | 1.73                     | 0.54              |
| 9:AC:141:HIS:CB    | 9:AC:190:THR:HB   | 2.37                     | 0.54              |
| 16:AJ:122:LEU:O    | 16:AJ:123:LYS:HB2 | 2.06                     | 0.54              |
| 18:AL:78:ARG:NH1   | 18:AL:80:SER:CA   | 2.70                     | 0.54              |
| 18:AL:110:VAL:HG23 | 18:AL:126:ARG:NH1 | 2.22                     | 0.54              |
| 19:AM:34:LYS:HA    | 19:AM:99:GLY:HA2  | 1.88                     | 0.54              |
| 22:AP:55:HIS:O     | 22:AP:58:PHE:CG   | 2.60                     | 0.54              |
| 22:AP:73:PHE:HE2   | 22:AP:75:THR:HG23 | 1.69                     | 0.54              |
| 23:AQ:22:GLY:O     | 23:AQ:23:TYR:HB2  | 2.07                     | 0.54              |
| 23:AQ:41:ALA:O     | 23:AQ:43:GLN:N    | 2.40                     | 0.54              |
| 24:AR:65:ALA:HB1   | 24:AR:99:THR:HG23 | 1.88                     | 0.54              |
| 29:AW:15:SER:O     | 29:AW:17:ALA:N    | 2.40                     | 0.54              |
| 29:AW:36:ILE:O     | 29:AW:37:VAL:HG22 | 2.07                     | 0.54              |
| 29:AW:68:PHE:O     | 29:AW:69:GLU:CB   | 2.51                     | 0.54              |
| 31:AY:40:THR:HG23  | 31:AY:43:ILE:HG22 | 1.89                     | 0.54              |
| 33:BA:57:G:H1      | 33:BA:356:A:N6    | 2.06                     | 0.54              |
| 33:BA:201:G:H22    | 33:BA:217:C:H1'   | 1.71                     | 0.54              |
| 33:BA:266:G:H22    | 33:BA:270:A:H61   | 1.54                     | 0.54              |
| 33:BA:301:G:C6     | 33:BA:302:G:C5    | 2.96                     | 0.54              |
| 33:BA:377:G:C6     | 33:BA:387:U:O2    | 2.61                     | 0.54              |
| 33:BA:679:C:O2     | 33:BA:712:A:H2    | 1.90                     | 0.54              |
| 33:BA:1281:C:H6    | 33:BA:1281:C:H5'' | 1.72                     | 0.54              |
| 35:BC:122:GLN:HE22 | 35:BC:136:ALA:HB1 | 1.72                     | 0.54              |
| 36:BD:200:VAL:HG21 | 37:BE:101:GLY:O   | 2.08                     | 0.54              |
| 37:BE:61:LYS:O     | 37:BE:63:MET:N    | 2.40                     | 0.54              |
| 38:BF:38:ARG:NH2   | 50:BR:23:LYS:NZ   | 2.55                     | 0.54              |
| 52:BT:4:LYS:O      | 52:BT:5:SER:C     | 2.44                     | 0.54              |
| 5:C4:26:ILE:HD12   | 5:C4:35:GLN:CG    | 2.36                     | 0.54              |
| 8:CB:86:G:C2       | 8:CB:97:C:C4      | 2.95                     | 0.54              |
| 8:CB:137:U:O4      | 8:CB:142:A:N1     | 2.41                     | 0.54              |
| 8:CB:396:G:OP2     | 32:CZ:8:LYS:NZ    | 2.39                     | 0.54              |
| 8:CB:644:A:H2'     | 8:CB:644:A:N3     | 2.22                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:909:A:C2      | 8:CB:912:C:N1      | 2.76                     | 0.54              |
| 8:CB:969:G:N2      | 8:CB:970:U:C2      | 2.76                     | 0.54              |
| 8:CB:1156:A:P      | 23:CQ:54:ARG:HH21  | 2.29                     | 0.54              |
| 8:CB:1254:A:H5''   | 8:CB:1255:U:C5'    | 2.37                     | 0.54              |
| 8:CB:1288:G:C8     | 8:CB:1327:A:N6     | 2.75                     | 0.54              |
| 8:CB:1329:U:O2'    | 8:CB:1330:C:H5'    | 2.07                     | 0.54              |
| 8:CB:1350:C:C6     | 8:CB:1351:C:H5     | 2.25                     | 0.54              |
| 8:CB:1873:G:C2'    | 8:CB:1874:C:H5'    | 2.37                     | 0.54              |
| 8:CB:2067:G:H5'    | 8:CB:2068:U:OP2    | 2.08                     | 0.54              |
| 8:CB:2147:A:H4'    | 8:CB:2148:G:C8     | 2.41                     | 0.54              |
| 8:CB:2334:U:N3     | 21:CO:15:ARG:HG3   | 2.23                     | 0.54              |
| 8:CB:2498:C:OP2    | 8:CB:2499:C:OP2    | 2.26                     | 0.54              |
| 8:CB:2524:G:O6     | 8:CB:2540:C:C4     | 2.59                     | 0.54              |
| 8:CB:2574:G:N3     | 8:CB:2575:C:C6     | 2.75                     | 0.54              |
| 8:CB:2581:G:C2'    | 8:CB:2610:C:H41    | 2.20                     | 0.54              |
| 8:CB:2592:G:C2     | 8:CB:2593:U:O2     | 2.61                     | 0.54              |
| 8:CB:2597:G:OP1    | 9:CC:239:PHE:CD2   | 2.60                     | 0.54              |
| 8:CB:2636:C:P      | 10:CD:79:LEU:HD12  | 2.47                     | 0.54              |
| 8:CB:2788:C:H2'    | 8:CB:2789:C:H6     | 1.69                     | 0.54              |
| 8:CB:2821:A:C8     | 8:CB:2821:A:C3'    | 2.90                     | 0.54              |
| 10:CD:144:GLY:O    | 10:CD:145:SER:O    | 2.24                     | 0.54              |
| 13:CG:104:LEU:C    | 13:CG:111:PRO:HB3  | 2.28                     | 0.54              |
| 14:CH:113:SER:N    | 14:CH:132:PHE:CE2  | 2.72                     | 0.54              |
| 16:CJ:37:ARG:HG3   | 16:CJ:118:MET:CE   | 2.38                     | 0.54              |
| 20:CN:99:LYS:HD2   | 20:CN:99:LYS:N     | 2.21                     | 0.54              |
| 20:CN:115:LEU:HD23 | 20:CN:115:LEU:N    | 2.19                     | 0.54              |
| 25:CS:29:VAL:HG21  | 25:CS:69:LEU:C     | 2.27                     | 0.54              |
| 26:CT:65:GLY:O     | 26:CT:66:LYS:CB    | 2.54                     | 0.54              |
| 28:CV:85:LYS:O     | 28:CV:86:LEU:HD12  | 2.07                     | 0.54              |
| 32:CZ:56:ARG:HH11  | 32:CZ:56:ARG:HG3   | 1.72                     | 0.54              |
| 33:DA:32:A:C2      | 33:DA:33:A:C5      | 2.96                     | 0.54              |
| 33:DA:110:C:O2     | 33:DA:110:C:H2'    | 2.06                     | 0.54              |
| 33:DA:158:G:O6     | 33:DA:164:G:C5     | 2.60                     | 0.54              |
| 33:DA:432:A:C5     | 33:DA:433:G:H8     | 2.24                     | 0.54              |
| 33:DA:465:A:H8     | 33:DA:466:A:N7     | 2.05                     | 0.54              |
| 33:DA:629:A:O5'    | 33:DA:629:A:H8     | 1.90                     | 0.54              |
| 33:DA:829:G:C6     | 33:DA:858:G:N2     | 2.75                     | 0.54              |
| 33:DA:854:U:O2     | 33:DA:854:U:C2'    | 2.55                     | 0.54              |
| 33:DA:888:G:H1'    | 33:DA:909:A:N6     | 2.23                     | 0.54              |
| 33:DA:1078:U:C5'   | 37:DE:137:ARG:HH12 | 2.19                     | 0.54              |
| 33:DA:1092:A:N1    | 33:DA:1093:A:C2    | 2.76                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1400:C:H4'  | 33:DA:1401:G:OP2  | 2.06                     | 0.54              |
| 37:DE:80:LEU:HB2  | 37:DE:122:VAL:CG1 | 2.37                     | 0.54              |
| 44:DL:35:ARG:NE   | 44:DL:35:ARG:HA   | 2.23                     | 0.54              |
| 45:DM:47:LEU:O    | 45:DM:47:LEU:HD23 | 2.08                     | 0.54              |
| 5:A4:23:ILE:HG13  | 5:A4:24:ARG:N     | 2.20                     | 0.54              |
| 7:AA:65:U:O2'     | 7:AA:66:A:H5'     | 2.07                     | 0.54              |
| 8:AB:298:G:N2     | 8:AB:339:U:C5     | 2.76                     | 0.54              |
| 8:AB:465:G:O2'    | 8:AB:466:A:H5'    | 2.07                     | 0.54              |
| 8:AB:604:G:H2'    | 8:AB:605:G:C8     | 2.43                     | 0.54              |
| 8:AB:679:C:C2     | 8:AB:680:C:H5     | 2.25                     | 0.54              |
| 8:AB:728:G:H3'    | 8:AB:729:G:H5''   | 1.88                     | 0.54              |
| 8:AB:738:G:H1'    | 8:AB:759:G:N2     | 2.22                     | 0.54              |
| 8:AB:771:G:N1     | 8:AB:772:C:C4     | 2.75                     | 0.54              |
| 8:AB:970:U:O5'    | 8:AB:970:U:H6     | 1.90                     | 0.54              |
| 8:AB:975:A:H8     | 8:AB:975:A:H5'    | 1.72                     | 0.54              |
| 8:AB:1190:G:O2'   | 8:AB:1191:G:H5'   | 2.08                     | 0.54              |
| 8:AB:1418:G:H1'   | 8:AB:1581:G:N2    | 2.22                     | 0.54              |
| 8:AB:1451:C:OP1   | 8:AB:1451:C:H4'   | 2.07                     | 0.54              |
| 8:AB:1819:A:H1'   | 8:AB:1821:A:C5    | 2.43                     | 0.54              |
| 8:AB:2304:G:O6    | 55:AB:4620:HOH:O  | 2.19                     | 0.54              |
| 8:AB:2757:A:C8    | 8:AB:2757:A:H5''  | 2.43                     | 0.54              |
| 9:AC:22:GLU:OE1   | 9:AC:22:GLU:HA    | 2.06                     | 0.54              |
| 11:AE:83:VAL:O    | 11:AE:83:VAL:HG23 | 2.07                     | 0.54              |
| 14:AH:89:LYS:HZ2  | 14:AH:123:ARG:HD3 | 1.72                     | 0.54              |
| 19:AM:60:GLN:C    | 19:AM:62:LYS:H    | 2.11                     | 0.54              |
| 20:AN:87:PHE:HB3  | 20:AN:94:TYR:CZ   | 2.43                     | 0.54              |
| 21:AO:1:MET:CG    | 21:AO:2:ASP:H     | 2.03                     | 0.54              |
| 27:AU:11:ILE:H    | 27:AU:69:VAL:HG12 | 1.72                     | 0.54              |
| 27:AU:82:VAL:HB   | 27:AU:94:PHE:HB3  | 1.88                     | 0.54              |
| 30:AX:18:LEU:HD22 | 30:AX:19:LEU:N    | 2.22                     | 0.54              |
| 33:BA:237:G:H2'   | 33:BA:238:A:H8    | 1.65                     | 0.54              |
| 33:BA:325:A:H2'   | 33:BA:326:G:O4'   | 2.08                     | 0.54              |
| 33:BA:394:G:N2    | 33:BA:395:C:C2    | 2.75                     | 0.54              |
| 33:BA:628:G:C2    | 33:BA:629:A:N3    | 2.76                     | 0.54              |
| 33:BA:1519:A:H3'  | 33:BA:1520:C:C5'  | 2.37                     | 0.54              |
| 34:BB:17:HIS:CD2  | 34:BB:18:GLN:NE2  | 2.72                     | 0.54              |
| 34:BB:89:PHE:HE2  | 34:BB:153:MET:N   | 2.05                     | 0.54              |
| 38:BF:93:LYS:O    | 38:BF:94:HIS:HB2  | 2.06                     | 0.54              |
| 47:BO:35:ILE:CD1  | 47:BO:55:LEU:HD12 | 2.38                     | 0.54              |
| 2:C1:42:VAL:O     | 2:C1:43:ARG:HB2   | 2.07                     | 0.54              |
| 5:C4:24:ARG:O     | 5:C4:35:GLN:O     | 2.25                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 7:CA:31:C:O2'      | 7:CA:32:U:O4'     | 2.26                     | 0.54              |
| 8:CB:402:A:N7      | 8:CB:403:U:C5     | 2.76                     | 0.54              |
| 8:CB:517:C:H2'     | 8:CB:518:G:O5'    | 2.06                     | 0.54              |
| 8:CB:532:A:H5'     | 8:CB:533:G:O4'    | 2.07                     | 0.54              |
| 8:CB:661:A:H4'     | 18:CL:23:ILE:HG23 | 1.88                     | 0.54              |
| 8:CB:848:C:H2'     | 8:CB:849:A:C8     | 2.43                     | 0.54              |
| 8:CB:993:G:H2'     | 8:CB:994:C:H5'    | 1.89                     | 0.54              |
| 8:CB:1063:G:O4'    | 15:CI:90:GLY:CA   | 2.55                     | 0.54              |
| 8:CB:1217:U:O2     | 8:CB:1217:U:H2'   | 2.07                     | 0.54              |
| 8:CB:1218:G:C6     | 8:CB:1232:G:O6    | 2.61                     | 0.54              |
| 8:CB:1223:G:O6     | 24:CR:90:ARG:NH2  | 2.38                     | 0.54              |
| 8:CB:1287:A:OP1    | 20:CN:104:ALA:O   | 2.25                     | 0.54              |
| 8:CB:1397:U:O2'    | 8:CB:1398:C:H5'   | 2.08                     | 0.54              |
| 8:CB:1707:G:H2'    | 8:CB:1708:C:C5'   | 2.36                     | 0.54              |
| 8:CB:1733:G:H5'    | 8:CB:1733:G:H8    | 1.72                     | 0.54              |
| 8:CB:1737:G:C2     | 8:CB:1738:G:N2    | 2.75                     | 0.54              |
| 8:CB:1742:U:H2'    | 8:CB:1743:G:C8    | 2.42                     | 0.54              |
| 8:CB:1889:A:C8     | 8:CB:1889:A:H3'   | 2.43                     | 0.54              |
| 8:CB:1899:A:C8     | 8:CB:1899:A:H3'   | 2.42                     | 0.54              |
| 8:CB:1920:C:O2'    | 33:DA:1496:C:H4'  | 2.07                     | 0.54              |
| 8:CB:1935:G:N2     | 8:CB:1964:G:C4    | 2.75                     | 0.54              |
| 8:CB:2360:G:N2     | 8:CB:2428:G:C4    | 2.76                     | 0.54              |
| 8:CB:2367:G:H8     | 8:CB:2367:G:O5'   | 1.90                     | 0.54              |
| 8:CB:2409:G:H2'    | 8:CB:2410:G:O4'   | 2.08                     | 0.54              |
| 8:CB:2777:G:C8     | 8:CB:2777:G:C3'   | 2.90                     | 0.54              |
| 9:CC:21:PRO:HD2    | 9:CC:202:ARG:NH1  | 2.23                     | 0.54              |
| 9:CC:72:GLY:O      | 9:CC:73:ILE:HG13  | 2.07                     | 0.54              |
| 11:CE:116:ASP:OD1  | 11:CE:185:LYS:HA  | 2.07                     | 0.54              |
| 12:CF:64:PRO:HA    | 12:CF:88:VAL:CG2  | 2.37                     | 0.54              |
| 12:CF:126:ASN:ND2  | 12:CF:157:THR:H   | 2.05                     | 0.54              |
| 12:CF:135:ILE:HD11 | 12:CF:138:PRO:HA  | 1.89                     | 0.54              |
| 13:CG:37:ASN:OD1   | 13:CG:63:GLN:HG3  | 2.08                     | 0.54              |
| 13:CG:67:ALA:O     | 13:CG:70:LEU:N    | 2.41                     | 0.54              |
| 14:CH:50:ARG:HB2   | 14:CH:54:LEU:CD1  | 2.37                     | 0.54              |
| 23:CQ:64:ILE:HG12  | 23:CQ:95:ALA:HB2  | 1.87                     | 0.54              |
| 23:CQ:90:ASP:O     | 23:CQ:91:ARG:HB3  | 2.07                     | 0.54              |
| 24:CR:39:LEU:N     | 24:CR:61:ALA:HB1  | 2.23                     | 0.54              |
| 24:CR:80:ARG:CG    | 24:CR:85:LYS:HA   | 2.37                     | 0.54              |
| 33:DA:109:A:C5     | 33:DA:326:G:C2    | 2.96                     | 0.54              |
| 33:DA:158:G:C2     | 33:DA:159:G:C8    | 2.96                     | 0.54              |
| 33:DA:411:A:C2     | 33:DA:429:U:O4    | 2.60                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:467:U:H3'   | 33:DA:467:U:H6     | 1.73                     | 0.54              |
| 33:DA:501:C:H2'   | 33:DA:502:A:C8     | 2.42                     | 0.54              |
| 33:DA:610:U:H2'   | 33:DA:611:C:C6     | 2.42                     | 0.54              |
| 33:DA:743:A:H2'   | 33:DA:744:C:O5'    | 2.08                     | 0.54              |
| 33:DA:907:A:N3    | 33:DA:908:A:C8     | 2.76                     | 0.54              |
| 33:DA:1006:G:H1   | 33:DA:1024:G:H1'   | 1.71                     | 0.54              |
| 33:DA:1242:G:H2'  | 33:DA:1243:C:C6    | 2.42                     | 0.54              |
| 33:DA:1319:A:N7   | 33:DA:1323:G:C2    | 2.75                     | 0.54              |
| 40:DH:109:VAL:O   | 40:DH:109:VAL:HG12 | 2.07                     | 0.54              |
| 42:DJ:34:ALA:HB3  | 42:DJ:78:GLU:CG    | 2.35                     | 0.54              |
| 51:DS:10:ILE:HG23 | 51:DS:38:THR:H     | 1.72                     | 0.54              |
| 53:DU:52:VAL:CG1  | 53:DU:53:LYS:N     | 2.70                     | 0.54              |
| 3:A2:17:GLY:H     | 3:A2:21:ARG:NH1    | 2.05                     | 0.54              |
| 8:AB:139:U:N3     | 26:AT:1:MET:HB2    | 2.23                     | 0.54              |
| 8:AB:226:A:C6     | 8:AB:227:A:C6      | 2.95                     | 0.54              |
| 8:AB:524:G:C5     | 8:AB:525:U:C5      | 2.95                     | 0.54              |
| 8:AB:734:A:C5     | 8:AB:735:A:C8      | 2.95                     | 0.54              |
| 8:AB:848:C:H2'    | 8:AB:849:A:C8      | 2.42                     | 0.54              |
| 8:AB:900:A:N3     | 8:AB:900:A:H2'     | 2.22                     | 0.54              |
| 8:AB:902:C:N3     | 8:AB:903:C:C5      | 2.75                     | 0.54              |
| 8:AB:980:A:N7     | 8:AB:1136:G:C5'    | 2.70                     | 0.54              |
| 8:AB:1101:U:H2'   | 8:AB:1102:C:H6     | 1.70                     | 0.54              |
| 8:AB:1218:G:C2    | 8:AB:1232:G:C5     | 2.95                     | 0.54              |
| 8:AB:1361:G:C2    | 8:AB:1362:C:C5     | 2.95                     | 0.54              |
| 8:AB:1545:A:H2'   | 8:AB:1546:G:O4'    | 2.06                     | 0.54              |
| 8:AB:1719:G:C4    | 8:AB:1720:U:C6     | 2.95                     | 0.54              |
| 8:AB:1733:G:H5'   | 8:AB:1733:G:C8     | 2.42                     | 0.54              |
| 8:AB:1737:G:C2    | 8:AB:1738:G:N2     | 2.75                     | 0.54              |
| 8:AB:1803:A:H2'   | 8:AB:1804:C:O4'    | 2.08                     | 0.54              |
| 8:AB:1814:G:H3'   | 8:AB:1815:A:C5'    | 2.37                     | 0.54              |
| 8:AB:1967:C:N4    | 8:AB:1968:G:C6     | 2.76                     | 0.54              |
| 8:AB:2261:C:H5''  | 8:AB:2262:U:OP2    | 2.07                     | 0.54              |
| 8:AB:2865:U:C2    | 8:AB:2866:U:C5     | 2.95                     | 0.54              |
| 8:AB:2885:G:C6    | 8:AB:2886:A:C8     | 2.92                     | 0.54              |
| 9:AC:30:ALA:N     | 9:AC:31:PRO:CD     | 2.70                     | 0.54              |
| 9:AC:48:ILE:HG22  | 9:AC:49:THR:N      | 2.23                     | 0.54              |
| 10:AD:11:MET:O    | 10:AD:23:PRO:CD    | 2.51                     | 0.54              |
| 11:AE:141:MET:O   | 11:AE:143:LEU:N    | 2.39                     | 0.54              |
| 11:AE:198:GLU:OE1 | 11:AE:198:GLU:HA   | 2.07                     | 0.54              |
| 13:AG:162:ARG:NH2 | 13:AG:168:VAL:CG1  | 2.70                     | 0.54              |
| 21:AO:2:ASP:HA    | 21:AO:6:ALA:HB2    | 1.89                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 24:AR:74:ILE:H     | 24:AR:92:TRP:HD1  | 1.56                     | 0.54              |
| 31:AY:19:HIS:C     | 31:AY:21:ALA:H    | 2.11                     | 0.54              |
| 33:BA:51:A:N1      | 33:BA:314:C:O2'   | 2.37                     | 0.54              |
| 33:BA:578:C:O2     | 33:BA:579:A:C8    | 2.60                     | 0.54              |
| 33:BA:705:G:C2'    | 33:BA:706:A:H5''  | 2.38                     | 0.54              |
| 33:BA:975:A:H2     | 42:BJ:52:LEU:HD11 | 1.70                     | 0.54              |
| 33:BA:1526:G:C6    | 33:BA:1527:U:C5   | 2.95                     | 0.54              |
| 35:BC:9:ILE:O      | 35:BC:10:ARG:HD3  | 2.08                     | 0.54              |
| 35:BC:199:VAL:HG23 | 35:BC:199:VAL:O   | 2.08                     | 0.54              |
| 41:BI:15:ALA:O     | 41:BI:66:VAL:HG23 | 2.07                     | 0.54              |
| 42:BJ:65:TYR:CE2   | 46:BN:97:LYS:HD3  | 2.43                     | 0.54              |
| 43:BK:124:LYS:O    | 53:BU:33:ARG:CZ   | 2.55                     | 0.54              |
| 47:BO:16:ARG:HH11  | 47:BO:76:ARG:NH1  | 2.06                     | 0.54              |
| 1:C0:27:LEU:O      | 1:C0:28:SER:OG    | 2.25                     | 0.54              |
| 1:C0:48:TYR:OH     | 8:CB:2884:U:N3    | 2.41                     | 0.54              |
| 7:CA:46:A:O3'      | 21:CO:1:MET:HB2   | 2.06                     | 0.54              |
| 8:CB:26:G:H2'      | 8:CB:27:G:O4'     | 2.07                     | 0.54              |
| 8:CB:77:G:N3       | 8:CB:110:G:N2     | 2.56                     | 0.54              |
| 8:CB:236:C:O2'     | 8:CB:431:U:H4'    | 2.08                     | 0.54              |
| 8:CB:409:G:H8      | 8:CB:409:G:O5'    | 1.90                     | 0.54              |
| 8:CB:524:G:C5      | 8:CB:525:U:C5     | 2.96                     | 0.54              |
| 8:CB:572:A:N7      | 8:CB:573:U:C5     | 2.75                     | 0.54              |
| 8:CB:833:A:H1'     | 18:CL:54:GLN:HB3  | 1.89                     | 0.54              |
| 8:CB:1021:A:C2     | 8:CB:1023:U:C2    | 2.96                     | 0.54              |
| 8:CB:1025:G:C6     | 8:CB:1135:C:C6    | 2.95                     | 0.54              |
| 8:CB:1466:U:H3'    | 8:CB:1466:U:C6    | 2.43                     | 0.54              |
| 8:CB:1476:U:O2'    | 8:CB:1477:A:H5'   | 2.07                     | 0.54              |
| 8:CB:1609:A:C2     | 8:CB:1616:A:C5    | 2.96                     | 0.54              |
| 8:CB:1775:U:H2'    | 8:CB:1776:G:H5'   | 1.90                     | 0.54              |
| 8:CB:1809:A:H3'    | 8:CB:1810:A:H8    | 1.73                     | 0.54              |
| 8:CB:1831:G:O2'    | 8:CB:1832:C:H5'   | 2.08                     | 0.54              |
| 8:CB:2050:C:H1'    | 10:CD:161:MET:HE1 | 1.90                     | 0.54              |
| 8:CB:2259:U:H1'    | 8:CB:2427:C:C2    | 2.42                     | 0.54              |
| 8:CB:2335:A:N7     | 8:CB:2337:G:C6    | 2.76                     | 0.54              |
| 8:CB:2467:C:O4'    | 19:CM:118:LYS:HG2 | 2.08                     | 0.54              |
| 8:CB:2515:C:C2'    | 8:CB:2516:A:O5'   | 2.56                     | 0.54              |
| 8:CB:2676:C:H3'    | 8:CB:2676:C:C6    | 2.43                     | 0.54              |
| 9:CC:22:GLU:HA     | 9:CC:202:ARG:HH21 | 1.71                     | 0.54              |
| 9:CC:80:LEU:N      | 9:CC:80:LEU:HD23  | 2.23                     | 0.54              |
| 9:CC:212:TRP:CH2   | 9:CC:217:PRO:HD3  | 2.43                     | 0.54              |
| 9:CC:229:HIS:NE2   | 9:CC:244:VAL:HG23 | 2.23                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:CK:108:ARG:HH11 | 17:CK:108:ARG:CG   | 2.00                     | 0.54              |
| 19:CM:18:ARG:NH1   | 19:CM:92:TRP:CZ3   | 2.75                     | 0.54              |
| 21:CO:60:GLU:O     | 21:CO:61:GLN:O     | 2.24                     | 0.54              |
| 23:CQ:12:ARG:O     | 23:CQ:15:LYS:HB3   | 2.08                     | 0.54              |
| 24:CR:79:ARG:HG2   | 24:CR:80:ARG:H     | 1.73                     | 0.54              |
| 33:DA:133:U:O2     | 33:DA:230:G:C6     | 2.60                     | 0.54              |
| 33:DA:411:A:HO2'   | 33:DA:412:A:H4'    | 1.72                     | 0.54              |
| 33:DA:450:G:H3'    | 33:DA:451:A:H5''   | 1.90                     | 0.54              |
| 33:DA:525:C:C4     | 33:DA:526:C:H5     | 2.25                     | 0.54              |
| 33:DA:570:G:H1'    | 33:DA:820:U:N3     | 2.22                     | 0.54              |
| 33:DA:631:C:C5'    | 33:DA:632:U:H5'    | 2.30                     | 0.54              |
| 33:DA:715:A:H2'    | 33:DA:716:A:H8     | 1.73                     | 0.54              |
| 33:DA:813:U:C2'    | 33:DA:814:A:H5'    | 2.37                     | 0.54              |
| 33:DA:1410:A:C2    | 33:DA:1491:G:N3    | 2.76                     | 0.54              |
| 34:DB:150:ILE:O    | 34:DB:150:ILE:HG23 | 2.08                     | 0.54              |
| 36:DD:123:MET:SD   | 36:DD:145:ARG:HG3  | 2.48                     | 0.54              |
| 36:DD:187:ARG:CZ   | 36:DD:191:SER:HB3  | 2.37                     | 0.54              |
| 38:DF:74:LEU:HD22  | 38:DF:74:LEU:C     | 2.28                     | 0.54              |
| 40:DH:6:ILE:HB     | 40:DH:76:ARG:NH1   | 2.23                     | 0.54              |
| 47:DO:31:LEU:O     | 47:DO:35:ILE:HG12  | 2.07                     | 0.54              |
| 1:A0:18:HIS:CE1    | 8:AB:2045:C:O2     | 2.60                     | 0.54              |
| 7:AA:110:C:H2'     | 7:AA:111:U:O4'     | 2.07                     | 0.54              |
| 8:AB:37:C:O2'      | 11:AE:46:GLN:NE2   | 2.40                     | 0.54              |
| 8:AB:112:U:H5'     | 30:AX:58:ASN:ND2   | 2.22                     | 0.54              |
| 8:AB:181:A:H1'     | 8:AB:435:C:C5'     | 2.36                     | 0.54              |
| 8:AB:185:G:O2'     | 8:AB:186:G:H5'     | 2.08                     | 0.54              |
| 8:AB:194:G:C5'     | 8:AB:195:A:OP2     | 2.56                     | 0.54              |
| 8:AB:297:G:C5      | 8:AB:342:A:N1      | 2.75                     | 0.54              |
| 8:AB:347:A:H3'     | 8:AB:347:A:C8      | 2.43                     | 0.54              |
| 8:AB:349:U:O2'     | 8:AB:350:G:H5''    | 2.08                     | 0.54              |
| 8:AB:644:A:H2'     | 8:AB:644:A:N3      | 2.21                     | 0.54              |
| 8:AB:685:A:C4      | 8:AB:689:A:N6      | 2.76                     | 0.54              |
| 8:AB:734:A:C4      | 8:AB:735:A:C8      | 2.95                     | 0.54              |
| 8:AB:1334:G:C2'    | 8:AB:1335:C:H5'    | 2.37                     | 0.54              |
| 8:AB:1427:A:H1'    | 8:AB:1428:C:C5     | 2.42                     | 0.54              |
| 8:AB:1707:G:C8     | 8:AB:1756:G:C4     | 2.96                     | 0.54              |
| 8:AB:1792:G:O5'    | 9:AC:203:VAL:HG23  | 2.08                     | 0.54              |
| 8:AB:1989:G:H2'    | 8:AB:1990:C:C5'    | 2.38                     | 0.54              |
| 8:AB:2360:G:H1'    | 18:AL:61:LEU:HD23  | 1.88                     | 0.54              |
| 8:AB:2552:U:H5''   | 8:AB:2553:G:OP2    | 2.08                     | 0.54              |
| 8:AB:2645:G:C5'    | 8:AB:2645:G:H8     | 2.20                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2841:C:H2'   | 8:AB:2842:G:O4'    | 2.07                     | 0.54              |
| 10:AD:36:GLN:HB3  | 10:AD:47:ALA:HA    | 1.88                     | 0.54              |
| 10:AD:151:THR:O   | 10:AD:153:GLY:N    | 2.40                     | 0.54              |
| 11:AE:158:PHE:CD1 | 11:AE:169:VAL:HG12 | 2.42                     | 0.54              |
| 14:AH:26:ALA:CB   | 14:AH:30:LEU:HB3   | 2.38                     | 0.54              |
| 16:AJ:81:ILE:HG13 | 16:AJ:83:GLY:H     | 1.73                     | 0.54              |
| 23:AQ:13:HIS:O    | 23:AQ:14:LYS:C     | 2.44                     | 0.54              |
| 23:AQ:97:ILE:HA   | 23:AQ:100:PHE:CE2  | 2.42                     | 0.54              |
| 30:AX:16:THR:C    | 30:AX:18:LEU:N     | 2.59                     | 0.54              |
| 30:AX:22:LEU:O    | 30:AX:22:LEU:HD23  | 2.08                     | 0.54              |
| 33:BA:182:A:C2    | 33:BA:184:G:C5     | 2.96                     | 0.54              |
| 33:BA:385:C:O2'   | 33:BA:386:C:H5'    | 2.06                     | 0.54              |
| 33:BA:562:U:H3    | 33:BA:884:U:H5     | 1.53                     | 0.54              |
| 33:BA:719:C:O2    | 50:BR:38:ILE:HG22  | 2.08                     | 0.54              |
| 33:BA:909:A:C4    | 33:BA:910:C:C6     | 2.96                     | 0.54              |
| 33:BA:941:G:N1    | 33:BA:1343:G:C6    | 2.75                     | 0.54              |
| 33:BA:1365:G:C2   | 33:BA:1366:C:C2    | 2.95                     | 0.54              |
| 35:BC:51:VAL:CG2  | 35:BC:52:SER:N     | 2.70                     | 0.54              |
| 35:BC:151:GLU:O   | 35:BC:198:LYS:N    | 2.39                     | 0.54              |
| 43:BK:27:ASN:O    | 43:BK:56:LYS:HE3   | 2.07                     | 0.54              |
| 43:BK:32:THR:HG23 | 43:BK:32:THR:O     | 2.08                     | 0.54              |
| 46:BN:1:ALA:CB    | 46:BN:67:GLY:HA3   | 2.36                     | 0.54              |
| 51:BS:62:THR:HG22 | 51:BS:63:ASP:H     | 1.72                     | 0.54              |
| 2:C1:23:THR:HG22  | 4:C3:34:LYS:O      | 2.08                     | 0.54              |
| 4:C3:51:LYS:C     | 4:C3:53:ASP:N      | 2.61                     | 0.54              |
| 8:CB:104:A:C4     | 8:CB:105:C:C5      | 2.96                     | 0.54              |
| 8:CB:265:A:H2'    | 8:CB:266:G:O4'     | 2.06                     | 0.54              |
| 8:CB:309:A:O3'    | 27:CU:15:GLY:HA2   | 2.07                     | 0.54              |
| 8:CB:311:A:H3'    | 8:CB:312:G:N7      | 2.22                     | 0.54              |
| 8:CB:449:A:H2'    | 8:CB:450:G:C5'     | 2.37                     | 0.54              |
| 8:CB:699:A:H4'    | 8:CB:1634:A:N7     | 2.23                     | 0.54              |
| 8:CB:748:G:C2     | 8:CB:750:A:N6      | 2.76                     | 0.54              |
| 8:CB:790:U:C5     | 8:CB:791:C:H5      | 2.25                     | 0.54              |
| 8:CB:1368:G:H2'   | 8:CB:1369:G:H8     | 1.72                     | 0.54              |
| 8:CB:1469:A:C2    | 8:CB:1470:A:C2     | 2.96                     | 0.54              |
| 8:CB:1802:A:N6    | 8:CB:1817:G:N2     | 2.55                     | 0.54              |
| 8:CB:2011:U:H2'   | 8:CB:2012:G:C8     | 2.43                     | 0.54              |
| 8:CB:2141:G:N2    | 8:CB:2151:U:H1'    | 2.23                     | 0.54              |
| 8:CB:2636:C:H2'   | 8:CB:2637:U:H6     | 1.69                     | 0.54              |
| 8:CB:2636:C:C4'   | 10:CD:80:TRP:HZ2   | 2.21                     | 0.54              |
| 8:CB:2835:A:N7    | 8:CB:2879:A:N1     | 2.56                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:CC:19:VAL:HG12  | 9:CC:20:ASN:H     | 1.73                     | 0.54              |
| 10:CD:49:GLN:O    | 10:CD:78:GLY:HA2  | 2.07                     | 0.54              |
| 11:CE:154:ASP:CG  | 11:CE:155:GLU:N   | 2.61                     | 0.54              |
| 13:CG:18:ILE:HD11 | 13:CG:44:HIS:H    | 1.73                     | 0.54              |
| 13:CG:53:PRO:HG3  | 13:CG:61:TRP:CE3  | 2.42                     | 0.54              |
| 14:CH:8:LYS:HG3   | 14:CH:9:VAL:N     | 2.23                     | 0.54              |
| 16:CJ:79:GLY:C    | 16:CJ:81:ILE:H    | 2.11                     | 0.54              |
| 22:CP:4:ILE:HA    | 22:CP:7:LEU:HB2   | 1.89                     | 0.54              |
| 23:CQ:108:LEU:HA  | 23:CQ:111:LYS:CE  | 2.34                     | 0.54              |
| 25:CS:63:GLY:O    | 25:CS:64:ALA:CB   | 2.55                     | 0.54              |
| 26:CT:20:ALA:HA   | 26:CT:23:ALA:HB2  | 1.90                     | 0.54              |
| 27:CU:33:VAL:HG12 | 27:CU:33:VAL:O    | 2.08                     | 0.54              |
| 27:CU:43:LYS:HA   | 27:CU:57:ILE:HB   | 1.89                     | 0.54              |
| 33:DA:51:A:N1     | 33:DA:314:C:O2'   | 2.37                     | 0.54              |
| 33:DA:113:G:C2    | 33:DA:315:A:C2    | 2.96                     | 0.54              |
| 33:DA:151:A:C4    | 33:DA:152:A:C8    | 2.95                     | 0.54              |
| 33:DA:465:A:H8    | 33:DA:466:A:C8    | 2.26                     | 0.54              |
| 33:DA:771:G:O2'   | 33:DA:772:U:H5'   | 2.07                     | 0.54              |
| 33:DA:782:A:N7    | 33:DA:783:C:C4    | 2.75                     | 0.54              |
| 33:DA:828:U:H5    | 33:DA:829:G:C8    | 2.26                     | 0.54              |
| 33:DA:832:G:C6    | 33:DA:833:G:C6    | 2.96                     | 0.54              |
| 33:DA:954:G:N1    | 33:DA:955:U:O2    | 2.40                     | 0.54              |
| 33:DA:1060:U:O2   | 33:DA:1060:U:H2'  | 2.06                     | 0.54              |
| 33:DA:1157:A:N6   | 33:DA:1177:G:N2   | 2.56                     | 0.54              |
| 33:DA:1244:G:H2'  | 33:DA:1245:C:C6   | 2.42                     | 0.54              |
| 33:DA:1315:U:H2'  | 33:DA:1316:G:O4'  | 2.07                     | 0.54              |
| 33:DA:1433:A:C8   | 33:DA:1433:A:H3'  | 2.42                     | 0.54              |
| 33:DA:1504:G:H4'  | 33:DA:1505:G:N9   | 2.23                     | 0.54              |
| 38:DF:75:GLU:O    | 38:DF:78:PHE:HB2  | 2.07                     | 0.54              |
| 43:DK:93:GLU:O    | 43:DK:96:ILE:N    | 2.41                     | 0.54              |
| 46:DN:11:LYS:O    | 46:DN:15:LEU:HD12 | 2.07                     | 0.54              |
| 8:AB:102:U:C6     | 30:AX:4:LYS:NZ    | 2.70                     | 0.54              |
| 8:AB:141:G:H22    | 26:AT:1:MET:CE    | 2.21                     | 0.54              |
| 8:AB:260:G:C6     | 8:AB:261:G:C4     | 2.95                     | 0.54              |
| 8:AB:382:A:C2     | 8:AB:383:C:H1'    | 2.43                     | 0.54              |
| 8:AB:527:C:H5''   | 8:AB:2779:U:C2    | 2.43                     | 0.54              |
| 8:AB:565:C:OP1    | 24:AR:82:HIS:HA   | 2.07                     | 0.54              |
| 8:AB:586:A:C2     | 8:AB:810:U:O4'    | 2.61                     | 0.54              |
| 8:AB:797:G:C6     | 8:AB:798:G:C8     | 2.95                     | 0.54              |
| 8:AB:863:A:N6     | 55:AB:4407:HOH:O  | 2.40                     | 0.54              |
| 8:AB:1351:C:O2'   | 8:AB:1571:A:H1'   | 2.08                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:1359:A:H5'    | 8:AB:1359:A:H8    | 1.73                     | 0.54              |
| 8:AB:1435:G:O5'    | 8:AB:1435:G:H8    | 1.91                     | 0.54              |
| 8:AB:1614:A:H8     | 8:AB:1614:A:O5'   | 1.90                     | 0.54              |
| 8:AB:1952:A:OP1    | 17:AK:42:THR:HG21 | 2.07                     | 0.54              |
| 8:AB:1965:C:C4     | 8:AB:1966:A:C6    | 2.96                     | 0.54              |
| 8:AB:2102:G:C2     | 8:AB:2188:U:C2    | 2.96                     | 0.54              |
| 8:AB:2461:A:C4     | 8:AB:2462:C:C6    | 2.95                     | 0.54              |
| 8:AB:2694:G:H8     | 8:AB:2694:G:C5'   | 2.21                     | 0.54              |
| 9:AC:17:LYS:O      | 9:AC:18:VAL:HG13  | 2.08                     | 0.54              |
| 10:AD:67:HIS:CG    | 10:AD:71:ALA:HB3  | 2.43                     | 0.54              |
| 11:AE:43:THR:CG2   | 11:AE:44:ARG:NH2  | 2.69                     | 0.54              |
| 13:AG:100:ASN:HD21 | 13:AG:118:ALA:HA  | 1.72                     | 0.54              |
| 16:AJ:25:LEU:H     | 16:AJ:62:VAL:HG12 | 1.72                     | 0.54              |
| 16:AJ:78:THR:N     | 16:AJ:84:ILE:HG21 | 2.10                     | 0.54              |
| 20:AN:20:MET:HE3   | 20:AN:21:PHE:CE1  | 2.42                     | 0.54              |
| 20:AN:60:VAL:C     | 20:AN:62:ASN:H    | 2.11                     | 0.54              |
| 21:AO:25:ARG:HH12  | 21:AO:94:ARG:HD2  | 1.73                     | 0.54              |
| 21:AO:49:VAL:C     | 21:AO:83:LEU:HD11 | 2.27                     | 0.54              |
| 24:AR:22:LEU:O     | 24:AR:96:VAL:N    | 2.40                     | 0.54              |
| 27:AU:16:LYS:O     | 27:AU:16:LYS:HG3  | 2.08                     | 0.54              |
| 29:AW:55:ASP:CG    | 29:AW:56:HIS:N    | 2.58                     | 0.54              |
| 32:AZ:66:ILE:O     | 32:AZ:70:LYS:HB2  | 2.07                     | 0.54              |
| 33:BA:57:G:C8      | 33:BA:57:G:O5'    | 2.60                     | 0.54              |
| 33:BA:151:A:C4     | 33:BA:152:A:C8    | 2.96                     | 0.54              |
| 33:BA:244:U:C6     | 33:BA:894:G:C2    | 2.96                     | 0.54              |
| 33:BA:324:G:N2     | 33:BA:327:A:N7    | 2.55                     | 0.54              |
| 33:BA:451:A:O4'    | 33:BA:452:A:N7    | 2.41                     | 0.54              |
| 33:BA:571:U:O2     | 33:BA:917:G:O2'   | 2.19                     | 0.54              |
| 33:BA:618:C:H1'    | 48:BP:14:ARG:NH1  | 2.23                     | 0.54              |
| 33:BA:623:C:H2'    | 33:BA:624:C:H6    | 1.73                     | 0.54              |
| 33:BA:640:A:H2'    | 40:BH:106:SER:OG  | 2.08                     | 0.54              |
| 33:BA:668:G:N2     | 47:BO:45:HIS:CE1  | 2.63                     | 0.54              |
| 33:BA:669:G:C2     | 33:BA:738:C:N3    | 2.76                     | 0.54              |
| 33:BA:784:A:H2'    | 33:BA:785:G:H8    | 1.73                     | 0.54              |
| 33:BA:882:C:O2'    | 33:BA:883:C:H5'   | 2.07                     | 0.54              |
| 33:BA:927:G:O5'    | 33:BA:1503:A:N7   | 2.41                     | 0.54              |
| 33:BA:1001:C:H3'   | 33:BA:1001:C:C6   | 2.42                     | 0.54              |
| 33:BA:1069:C:O2'   | 33:BA:1192:C:H1'  | 2.08                     | 0.54              |
| 33:BA:1081:A:OP2   | 37:BE:20:VAL:HG12 | 2.06                     | 0.54              |
| 33:BA:1317:C:H5    | 46:BN:58:ARG:HH21 | 1.53                     | 0.54              |
| 33:BA:1525:G:H3'   | 33:BA:1525:G:C8   | 2.43                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:BB:119:GLN:HA   | 34:BB:124:THR:HG23 | 1.88                     | 0.54              |
| 35:BC:88:LYS:O     | 35:BC:88:LYS:HD3   | 2.08                     | 0.54              |
| 39:BG:122:GLU:HG3  | 39:BG:122:GLU:O    | 2.07                     | 0.54              |
| 40:BH:26:MET:HB2   | 40:BH:27:PRO:HD2   | 1.89                     | 0.54              |
| 45:BM:82:LEU:HD21  | 51:BS:64:GLU:CD    | 2.28                     | 0.54              |
| 7:CA:31:C:H41      | 21:CO:32:PRO:CG    | 2.21                     | 0.54              |
| 8:CB:49:A:H5'      | 8:CB:50:U:H2'      | 1.89                     | 0.54              |
| 8:CB:120:U:O4      | 8:CB:177:G:H8      | 1.90                     | 0.54              |
| 8:CB:169:G:C6      | 8:CB:170:U:C4      | 2.95                     | 0.54              |
| 8:CB:443:A:C8      | 11:CE:40:ARG:CG    | 2.91                     | 0.54              |
| 8:CB:691:C:O2'     | 8:CB:692:C:H5'     | 2.06                     | 0.54              |
| 8:CB:800:A:O4'     | 8:CB:801:G:H5'     | 2.08                     | 0.54              |
| 8:CB:1005:C:C2     | 8:CB:1006:C:C5     | 2.96                     | 0.54              |
| 8:CB:1157:G:C8     | 8:CB:1157:G:C5'    | 2.90                     | 0.54              |
| 8:CB:1390:U:C2'    | 8:CB:1391:U:H5'    | 2.37                     | 0.54              |
| 8:CB:1591:A:C6     | 8:CB:1592:C:N4     | 2.76                     | 0.54              |
| 8:CB:1615:C:C2     | 8:CB:1617:C:C6     | 2.95                     | 0.54              |
| 8:CB:1820:U:H5     | 9:CC:158:GLY:O     | 1.90                     | 0.54              |
| 8:CB:1820:U:O2'    | 9:CC:157:ALA:HB3   | 2.07                     | 0.54              |
| 8:CB:2090:A:N1     | 8:CB:2230:G:C6     | 2.76                     | 0.54              |
| 8:CB:2454:G:C6     | 8:CB:2499:C:N4     | 2.75                     | 0.54              |
| 8:CB:2526:G:O2'    | 8:CB:2527:C:H5'    | 2.08                     | 0.54              |
| 8:CB:2870:C:H2'    | 8:CB:2871:U:C6     | 2.42                     | 0.54              |
| 10:CD:197:THR:HG22 | 10:CD:198:GLY:H    | 1.72                     | 0.54              |
| 11:CE:48:THR:O     | 11:CE:49:ARG:C     | 2.46                     | 0.54              |
| 11:CE:133:LEU:HD22 | 11:CE:136:GLN:HG3  | 1.89                     | 0.54              |
| 15:CI:100:ILE:HG22 | 15:CI:105:LEU:HG   | 1.90                     | 0.54              |
| 15:CI:105:LEU:HD22 | 15:CI:128:ILE:HG22 | 1.90                     | 0.54              |
| 16:CJ:71:ASP:O     | 16:CJ:72:LYS:C     | 2.45                     | 0.54              |
| 16:CJ:100:VAL:HG22 | 16:CJ:101:ILE:N    | 2.22                     | 0.54              |
| 21:CO:27:VAL:HG21  | 21:CO:38:GLN:CB    | 2.37                     | 0.54              |
| 21:CO:27:VAL:CG2   | 21:CO:38:GLN:N     | 2.69                     | 0.54              |
| 29:CW:3:LYS:HZ2    | 29:CW:10:ARG:HH21  | 1.56                     | 0.54              |
| 33:DA:101:A:C6     | 33:DA:102:G:N7     | 2.76                     | 0.54              |
| 33:DA:215:C:H2'    | 33:DA:216:U:O4'    | 2.07                     | 0.54              |
| 33:DA:610:U:C6     | 33:DA:611:C:C5     | 2.96                     | 0.54              |
| 33:DA:738:C:C4     | 33:DA:739:C:N4     | 2.76                     | 0.54              |
| 33:DA:792:A:O2'    | 33:DA:794:A:N7     | 2.36                     | 0.54              |
| 33:DA:814:A:H4'    | 33:DA:1511:G:H5'   | 1.88                     | 0.54              |
| 33:DA:899:C:C6     | 33:DA:900:A:N7     | 2.76                     | 0.54              |
| 33:DA:1044:A:C8    | 33:DA:1045:C:O4'   | 2.60                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1304:G:H2'  | 33:DA:1305:G:C4   | 2.42                     | 0.54              |
| 33:DA:1304:G:N2   | 33:DA:1334:G:O6   | 2.41                     | 0.54              |
| 33:DA:1343:G:H4'  | 41:DI:123:ARG:CG  | 2.38                     | 0.54              |
| 35:DC:112:ALA:O   | 35:DC:113:LYS:C   | 2.46                     | 0.54              |
| 36:DD:127:ARG:H   | 36:DD:127:ARG:CD  | 2.21                     | 0.54              |
| 39:DG:37:THR:O    | 39:DG:41:ILE:HG13 | 2.08                     | 0.54              |
| 40:DH:93:LYS:HE3  | 40:DH:93:LYS:HA   | 1.90                     | 0.54              |
| 51:DS:1:PRO:O     | 51:DS:2:ARG:CB    | 2.56                     | 0.54              |
| 4:A3:61:LEU:HG    | 8:AB:624:C:OP1    | 2.07                     | 0.54              |
| 7:AA:14:U:H4'     | 7:AA:70:C:O2      | 2.08                     | 0.54              |
| 8:AB:53:A:H62     | 8:AB:117:G:N2     | 2.05                     | 0.54              |
| 8:AB:72:U:C5      | 30:AX:54:LYS:HG2  | 2.43                     | 0.54              |
| 8:AB:115:C:C6     | 8:AB:115:C:C3'    | 2.90                     | 0.54              |
| 8:AB:463:G:N1     | 8:AB:467:G:C6     | 2.76                     | 0.54              |
| 8:AB:751:A:H3'    | 8:AB:789:A:H2     | 1.72                     | 0.54              |
| 8:AB:1340:U:OP1   | 26:AT:19:LYS:HE2  | 2.08                     | 0.54              |
| 8:AB:1458:U:O2'   | 8:AB:1459:G:H5''  | 2.08                     | 0.54              |
| 8:AB:1598:A:C2    | 8:AB:1599:U:N1    | 2.66                     | 0.54              |
| 8:AB:1763:G:H2'   | 8:AB:1764:C:C5'   | 2.38                     | 0.54              |
| 8:AB:1807:G:H3'   | 8:AB:1808:A:C5'   | 2.38                     | 0.54              |
| 8:AB:1936:A:C2    | 8:AB:1943:U:O4    | 2.61                     | 0.54              |
| 8:AB:1970:A:C1'   | 8:AB:1972:G:C8    | 2.91                     | 0.54              |
| 8:AB:1991:U:H2'   | 8:AB:1992:G:H5'   | 1.90                     | 0.54              |
| 8:AB:2028:U:H3'   | 8:AB:2029:G:H8    | 1.71                     | 0.54              |
| 8:AB:2090:A:H2'   | 8:AB:2091:C:C6    | 2.43                     | 0.54              |
| 8:AB:2214:C:H2'   | 8:AB:2214:C:O2    | 2.07                     | 0.54              |
| 8:AB:2602:A:H2'   | 8:AB:2602:A:OP1   | 2.08                     | 0.54              |
| 8:AB:2682:A:C2    | 8:AB:2683:C:C4    | 2.96                     | 0.54              |
| 8:AB:2771:C:O2    | 8:AB:2772:C:C4    | 2.61                     | 0.54              |
| 9:AC:63:ILE:HD11  | 9:AC:83:ASP:OD1   | 2.07                     | 0.54              |
| 10:AD:96:ILE:HG22 | 10:AD:97:SER:N    | 2.21                     | 0.54              |
| 13:AG:115:GLN:O   | 13:AG:117:PRO:HD3 | 2.08                     | 0.54              |
| 18:AL:39:LYS:HZ3  | 18:AL:46:VAL:HG22 | 1.72                     | 0.54              |
| 20:AN:99:LYS:N    | 20:AN:99:LYS:HD2  | 2.23                     | 0.54              |
| 20:AN:111:ALA:O   | 20:AN:112:TYR:HD2 | 1.90                     | 0.54              |
| 21:AO:10:ARG:HD2  | 21:AO:97:PHE:CZ   | 2.42                     | 0.54              |
| 21:AO:76:LYS:HG2  | 21:AO:109:ALA:CB  | 2.37                     | 0.54              |
| 23:AQ:88:GLU:HG2  | 24:AR:53:PHE:CG   | 2.42                     | 0.54              |
| 25:AS:32:ALA:HB1  | 25:AS:51:LEU:HD12 | 1.89                     | 0.54              |
| 26:AT:76:ARG:CG   | 26:AT:77:ARG:H    | 2.07                     | 0.54              |
| 27:AU:3:LYS:NZ    | 27:AU:3:LYS:CB    | 2.67                     | 0.54              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 29:AW:81:ILE:HD12  | 29:AW:81:ILE:O   | 2.07                     | 0.54              |
| 30:AX:49:ASP:HB2   | 30:AX:52:ARG:CG  | 2.26                     | 0.54              |
| 32:AZ:3:LYS:HG2    | 32:AZ:7:PRO:C    | 2.28                     | 0.54              |
| 32:AZ:59:ARG:HG3   | 32:AZ:62:LYS:CB  | 2.37                     | 0.54              |
| 33:BA:125:U:O2'    | 33:BA:126:G:H5'  | 2.07                     | 0.54              |
| 33:BA:133:U:O2     | 33:BA:230:G:C6   | 2.61                     | 0.54              |
| 33:BA:403:C:O2'    | 33:BA:404:G:H5'  | 2.08                     | 0.54              |
| 33:BA:482:A:N3     | 33:BA:482:A:H2'  | 2.21                     | 0.54              |
| 33:BA:505:G:C6     | 33:BA:535:A:C2   | 2.96                     | 0.54              |
| 33:BA:539:A:H2'    | 33:BA:540:G:H8   | 1.72                     | 0.54              |
| 33:BA:575:G:O4'    | 33:BA:881:G:N2   | 2.41                     | 0.54              |
| 33:BA:583:A:C2     | 33:BA:759:A:C6   | 2.96                     | 0.54              |
| 33:BA:609:A:C5     | 33:BA:610:U:O2   | 2.60                     | 0.54              |
| 33:BA:708:C:H2'    | 33:BA:709:U:C6   | 2.42                     | 0.54              |
| 33:BA:781:A:H4'    | 33:BA:1522:U:O2' | 2.07                     | 0.54              |
| 33:BA:802:A:O2'    | 33:BA:803:G:H5'  | 2.08                     | 0.54              |
| 33:BA:808:C:C4     | 33:BA:809:G:N7   | 2.76                     | 0.54              |
| 33:BA:861:G:C5     | 33:BA:862:C:C5   | 2.96                     | 0.54              |
| 33:BA:976:G:OP2    | 33:BA:1358:U:H1' | 2.08                     | 0.54              |
| 33:BA:1014:A:O2'   | 33:BA:1219:A:H4' | 2.08                     | 0.54              |
| 33:BA:1127:G:C6    | 33:BA:1128:C:C5  | 2.96                     | 0.54              |
| 33:BA:1253:G:H1    | 33:BA:1284:C:H42 | 1.55                     | 0.54              |
| 33:BA:1367:C:H2'   | 33:BA:1368:A:H8  | 1.73                     | 0.54              |
| 34:BB:96:LEU:HB2   | 34:BB:99:MET:SD  | 2.47                     | 0.54              |
| 34:BB:112:ARG:HH12 | 34:BB:116:LEU:HG | 1.72                     | 0.54              |
| 36:BD:162:GLU:HG2  | 36:BD:163:GLN:N  | 2.21                     | 0.54              |
| 41:BI:51:LEU:HD12  | 41:BI:51:LEU:H   | 1.72                     | 0.54              |
| 49:BQ:20:ILE:CD1   | 49:BQ:47:ASP:HB3 | 2.37                     | 0.54              |
| 1:C0:21:LEU:HD21   | 25:CS:20:VAL:HA  | 1.89                     | 0.54              |
| 2:C1:7:LYS:HZ1     | 8:CB:2285:C:H5   | 1.56                     | 0.54              |
| 3:C2:46:LYS:HE3    | 3:C2:46:LYS:C    | 2.28                     | 0.54              |
| 4:C3:4:LYS:NZ      | 4:C3:61:LEU:N    | 2.54                     | 0.54              |
| 5:C4:2:LYS:NZ      | 5:C4:2:LYS:HB2   | 2.22                     | 0.54              |
| 7:CA:50:A:C2       | 7:CA:51:G:H1'    | 2.42                     | 0.54              |
| 8:CB:123:G:O2'     | 8:CB:124:G:H5''  | 2.08                     | 0.54              |
| 8:CB:186:G:C2      | 8:CB:211:C:C2    | 2.96                     | 0.54              |
| 8:CB:425:G:C2      | 8:CB:426:C:C6    | 2.96                     | 0.54              |
| 8:CB:503:A:C2      | 8:CB:505:A:C4    | 2.96                     | 0.54              |
| 8:CB:736:C:H2'     | 8:CB:737:C:H6    | 1.72                     | 0.54              |
| 8:CB:778:G:C5      | 8:CB:779:U:C6    | 2.95                     | 0.54              |
| 8:CB:899:A:H2'     | 8:CB:900:A:C5'   | 2.38                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:905:A:H8      | 8:CB:905:A:O5'    | 1.90                     | 0.54              |
| 8:CB:917:A:H2'     | 8:CB:918:A:H5'    | 1.90                     | 0.54              |
| 8:CB:1099:G:N1     | 8:CB:1100:C:C2    | 2.76                     | 0.54              |
| 8:CB:1435:G:O5'    | 8:CB:1435:G:H8    | 1.91                     | 0.54              |
| 8:CB:1591:A:H2'    | 8:CB:1592:C:C6    | 2.43                     | 0.54              |
| 8:CB:1819:A:P      | 9:CC:153:LEU:HB2  | 2.48                     | 0.54              |
| 8:CB:1838:C:C4     | 8:CB:1899:A:C2    | 2.96                     | 0.54              |
| 8:CB:1863:G:H4'    | 8:CB:2411:A:H4'   | 1.90                     | 0.54              |
| 8:CB:2020:A:C5     | 8:CB:2022:U:C5    | 2.96                     | 0.54              |
| 8:CB:2269:G:H2'    | 8:CB:2270:A:H5'   | 1.90                     | 0.54              |
| 8:CB:2704:C:C2     | 8:CB:2705:A:C8    | 2.96                     | 0.54              |
| 8:CB:2738:A:H2     | 8:CB:2767:C:C2    | 2.26                     | 0.54              |
| 8:CB:2892:G:C8     | 8:CB:2892:G:H3'   | 2.43                     | 0.54              |
| 9:CC:141:HIS:CG    | 9:CC:190:THR:HB   | 2.42                     | 0.54              |
| 9:CC:142:ASN:O     | 9:CC:142:ASN:CG   | 2.44                     | 0.54              |
| 9:CC:146:LYS:HB3   | 9:CC:147:PRO:HD2  | 1.89                     | 0.54              |
| 9:CC:156:SER:O     | 9:CC:194:VAL:O    | 2.26                     | 0.54              |
| 10:CD:59:ARG:CZ    | 10:CD:63:PRO:HB3  | 2.37                     | 0.54              |
| 10:CD:99:GLU:HB3   | 10:CD:101:PHE:HB3 | 1.90                     | 0.54              |
| 10:CD:170:VAL:HG11 | 10:CD:194:PRO:HG3 | 1.89                     | 0.54              |
| 13:CG:108:PHE:CE2  | 13:CG:151:ARG:NH1 | 2.75                     | 0.54              |
| 14:CH:113:SER:HB2  | 14:CH:132:PHE:CE2 | 2.43                     | 0.54              |
| 18:CL:8:PRO:O      | 18:CL:9:ALA:HB3   | 2.07                     | 0.54              |
| 18:CL:18:ARG:CD    | 18:CL:20:GLY:HA2  | 2.38                     | 0.54              |
| 18:CL:72:ALA:C     | 18:CL:73:ILE:HD12 | 2.28                     | 0.54              |
| 18:CL:92:LEU:HD22  | 18:CL:96:LYS:CG   | 2.37                     | 0.54              |
| 20:CN:33:ILE:CG2   | 20:CN:112:TYR:HD1 | 2.17                     | 0.54              |
| 20:CN:55:ALA:O     | 20:CN:80:PHE:HB3  | 2.08                     | 0.54              |
| 20:CN:58:ASP:O     | 20:CN:59:SER:HB2  | 2.08                     | 0.54              |
| 23:CQ:40:LYS:CD    | 23:CQ:44:TYR:CD2  | 2.90                     | 0.54              |
| 32:CZ:56:ARG:HG3   | 32:CZ:56:ARG:NH1  | 2.23                     | 0.54              |
| 33:DA:132:C:O5'    | 33:DA:132:C:H6    | 1.91                     | 0.54              |
| 33:DA:186:C:N4     | 33:DA:191:G:H1    | 2.06                     | 0.54              |
| 33:DA:201:G:N2     | 33:DA:217:C:H1'   | 2.23                     | 0.54              |
| 33:DA:219:U:C2     | 33:DA:220:G:C8    | 2.96                     | 0.54              |
| 33:DA:303:A:C6     | 33:DA:304:U:C5    | 2.96                     | 0.54              |
| 33:DA:376:G:C6     | 33:DA:389:A:C6    | 2.96                     | 0.54              |
| 33:DA:428:G:O4'    | 33:DA:430:A:C8    | 2.61                     | 0.54              |
| 33:DA:515:G:N1     | 33:DA:537:G:C2    | 2.76                     | 0.54              |
| 33:DA:518:C:C6     | 33:DA:529:G:C5    | 2.96                     | 0.54              |
| 33:DA:654:G:C6     | 33:DA:655:A:C6    | 2.95                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:735:C:C2     | 33:DA:736:C:C5    | 2.96                     | 0.54              |
| 33:DA:951:G:H3'    | 33:DA:952:U:H5    | 1.73                     | 0.54              |
| 33:DA:1206:G:H2'   | 33:DA:1207:G:O4'  | 2.08                     | 0.54              |
| 35:DC:40:GLN:HE22  | 46:DN:65:GLN:NE2  | 2.06                     | 0.54              |
| 36:DD:6:PRO:HG2    | 36:DD:9:LYS:HD3   | 1.89                     | 0.54              |
| 42:DJ:65:TYR:HD1   | 46:DN:95:LEU:HD11 | 1.72                     | 0.54              |
| 48:DP:16:PHE:CZ    | 48:DP:38:PHE:HB2  | 2.43                     | 0.54              |
| 4:A3:24:LYS:NZ     | 18:AL:62:PRO:C    | 2.58                     | 0.54              |
| 7:AA:40:U:O2'      | 7:AA:41:G:H5'     | 2.08                     | 0.54              |
| 8:AB:116:C:H2'     | 8:AB:117:G:C8     | 2.43                     | 0.54              |
| 8:AB:192:C:C2'     | 8:AB:193:U:H5'    | 2.38                     | 0.54              |
| 8:AB:279:A:H2'     | 8:AB:280:U:H5'    | 1.90                     | 0.54              |
| 8:AB:349:U:C2'     | 8:AB:350:G:H5''   | 2.38                     | 0.54              |
| 8:AB:496:G:H4'     | 25:AS:61:ASN:HB2  | 1.90                     | 0.54              |
| 8:AB:532:A:N7      | 8:AB:2021:C:H2'   | 2.23                     | 0.54              |
| 8:AB:704:G:N2      | 8:AB:726:G:C4     | 2.76                     | 0.54              |
| 8:AB:737:C:O2      | 8:AB:737:C:H2'    | 2.08                     | 0.54              |
| 8:AB:909:A:N7      | 8:AB:912:C:N3     | 2.56                     | 0.54              |
| 8:AB:1213:A:C5     | 8:AB:1214:A:N7    | 2.76                     | 0.54              |
| 8:AB:1790:C:O2'    | 9:AC:207:ALA:HB2  | 2.07                     | 0.54              |
| 8:AB:1797:G:C2     | 8:AB:1823:G:C2    | 2.96                     | 0.54              |
| 8:AB:1840:G:N2     | 8:AB:1841:U:H1'   | 2.23                     | 0.54              |
| 8:AB:1848:A:C4     | 8:AB:1849:G:C8    | 2.96                     | 0.54              |
| 8:AB:1854:A:H2'    | 8:AB:1855:U:H5'   | 1.90                     | 0.54              |
| 8:AB:1855:U:C5     | 8:AB:1856:U:C4    | 2.95                     | 0.54              |
| 8:AB:1890:A:C8     | 8:AB:1891:G:C8    | 2.96                     | 0.54              |
| 8:AB:1954:G:C5     | 55:AB:4660:HOH:O  | 2.54                     | 0.54              |
| 8:AB:2031:A:N1     | 8:AB:2498:C:C1'   | 2.71                     | 0.54              |
| 8:AB:2211:A:H4'    | 8:AB:2211:A:OP2   | 2.08                     | 0.54              |
| 8:AB:2645:G:C3'    | 8:AB:2646:C:H5'   | 2.27                     | 0.54              |
| 9:AC:134:ILE:HD13  | 9:AC:135:PRO:CD   | 2.38                     | 0.54              |
| 10:AD:132:ALA:C    | 10:AD:136:ASN:OD1 | 2.47                     | 0.54              |
| 11:AE:158:PHE:O    | 11:AE:158:PHE:CD1 | 2.59                     | 0.54              |
| 14:AH:11:ASN:O     | 14:AH:12:LEU:HD12 | 2.08                     | 0.54              |
| 14:AH:31:VAL:HA    | 14:AH:35:LYS:O    | 2.08                     | 0.54              |
| 18:AL:94:THR:CG2   | 18:AL:95:LEU:H    | 2.13                     | 0.54              |
| 18:AL:117:THR:HG23 | 18:AL:119:PRO:CD  | 2.36                     | 0.54              |
| 19:AM:81:ARG:C     | 19:AM:83:GLY:H    | 2.12                     | 0.54              |
| 22:AP:26:GLU:HA    | 22:AP:47:ILE:CA   | 2.38                     | 0.54              |
| 24:AR:2:TYR:O      | 24:AR:44:GLY:HA2  | 2.08                     | 0.54              |
| 24:AR:84:ARG:HH22  | 24:AR:86:GLN:CD   | 2.10                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:186:C:N4    | 33:BA:191:G:H1    | 2.06                     | 0.54              |
| 33:BA:373:A:OP2   | 33:BA:373:A:H3'   | 2.07                     | 0.54              |
| 33:BA:545:C:H5'   | 36:BD:68:GLU:HG2  | 1.90                     | 0.54              |
| 33:BA:560:A:H8    | 33:BA:566:G:C4    | 2.25                     | 0.54              |
| 33:BA:680:C:C6    | 33:BA:680:C:C5'   | 2.88                     | 0.54              |
| 33:BA:764:C:C4    | 33:BA:812:G:O6    | 2.61                     | 0.54              |
| 33:BA:946:A:H61   | 33:BA:1235:U:H3   | 1.56                     | 0.54              |
| 33:BA:978:A:H1'   | 33:BA:1322:C:C5   | 2.42                     | 0.54              |
| 33:BA:1391:U:O2'  | 33:BA:1392:G:C8   | 2.61                     | 0.54              |
| 33:BA:1442:G:C6   | 33:BA:1461:G:C2   | 2.95                     | 0.54              |
| 35:BC:68:HIS:HA   | 35:BC:103:ALA:HB3 | 1.89                     | 0.54              |
| 41:BI:11:ARG:HH21 | 41:BI:12:LYS:HB2  | 1.72                     | 0.54              |
| 49:BQ:10:ARG:NH1  | 49:BQ:11:VAL:HB   | 2.23                     | 0.54              |
| 7:CA:16:G:N2      | 7:CA:69:G:H1'     | 2.23                     | 0.54              |
| 7:CA:65:U:C2'     | 7:CA:66:A:H5'     | 2.38                     | 0.54              |
| 8:CB:77:G:C2      | 8:CB:110:G:C2     | 2.96                     | 0.54              |
| 8:CB:137:U:C6     | 8:CB:137:U:O5'    | 2.59                     | 0.54              |
| 8:CB:188:G:H1     | 8:CB:208:C:H42    | 1.55                     | 0.54              |
| 8:CB:193:U:H2'    | 8:CB:194:G:H8     | 1.73                     | 0.54              |
| 8:CB:461:C:H5''   | 8:CB:462:C:OP2    | 2.07                     | 0.54              |
| 8:CB:464:U:C2'    | 8:CB:465:G:H5''   | 2.38                     | 0.54              |
| 8:CB:464:U:C5     | 8:CB:465:G:N7     | 2.76                     | 0.54              |
| 8:CB:537:G:N2     | 8:CB:557:C:N4     | 2.56                     | 0.54              |
| 8:CB:553:G:O6     | 8:CB:554:U:C4     | 2.61                     | 0.54              |
| 8:CB:632:A:O3'    | 18:CL:69:ARG:CB   | 2.56                     | 0.54              |
| 8:CB:687:C:C4     | 8:CB:688:U:O2     | 2.61                     | 0.54              |
| 8:CB:692:C:H5'    | 9:CC:42:ARG:HB2   | 1.89                     | 0.54              |
| 8:CB:816:C:N4     | 8:CB:1192:G:N1    | 2.55                     | 0.54              |
| 8:CB:984:A:H8     | 8:CB:984:A:O5'    | 1.91                     | 0.54              |
| 8:CB:1000:A:N6    | 8:CB:1155:A:C8    | 2.76                     | 0.54              |
| 8:CB:1003:G:N3    | 8:CB:1010:A:H2    | 2.06                     | 0.54              |
| 8:CB:1343:G:H1'   | 8:CB:1597:A:C4    | 2.43                     | 0.54              |
| 8:CB:1429:G:C2'   | 8:CB:1430:G:H5'   | 2.38                     | 0.54              |
| 8:CB:1445:G:C2    | 8:CB:1446:C:C2    | 2.96                     | 0.54              |
| 8:CB:1519:G:C5    | 8:CB:1520:U:C5    | 2.95                     | 0.54              |
| 8:CB:1687:G:H2'   | 8:CB:1688:U:H6    | 1.73                     | 0.54              |
| 8:CB:1733:G:H5'   | 8:CB:1733:G:C8    | 2.43                     | 0.54              |
| 8:CB:2074:U:C2    | 8:CB:2436:G:N2    | 2.75                     | 0.54              |
| 8:CB:2298:A:N1    | 8:CB:2299:U:O2    | 2.41                     | 0.54              |
| 8:CB:2317:A:C2'   | 8:CB:2318:G:H5'   | 2.37                     | 0.54              |
| 8:CB:2456:C:C4    | 8:CB:2457:U:C5    | 2.95                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2574:G:H2'   | 8:CB:2575:C:C6     | 2.41                     | 0.54              |
| 8:CB:2618:G:H2'   | 8:CB:2619:C:H6     | 1.73                     | 0.54              |
| 8:CB:2704:C:H2'   | 8:CB:2705:A:C8     | 2.42                     | 0.54              |
| 8:CB:2811:G:OP1   | 10:CD:61:THR:HG22  | 2.07                     | 0.54              |
| 8:CB:2821:A:H5''  | 10:CD:167:ASN:HD21 | 1.72                     | 0.54              |
| 8:CB:2867:G:N3    | 8:CB:2867:G:C2'    | 2.71                     | 0.54              |
| 9:CC:61:TYR:CD2   | 9:CC:84:PRO:CD     | 2.90                     | 0.54              |
| 9:CC:220:ARG:NH1  | 9:CC:220:ARG:CG    | 2.68                     | 0.54              |
| 11:CE:42:GLY:O    | 11:CE:43:THR:HG23  | 2.07                     | 0.54              |
| 11:CE:61:ARG:HH21 | 11:CE:64:GLY:HA3   | 1.72                     | 0.54              |
| 11:CE:136:GLN:CA  | 11:CE:139:LYS:HB3  | 2.17                     | 0.54              |
| 13:CG:85:LYS:CD   | 13:CG:164:ALA:HB3  | 2.38                     | 0.54              |
| 15:CI:57:VAL:HB   | 15:CI:69:VAL:HG22  | 1.90                     | 0.54              |
| 15:CI:98:GLY:C    | 15:CI:99:LYS:HD3   | 2.28                     | 0.54              |
| 22:CP:93:LYS:CE   | 22:CP:97:TYR:CZ    | 2.82                     | 0.54              |
| 25:CS:61:ASN:OD1  | 25:CS:61:ASN:N     | 2.40                     | 0.54              |
| 29:CW:40:ARG:CG   | 29:CW:41:GLY:N     | 2.67                     | 0.54              |
| 29:CW:66:VAL:O    | 29:CW:67:LYS:O     | 2.26                     | 0.54              |
| 31:CY:46:MET:O    | 31:CY:50:VAL:HG22  | 2.08                     | 0.54              |
| 32:CZ:17:SER:O    | 32:CZ:19:GLY:N     | 2.41                     | 0.54              |
| 33:DA:71:A:O2'    | 33:DA:72:A:OP2     | 2.17                     | 0.54              |
| 33:DA:266:G:H22   | 33:DA:270:A:H61    | 1.56                     | 0.54              |
| 33:DA:283:U:H2'   | 33:DA:284:C:H6     | 1.72                     | 0.54              |
| 33:DA:405:U:H5''  | 33:DA:498:A:N6     | 2.23                     | 0.54              |
| 33:DA:517:G:N2    | 33:DA:530:G:H5'    | 2.23                     | 0.54              |
| 33:DA:563:A:H5'   | 33:DA:564:C:OP1    | 2.08                     | 0.54              |
| 33:DA:575:G:C6    | 33:DA:821:G:N7     | 2.76                     | 0.54              |
| 33:DA:770:C:H42   | 33:DA:809:G:H1     | 1.52                     | 0.54              |
| 33:DA:780:A:H1'   | 33:DA:803:G:N2     | 2.23                     | 0.54              |
| 33:DA:1054:C:O2   | 33:DA:1196:A:C5    | 2.61                     | 0.54              |
| 33:DA:1208:C:N4   | 33:DA:1209:C:N3    | 2.55                     | 0.54              |
| 33:DA:1216:A:OP1  | 46:DN:2:LYS:HD3    | 2.08                     | 0.54              |
| 33:DA:1316:G:N2   | 33:DA:1319:A:N9    | 2.56                     | 0.54              |
| 33:DA:1382:C:H5'  | 39:DG:78:ARG:HE    | 1.72                     | 0.54              |
| 33:DA:1468:A:N1   | 33:DA:1469:C:C4    | 2.76                     | 0.54              |
| 34:DB:165:ALA:HB2 | 34:DB:172:ILE:HD11 | 1.90                     | 0.54              |
| 35:DC:90:VAL:C    | 35:DC:92:ASP:H     | 2.11                     | 0.54              |
| 37:DE:103:GLY:O   | 37:DE:105:ILE:HG13 | 2.08                     | 0.54              |
| 47:DO:4:THR:HA    | 47:DO:7:THR:OG1    | 2.07                     | 0.54              |
| 2:A1:11:VAL:HG13  | 2:A1:12:SER:H      | 1.73                     | 0.54              |
| 8:AB:56:A:O4'     | 8:AB:127:A:C2      | 2.61                     | 0.54              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:68:G:H2'      | 8:AB:69:C:O4'      | 2.08                     | 0.54              |
| 8:AB:101:A:OP1     | 8:AB:101:A:O4'     | 2.26                     | 0.54              |
| 8:AB:147:C:H2'     | 8:AB:148:U:O4'     | 2.07                     | 0.54              |
| 8:AB:252:G:N3      | 8:AB:253:C:H6      | 2.05                     | 0.54              |
| 8:AB:382:A:H2      | 8:AB:383:C:H1'     | 1.72                     | 0.54              |
| 8:AB:463:G:C8      | 8:AB:463:G:C3'     | 2.90                     | 0.54              |
| 8:AB:567:U:C2      | 8:AB:568:U:C6      | 2.96                     | 0.54              |
| 8:AB:682:G:H2'     | 8:AB:683:U:C6      | 2.43                     | 0.54              |
| 8:AB:801:G:H3'     | 55:AB:4381:HOH:O   | 2.08                     | 0.54              |
| 8:AB:1004:U:H1'    | 8:AB:1010:A:C4     | 2.43                     | 0.54              |
| 8:AB:1203:U:C5     | 8:AB:1204:A:N6     | 2.76                     | 0.54              |
| 8:AB:1372:U:O2'    | 8:AB:2212:A:C8     | 2.61                     | 0.54              |
| 8:AB:1421:G:C2     | 8:AB:1422:G:N7     | 2.76                     | 0.54              |
| 8:AB:1707:G:H2'    | 8:AB:1708:C:C5'    | 2.37                     | 0.54              |
| 8:AB:1755:A:N6     | 8:AB:2694:G:H2'    | 2.23                     | 0.54              |
| 8:AB:1822:C:O2'    | 8:AB:1823:G:H5''   | 2.08                     | 0.54              |
| 8:AB:1863:G:H2'    | 8:AB:1864:U:O4'    | 2.08                     | 0.54              |
| 8:AB:2267:A:H3'    | 8:AB:2268:A:C5'    | 2.36                     | 0.54              |
| 8:AB:2317:A:C2'    | 8:AB:2318:G:H5'    | 2.38                     | 0.54              |
| 8:AB:2392:A:O2'    | 18:AL:62:PRO:HG3   | 2.08                     | 0.54              |
| 8:AB:2394:C:OP1    | 18:AL:63:LYS:HB3   | 2.08                     | 0.54              |
| 8:AB:2461:A:H2'    | 8:AB:2462:C:H6     | 1.73                     | 0.54              |
| 8:AB:2562:U:H2'    | 8:AB:2563:U:C5'    | 2.38                     | 0.54              |
| 8:AB:2682:A:H2'    | 8:AB:2682:A:N3     | 2.22                     | 0.54              |
| 8:AB:2747:G:N2     | 8:AB:2757:A:H62    | 2.06                     | 0.54              |
| 9:AC:44:ASN:CG     | 9:AC:48:ILE:O      | 2.47                     | 0.54              |
| 12:AF:135:ILE:HD11 | 12:AF:138:PRO:HA   | 1.89                     | 0.54              |
| 18:AL:13:LYS:HG3   | 18:AL:13:LYS:O     | 2.08                     | 0.54              |
| 18:AL:47:ARG:O     | 18:AL:48:ARG:C     | 2.46                     | 0.54              |
| 19:AM:18:ARG:H     | 19:AM:18:ARG:CD    | 2.21                     | 0.54              |
| 19:AM:129:THR:CG2  | 19:AM:131:VAL:HG22 | 2.37                     | 0.54              |
| 20:AN:111:ALA:O    | 20:AN:112:TYR:CD2  | 2.61                     | 0.54              |
| 21:AO:41:ALA:O     | 21:AO:42:PRO:O     | 2.25                     | 0.54              |
| 33:BA:45:G:H5''    | 33:BA:307:C:O2'    | 2.08                     | 0.54              |
| 33:BA:275:G:C2     | 33:BA:276:G:C4     | 2.96                     | 0.54              |
| 33:BA:492:C:C2'    | 33:BA:493:A:H5'    | 2.38                     | 0.54              |
| 33:BA:501:C:H6     | 33:BA:501:C:H3'    | 1.73                     | 0.54              |
| 33:BA:565:U:H6     | 33:BA:566:G:HO2'   | 1.54                     | 0.54              |
| 33:BA:1074:G:C6    | 33:BA:1075:U:N3    | 2.76                     | 0.54              |
| 33:BA:1269:A:H3'   | 33:BA:1270:G:C8    | 2.42                     | 0.54              |
| 33:BA:1354:U:O5'   | 33:BA:1354:U:H6    | 1.91                     | 0.54              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BB:119:GLN:O    | 34:BB:125:PHE:HB3 | 2.08                     | 0.54              |
| 35:BC:10:ARG:HH11  | 35:BC:10:ARG:HG2  | 1.69                     | 0.54              |
| 39:BG:119:LEU:HD13 | 39:BG:119:LEU:O   | 2.08                     | 0.54              |
| 49:BQ:63:CYS:SG    | 49:BQ:64:ARG:N    | 2.81                     | 0.54              |
| 50:BR:63:TYR:CE2   | 50:BR:69:TYR:OH   | 2.61                     | 0.54              |
| 4:C3:11:LYS:HG3    | 18:CL:63:LYS:O    | 2.07                     | 0.54              |
| 4:C3:60:CYS:SG     | 4:C3:61:LEU:N     | 2.81                     | 0.54              |
| 5:C4:7:VAL:O       | 5:C4:23:ILE:HG21  | 2.08                     | 0.54              |
| 7:CA:28:C:C5       | 7:CA:29:A:N7      | 2.76                     | 0.54              |
| 8:CB:363:G:C2      | 8:CB:364:C:N3     | 2.76                     | 0.54              |
| 8:CB:463:G:N2      | 8:CB:467:G:C4     | 2.75                     | 0.54              |
| 8:CB:514:A:H2'     | 8:CB:515:A:O4'    | 2.08                     | 0.54              |
| 8:CB:777:G:N3      | 8:CB:778:G:C8     | 2.76                     | 0.54              |
| 8:CB:852:U:O4      | 8:CB:853:C:N4     | 2.40                     | 0.54              |
| 8:CB:1334:G:C2'    | 8:CB:1335:C:H5'   | 2.38                     | 0.54              |
| 8:CB:1541:C:C2     | 8:CB:1542:U:C6    | 2.95                     | 0.54              |
| 8:CB:1652:A:C3'    | 8:CB:1653:G:H5'   | 2.37                     | 0.54              |
| 8:CB:2091:C:H3'    | 8:CB:2092:U:C5'   | 2.37                     | 0.54              |
| 8:CB:2230:G:H4'    | 32:CZ:29:GLY:O    | 2.08                     | 0.54              |
| 8:CB:2313:C:O2'    | 12:CF:34:THR:HG21 | 2.07                     | 0.54              |
| 8:CB:2338:C:H2'    | 8:CB:2339:C:H6    | 1.71                     | 0.54              |
| 8:CB:2574:G:C2     | 8:CB:2575:C:C2    | 2.96                     | 0.54              |
| 8:CB:2664:G:H8     | 8:CB:2664:G:O5'   | 1.90                     | 0.54              |
| 8:CB:2786:U:H4'    | 10:CD:65:ALA:O    | 2.08                     | 0.54              |
| 8:CB:2849:U:N3     | 8:CB:2867:G:N7    | 2.55                     | 0.54              |
| 9:CC:219:VAL:C     | 9:CC:220:ARG:HD2  | 2.29                     | 0.54              |
| 9:CC:264:LYS:H     | 9:CC:264:LYS:HZ3  | 1.51                     | 0.54              |
| 12:CF:44:ALA:O     | 12:CF:48:LEU:HD12 | 2.08                     | 0.54              |
| 12:CF:174:PHE:H    | 12:CF:175:PRO:CD  | 2.21                     | 0.54              |
| 16:CJ:4:PHE:CZ     | 16:CJ:6:ALA:HA    | 2.43                     | 0.54              |
| 19:CM:5:LYS:NZ     | 19:CM:8:LYS:HB3   | 2.23                     | 0.54              |
| 19:CM:5:LYS:CG     | 19:CM:6:ARG:H     | 2.20                     | 0.54              |
| 19:CM:30:SER:O     | 19:CM:31:PHE:CB   | 2.56                     | 0.54              |
| 21:CO:10:ARG:CD    | 21:CO:94:ARG:HD3  | 2.38                     | 0.54              |
| 21:CO:15:ARG:NE    | 21:CO:18:LEU:HD13 | 2.17                     | 0.54              |
| 22:CP:13:LYS:HD3   | 22:CP:78:PRO:CG   | 2.29                     | 0.54              |
| 25:CS:66:ILE:O     | 25:CS:68:ASP:N    | 2.41                     | 0.54              |
| 28:CV:56:PHE:C     | 28:CV:56:PHE:HD2  | 2.12                     | 0.54              |
| 31:CY:17:PRO:C     | 31:CY:19:HIS:N    | 2.60                     | 0.54              |
| 33:DA:275:G:C2     | 33:DA:276:G:C5    | 2.96                     | 0.54              |
| 33:DA:373:A:N3     | 33:DA:482:A:N6    | 2.56                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:595:A:H1'   | 33:DA:596:A:N7     | 2.23                     | 0.54              |
| 33:DA:598:U:H4'   | 40:DH:85:TYR:HD2   | 1.64                     | 0.54              |
| 33:DA:598:U:C4'   | 40:DH:85:TYR:CD2   | 2.85                     | 0.54              |
| 33:DA:805:C:C2'   | 33:DA:806:C:H6     | 2.12                     | 0.54              |
| 33:DA:948:C:O5'   | 33:DA:948:C:H6     | 1.91                     | 0.54              |
| 33:DA:1076:U:N3   | 33:DA:1082:A:C2    | 2.76                     | 0.54              |
| 33:DA:1202:U:C1'  | 46:DN:68:ARG:HG3   | 2.37                     | 0.54              |
| 33:DA:1244:G:C5   | 33:DA:1245:C:C4    | 2.96                     | 0.54              |
| 33:DA:1421:G:C6   | 33:DA:1480:A:C6    | 2.96                     | 0.54              |
| 34:DB:181:PRO:O   | 34:DB:182:VAL:HG23 | 2.08                     | 0.54              |
| 35:DC:86:LEU:HB2  | 35:DC:100:ILE:HG12 | 1.90                     | 0.54              |
| 35:DC:138:GLN:HA  | 35:DC:138:GLN:HE21 | 1.73                     | 0.54              |
| 35:DC:180:ASP:OD1 | 35:DC:203:LYS:HG2  | 2.07                     | 0.54              |
| 37:DE:35:LEU:HD21 | 37:DE:136:VAL:CG2  | 2.26                     | 0.54              |
| 40:DH:23:ALA:HB1  | 40:DH:60:LEU:O     | 2.07                     | 0.54              |
| 41:DI:54:VAL:O    | 41:DI:55:ASP:CB    | 2.55                     | 0.54              |
| 44:DL:51:VAL:O    | 44:DL:52:CYS:HB3   | 2.06                     | 0.54              |
| 44:DL:83:GLY:HA2  | 44:DL:94:TYR:CA    | 2.34                     | 0.54              |
| 45:DM:68:LEU:HD22 | 45:DM:69:ARG:HH11  | 1.73                     | 0.54              |
| 45:DM:109:LYS:HG3 | 45:DM:110:GLY:N    | 2.22                     | 0.54              |
| 46:DN:90:GLY:C    | 46:DN:92:ILE:N     | 2.61                     | 0.54              |
| 47:DO:49:HIS:HA   | 47:DO:52:ARG:HG2   | 1.90                     | 0.54              |
| 49:DQ:80:LYS:O    | 49:DQ:81:ALA:HB2   | 2.07                     | 0.54              |
| 52:DT:70:LYS:O    | 52:DT:73:ARG:CG    | 2.56                     | 0.54              |
| 52:DT:78:LEU:O    | 52:DT:82:ILE:HG23  | 2.08                     | 0.54              |
| 2:A1:15:GLY:CA    | 2:A1:47:ILE:HG21   | 2.38                     | 0.53              |
| 6:A5:158:VAL:C    | 6:A5:160:LYS:N     | 2.59                     | 0.53              |
| 7:AA:42:C:OP1     | 12:AF:63:LYS:NZ    | 2.33                     | 0.53              |
| 7:AA:65:U:C2'     | 7:AA:66:A:H5'      | 2.38                     | 0.53              |
| 8:AB:227:A:C2     | 8:AB:2407:A:H1'    | 2.44                     | 0.53              |
| 8:AB:566:U:O2'    | 8:AB:809:G:OP2     | 2.23                     | 0.53              |
| 8:AB:643:A:N7     | 8:AB:644:A:N7      | 2.56                     | 0.53              |
| 8:AB:688:U:O2'    | 8:AB:786:C:O2'     | 2.21                     | 0.53              |
| 8:AB:748:G:C2     | 8:AB:750:A:N6      | 2.76                     | 0.53              |
| 8:AB:865:C:C4     | 8:AB:908:C:N4      | 2.76                     | 0.53              |
| 8:AB:900:A:C2     | 8:AB:901:C:C4      | 2.96                     | 0.53              |
| 8:AB:1344:U:H5'   | 8:AB:1345:C:C5     | 2.42                     | 0.53              |
| 8:AB:1970:A:O4'   | 8:AB:1972:G:C8     | 2.61                     | 0.53              |
| 8:AB:2157:G:H5''  | 8:AB:2157:G:C8     | 2.44                     | 0.53              |
| 8:AB:2280:G:C2    | 8:AB:2281:A:N7     | 2.76                     | 0.53              |
| 8:AB:2529:G:H5'   | 8:AB:2530:A:C5'    | 2.38                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2685:G:H2'   | 8:AB:2686:G:H8     | 1.73                     | 0.53              |
| 8:AB:2704:C:H2'   | 8:AB:2705:A:C8     | 2.43                     | 0.53              |
| 8:AB:2746:U:C1'   | 13:AG:138:GLN:HB2  | 2.39                     | 0.53              |
| 9:AC:48:ILE:HG22  | 9:AC:49:THR:H      | 1.72                     | 0.53              |
| 9:AC:58:LYS:HB2   | 9:AC:58:LYS:HZ3    | 1.69                     | 0.53              |
| 10:AD:37:VAL:HG13 | 10:AD:38:LYS:N     | 2.23                     | 0.53              |
| 11:AE:6:LYS:CE    | 11:AE:119:ILE:H    | 2.21                     | 0.53              |
| 12:AF:174:PHE:H   | 12:AF:175:PRO:CD   | 2.21                     | 0.53              |
| 13:AG:86:LEU:HD21 | 13:AG:144:ALA:HB1  | 1.90                     | 0.53              |
| 16:AJ:46:PRO:HG3  | 55:AJ:2001:HOH:O   | 2.08                     | 0.53              |
| 16:AJ:127:GLY:O   | 16:AJ:128:ASN:O    | 2.25                     | 0.53              |
| 19:AM:16:ARG:HB3  | 19:AM:18:ARG:NH2   | 2.23                     | 0.53              |
| 19:AM:61:GLY:HA3  | 19:AM:105:MET:CB   | 2.36                     | 0.53              |
| 21:AO:16:ARG:HA   | 21:AO:16:ARG:NE    | 2.23                     | 0.53              |
| 21:AO:76:LYS:NZ   | 21:AO:80:GLU:HB2   | 2.23                     | 0.53              |
| 23:AQ:107:ALA:O   | 23:AQ:110:GLU:HB2  | 2.07                     | 0.53              |
| 33:BA:146:G:C2'   | 33:BA:147:G:H5'    | 2.39                     | 0.53              |
| 33:BA:323:U:H4'   | 52:BT:16:ALA:CB    | 2.38                     | 0.53              |
| 33:BA:345:C:O4'   | 33:BA:346:G:C2     | 2.61                     | 0.53              |
| 33:BA:392:C:P     | 48:BP:8:ARG:HH12   | 2.31                     | 0.53              |
| 33:BA:440:C:H2'   | 33:BA:441:A:H8     | 1.72                     | 0.53              |
| 33:BA:910:C:H2'   | 33:BA:910:C:O2     | 2.08                     | 0.53              |
| 33:BA:1097:C:C2   | 33:BA:1098:C:C5    | 2.96                     | 0.53              |
| 33:BA:1301:U:H2'  | 33:BA:1301:U:O2    | 2.06                     | 0.53              |
| 35:BC:106:ARG:HG2 | 35:BC:106:ARG:O    | 2.08                     | 0.53              |
| 35:BC:129:PHE:CE2 | 35:BC:156:LEU:HD23 | 2.43                     | 0.53              |
| 41:BI:25:GLY:HA2  | 41:BI:60:LEU:O     | 2.07                     | 0.53              |
| 44:BL:81:ILE:HG23 | 44:BL:82:ARG:N     | 2.23                     | 0.53              |
| 45:BM:106:ARG:CZ  | 45:BM:112:ARG:HG2  | 2.37                     | 0.53              |
| 53:BU:28:LEU:O    | 53:BU:28:LEU:HD23  | 2.06                     | 0.53              |
| 3:C2:17:GLY:C     | 3:C2:18:PHE:CD2    | 2.81                     | 0.53              |
| 8:CB:170:U:H2'    | 8:CB:171:U:O4'     | 2.08                     | 0.53              |
| 8:CB:224:U:C4     | 8:CB:225:C:C5      | 2.96                     | 0.53              |
| 8:CB:482:A:C8     | 8:CB:506:G:N1      | 2.76                     | 0.53              |
| 8:CB:797:G:N2     | 8:CB:798:G:H1'     | 2.23                     | 0.53              |
| 8:CB:1309:G:H8    | 8:CB:1309:G:C5'    | 2.20                     | 0.53              |
| 8:CB:1656:C:H42   | 8:CB:2004:G:H1     | 1.55                     | 0.53              |
| 8:CB:1746:A:H2'   | 8:CB:1746:A:N3     | 2.22                     | 0.53              |
| 8:CB:1767:G:N2    | 8:CB:1768:C:C2     | 2.76                     | 0.53              |
| 8:CB:1807:G:C2    | 8:CB:1811:G:O6     | 2.61                     | 0.53              |
| 8:CB:1848:A:C4    | 8:CB:1849:G:N7     | 2.77                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2024:G:H5''   | 10:CD:154:LYS:HZ3  | 1.73                     | 0.53              |
| 8:CB:2104:C:O2'    | 8:CB:2105:U:C6     | 2.61                     | 0.53              |
| 8:CB:2684:U:H6     | 8:CB:2684:U:H3'    | 1.73                     | 0.53              |
| 8:CB:2773:C:OP1    | 10:CD:169:ARG:NH2  | 2.40                     | 0.53              |
| 8:CB:2857:G:N2     | 8:CB:2861:U:N3     | 2.56                     | 0.53              |
| 9:CC:141:HIS:CB    | 9:CC:190:THR:HB    | 2.37                     | 0.53              |
| 10:CD:20:VAL:O     | 10:CD:22:ILE:HB    | 2.08                     | 0.53              |
| 12:CF:104:THR:HG22 | 12:CF:105:ILE:HD12 | 1.88                     | 0.53              |
| 13:CG:23:ILE:O     | 13:CG:25:ILE:N     | 2.41                     | 0.53              |
| 20:CN:7:GLY:CA     | 20:CN:8:ARG:HH11   | 2.19                     | 0.53              |
| 20:CN:82:GLU:O     | 20:CN:86:ARG:HG3   | 2.08                     | 0.53              |
| 23:CQ:44:TYR:HE1   | 23:CQ:51:GLN:NE2   | 2.05                     | 0.53              |
| 30:CX:26:PHE:CA    | 30:CX:29:ARG:HB2   | 2.37                     | 0.53              |
| 31:CY:2:LYS:HB2    | 31:CY:37:ARG:HB2   | 1.89                     | 0.53              |
| 33:DA:373:A:C2     | 33:DA:482:A:N6     | 2.75                     | 0.53              |
| 33:DA:386:C:H3'    | 33:DA:387:U:H5''   | 1.89                     | 0.53              |
| 33:DA:396:C:H3'    | 33:DA:396:C:H6     | 1.72                     | 0.53              |
| 33:DA:462:G:H4'    | 33:DA:463:U:OP2    | 2.06                     | 0.53              |
| 33:DA:487:A:N7     | 33:DA:488:C:C4     | 2.76                     | 0.53              |
| 33:DA:488:C:C2'    | 33:DA:489:C:H5'    | 2.38                     | 0.53              |
| 33:DA:501:C:H6     | 33:DA:501:C:H3'    | 1.73                     | 0.53              |
| 33:DA:526:C:H2'    | 33:DA:526:C:O2     | 2.07                     | 0.53              |
| 33:DA:643:C:H2'    | 33:DA:644:U:C6     | 2.41                     | 0.53              |
| 33:DA:726:C:O2'    | 33:DA:727:G:H5'    | 2.07                     | 0.53              |
| 33:DA:836:G:N2     | 33:DA:837:U:H1'    | 2.23                     | 0.53              |
| 33:DA:1083:U:H5    | 33:DA:1084:G:C5    | 2.25                     | 0.53              |
| 33:DA:1118:U:H3    | 33:DA:1155:A:H61   | 1.57                     | 0.53              |
| 33:DA:1157:A:N6    | 33:DA:1180:A:N7    | 2.55                     | 0.53              |
| 33:DA:1157:A:C6    | 33:DA:1180:A:N7    | 2.76                     | 0.53              |
| 33:DA:1428:A:C2    | 33:DA:1473:G:N2    | 2.76                     | 0.53              |
| 33:DA:1533:C:H3'   | 33:DA:1533:C:C6    | 2.42                     | 0.53              |
| 34:DB:132:GLU:O    | 34:DB:135:MET:HB2  | 2.08                     | 0.53              |
| 35:DC:177:LEU:HD22 | 35:DC:177:LEU:N    | 2.23                     | 0.53              |
| 36:DD:90:LEU:CD2   | 36:DD:196:GLU:HG3  | 2.37                     | 0.53              |
| 43:DK:30:ILE:HA    | 43:DK:45:THR:HG1   | 1.73                     | 0.53              |
| 43:DK:99:LEU:O     | 43:DK:102:ALA:HB3  | 2.08                     | 0.53              |
| 46:DN:20:PHE:CA    | 46:DN:24:ALA:HB2   | 2.39                     | 0.53              |
| 46:DN:30:ILE:HB    | 46:DN:44:VAL:CB    | 2.36                     | 0.53              |
| 47:DO:84:LEU:O     | 47:DO:86:LEU:HD12  | 2.06                     | 0.53              |
| 48:DP:58:ALA:O     | 48:DP:59:HIS:C     | 2.46                     | 0.53              |
| 49:DQ:74:LEU:H     | 49:DQ:74:LEU:CD1   | 2.20                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:DQ:82:VAL:O    | 49:DQ:83:LEU:HD13  | 2.08                     | 0.53              |
| 7:AA:71:C:C2      | 7:AA:72:G:C8       | 2.97                     | 0.53              |
| 7:AA:82:U:H3      | 7:AA:94:A:H61      | 1.55                     | 0.53              |
| 8:AB:65:U:O2'     | 26:AT:70:HIS:CE1   | 2.61                     | 0.53              |
| 8:AB:98:G:H8      | 8:AB:98:G:H5''     | 1.72                     | 0.53              |
| 8:AB:195:A:H2'    | 8:AB:198:C:H41     | 1.73                     | 0.53              |
| 8:AB:208:C:H2'    | 8:AB:209:C:C6      | 2.44                     | 0.53              |
| 8:AB:585:G:C4     | 8:AB:1251:C:C4     | 2.95                     | 0.53              |
| 8:AB:592:A:C5     | 8:AB:593:U:C5      | 2.96                     | 0.53              |
| 8:AB:806:C:O2     | 8:AB:2444:G:O2'    | 2.26                     | 0.53              |
| 8:AB:974:G:O6     | 8:AB:989:G:C5      | 2.61                     | 0.53              |
| 8:AB:1036:G:C2    | 8:AB:1037:G:C8     | 2.97                     | 0.53              |
| 8:AB:1235:G:H5''  | 8:AB:1236:G:OP2    | 2.06                     | 0.53              |
| 8:AB:1363:C:H2'   | 8:AB:1364:G:H8     | 1.73                     | 0.53              |
| 8:AB:1392:A:C6    | 8:AB:1393:A:C6     | 2.96                     | 0.53              |
| 8:AB:1670:C:N4    | 8:AB:1671:U:H3     | 2.05                     | 0.53              |
| 8:AB:1911:U:O2'   | 8:AB:1912:A:H5'    | 2.07                     | 0.53              |
| 8:AB:1932:A:H2'   | 8:AB:1932:A:N3     | 2.22                     | 0.53              |
| 8:AB:2183:A:H2'   | 8:AB:2184:A:C8     | 2.43                     | 0.53              |
| 8:AB:2452:C:C4    | 8:AB:2453:A:C6     | 2.96                     | 0.53              |
| 8:AB:2719:G:H5''  | 8:AB:2719:G:C8     | 2.43                     | 0.53              |
| 8:AB:2743:U:H3'   | 8:AB:2743:U:C6     | 2.44                     | 0.53              |
| 8:AB:2835:A:C8    | 8:AB:2879:A:N1     | 2.76                     | 0.53              |
| 10:AD:7:LYS:H     | 10:AD:201:LEU:HD13 | 1.73                     | 0.53              |
| 10:AD:46:ARG:CG   | 10:AD:80:TRP:CH2   | 2.91                     | 0.53              |
| 11:AE:120:VAL:N   | 11:AE:189:THR:HG21 | 2.24                     | 0.53              |
| 14:AH:26:ALA:O    | 14:AH:28:ASN:N     | 2.41                     | 0.53              |
| 18:AL:38:GLN:O    | 18:AL:40:SER:N     | 2.41                     | 0.53              |
| 19:AM:25:ASP:OD2  | 19:AM:25:ASP:C     | 2.47                     | 0.53              |
| 22:AP:7:LEU:C     | 22:AP:9:GLN:N      | 2.61                     | 0.53              |
| 23:AQ:16:ILE:HD11 | 23:AQ:31:TYR:OH    | 2.09                     | 0.53              |
| 24:AR:75:VAL:HG22 | 24:AR:90:ARG:HE    | 1.74                     | 0.53              |
| 25:AS:11:ARG:NH1  | 25:AS:11:ARG:CG    | 2.65                     | 0.53              |
| 25:AS:20:VAL:HG13 | 25:AS:21:ALA:H     | 1.73                     | 0.53              |
| 25:AS:41:LYS:HG3  | 25:AS:42:LYS:N     | 2.23                     | 0.53              |
| 27:AU:3:LYS:C     | 27:AU:4:ILE:HG12   | 2.28                     | 0.53              |
| 31:AY:11:SER:O    | 31:AY:12:ALA:CB    | 2.56                     | 0.53              |
| 32:AZ:3:LYS:HE3   | 32:AZ:8:LYS:CA     | 2.38                     | 0.53              |
| 33:BA:38:G:N2     | 33:BA:397:A:N3     | 2.57                     | 0.53              |
| 33:BA:77:A:C8     | 33:BA:77:A:C3'     | 2.92                     | 0.53              |
| 33:BA:321:A:H2    | 33:BA:332:G:H22    | 1.53                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:323:U:H4'   | 52:BT:16:ALA:HB1  | 1.90                     | 0.53              |
| 33:BA:489:C:H2'   | 33:BA:490:C:H6    | 1.73                     | 0.53              |
| 33:BA:588:G:C6    | 33:BA:589:U:C4    | 2.97                     | 0.53              |
| 33:BA:610:U:H5''  | 33:BA:611:C:OP2   | 2.08                     | 0.53              |
| 33:BA:683:G:C4    | 33:BA:684:U:C6    | 2.97                     | 0.53              |
| 33:BA:746:A:H3'   | 33:BA:746:A:H8    | 1.72                     | 0.53              |
| 33:BA:987:G:H4'   | 51:BS:55:GLN:HE21 | 1.73                     | 0.53              |
| 33:BA:992:U:C5    | 33:BA:1043:G:N7   | 2.77                     | 0.53              |
| 33:BA:1071:C:H2'  | 33:BA:1072:G:H5'  | 1.90                     | 0.53              |
| 33:BA:1418:A:N1   | 33:BA:1483:A:C2   | 2.75                     | 0.53              |
| 33:BA:1514:G:N1   | 33:BA:1521:C:N4   | 2.40                     | 0.53              |
| 34:BB:9:LEU:O     | 34:BB:11:ALA:N    | 2.41                     | 0.53              |
| 36:BD:188:SER:C   | 36:BD:190:LEU:H   | 2.11                     | 0.53              |
| 45:BM:19:THR:HG22 | 45:BM:29:SER:OG   | 2.08                     | 0.53              |
| 46:BN:64:ARG:HB3  | 46:BN:77:GLY:O    | 2.08                     | 0.53              |
| 50:BR:72:ARG:O    | 50:BR:73:HIS:HB2  | 2.09                     | 0.53              |
| 53:BU:15:LEU:HA   | 53:BU:18:PHE:CE1  | 2.44                     | 0.53              |
| 4:C3:4:LYS:NZ     | 4:C3:60:CYS:N     | 2.56                     | 0.53              |
| 4:C3:9:ALA:C      | 4:C3:11:LYS:N     | 2.62                     | 0.53              |
| 8:CB:18:U:C5      | 8:CB:19:A:N7      | 2.76                     | 0.53              |
| 8:CB:85:G:C6      | 8:CB:98:G:C2      | 2.96                     | 0.53              |
| 8:CB:262:A:H3'    | 8:CB:262:A:H8     | 1.71                     | 0.53              |
| 8:CB:536:G:O6     | 8:CB:537:G:C2     | 2.61                     | 0.53              |
| 8:CB:612:G:C2     | 8:CB:617:G:O6     | 2.61                     | 0.53              |
| 8:CB:628:G:H8     | 8:CB:628:G:O5'    | 1.91                     | 0.53              |
| 8:CB:633:A:H8     | 8:CB:633:A:O5'    | 1.91                     | 0.53              |
| 8:CB:778:G:C4     | 8:CB:779:U:C6     | 2.97                     | 0.53              |
| 8:CB:792:A:H4'    | 8:CB:793:A:H5'    | 1.91                     | 0.53              |
| 8:CB:1125:G:H3'   | 8:CB:1126:A:C8    | 2.43                     | 0.53              |
| 8:CB:1218:G:C5    | 8:CB:1232:G:C6    | 2.96                     | 0.53              |
| 8:CB:1316:U:C2'   | 8:CB:1317:G:H5'   | 2.37                     | 0.53              |
| 8:CB:1417:C:C2'   | 8:CB:1418:G:H5'   | 2.37                     | 0.53              |
| 8:CB:1422:G:C2    | 8:CB:1423:G:C8    | 2.95                     | 0.53              |
| 8:CB:1601:G:OP2   | 26:CT:62:VAL:HG11 | 2.07                     | 0.53              |
| 8:CB:1672:A:C6    | 8:CB:1673:G:C6    | 2.97                     | 0.53              |
| 8:CB:1715:G:N2    | 8:CB:1744:A:OP2   | 2.42                     | 0.53              |
| 8:CB:1936:A:H2    | 8:CB:1943:U:O4    | 1.90                     | 0.53              |
| 8:CB:2025:C:H3'   | 8:CB:2026:U:H6    | 1.73                     | 0.53              |
| 8:CB:2807:U:C1'   | 8:CB:2892:G:N2    | 2.63                     | 0.53              |
| 8:CB:2842:G:H2'   | 8:CB:2842:G:N3    | 2.22                     | 0.53              |
| 9:CC:22:GLU:HB2   | 9:CC:202:ARG:HE   | 1.73                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:CC:36:ASN:N      | 9:CC:36:ASN:OD1    | 2.41                     | 0.53              |
| 9:CC:204:LEU:CG    | 9:CC:210:ALA:HB1   | 2.38                     | 0.53              |
| 10:CD:125:TRP:O    | 10:CD:128:ARG:CD   | 2.56                     | 0.53              |
| 10:CD:157:LYS:CE   | 16:CJ:80:HIS:HB3   | 2.38                     | 0.53              |
| 18:CL:88:GLY:O     | 18:CL:90:VAL:HG12  | 2.08                     | 0.53              |
| 19:CM:50:ARG:HH22  | 19:CM:53:MET:HE3   | 1.73                     | 0.53              |
| 24:CR:67:GLY:H     | 24:CR:98:ILE:HA    | 1.74                     | 0.53              |
| 24:CR:74:ILE:HG13  | 24:CR:76:LYS:HD2   | 1.89                     | 0.53              |
| 25:CS:98:LYS:O     | 25:CS:99:ARG:O     | 2.26                     | 0.53              |
| 26:CT:66:LYS:NZ    | 26:CT:67:VAL:O     | 2.34                     | 0.53              |
| 27:CU:16:LYS:O     | 27:CU:16:LYS:HG3   | 2.09                     | 0.53              |
| 29:CW:16:GLU:O     | 29:CW:18:LYS:HD3   | 2.08                     | 0.53              |
| 29:CW:44:PHE:CZ    | 29:CW:60:ALA:HB2   | 2.43                     | 0.53              |
| 30:CX:22:LEU:CD2   | 30:CX:25:GLN:HE22  | 2.21                     | 0.53              |
| 33:DA:153:C:O2'    | 33:DA:154:U:H5'    | 2.08                     | 0.53              |
| 33:DA:303:A:HO2'   | 33:DA:555:U:H4'    | 1.73                     | 0.53              |
| 33:DA:407:U:N3     | 33:DA:408:A:C8     | 2.77                     | 0.53              |
| 33:DA:417:G:C4     | 33:DA:418:C:C5     | 2.96                     | 0.53              |
| 33:DA:502:A:C2'    | 33:DA:503:C:O5'    | 2.56                     | 0.53              |
| 33:DA:577:G:H2'    | 33:DA:578:C:H6     | 1.74                     | 0.53              |
| 33:DA:1074:G:H4'   | 34:DB:101:THR:OG1  | 2.08                     | 0.53              |
| 33:DA:1106:G:H2'   | 33:DA:1107:C:C6    | 2.43                     | 0.53              |
| 33:DA:1130:A:C2    | 33:DA:1146:A:C4    | 2.96                     | 0.53              |
| 33:DA:1239:A:H1'   | 33:DA:1241:G:C4    | 2.41                     | 0.53              |
| 33:DA:1347:G:H1'   | 33:DA:1373:G:H1    | 1.69                     | 0.53              |
| 33:DA:1426:G:H2'   | 33:DA:1427:C:C6    | 2.43                     | 0.53              |
| 33:DA:1464:U:H6    | 33:DA:1464:U:H3'   | 1.73                     | 0.53              |
| 35:DC:144:GLY:O    | 35:DC:145:ALA:HB3  | 2.07                     | 0.53              |
| 36:DD:75:TYR:CE2   | 36:DD:203:TYR:HB3  | 2.43                     | 0.53              |
| 37:DE:47:PHE:HB2   | 37:DE:140:ILE:HD11 | 1.88                     | 0.53              |
| 37:DE:133:ILE:HG23 | 37:DE:134:ASN:ND2  | 2.23                     | 0.53              |
| 42:DJ:30:LYS:HA    | 42:DJ:36:VAL:CG2   | 2.38                     | 0.53              |
| 42:DJ:33:GLY:HA2   | 42:DJ:80:THR:CG2   | 2.39                     | 0.53              |
| 47:DO:65:LEU:O     | 47:DO:69:LEU:HB2   | 2.08                     | 0.53              |
| 50:DR:25:ILE:CD1   | 50:DR:29:LYS:HG3   | 2.39                     | 0.53              |
| 2:A1:12:SER:HA     | 2:A1:50:GLU:CA     | 2.38                     | 0.53              |
| 5:A4:32:LYS:HA     | 8:AB:2527:C:O2'    | 2.08                     | 0.53              |
| 7:AA:23:G:N3       | 7:AA:24:G:N1       | 2.56                     | 0.53              |
| 8:AB:297:G:O6      | 8:AB:341:C:N3      | 2.41                     | 0.53              |
| 8:AB:310:A:N7      | 8:AB:330:A:N6      | 2.56                     | 0.53              |
| 8:AB:349:U:H2'     | 8:AB:350:G:H5''    | 1.90                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:736:C:H2'    | 8:AB:737:C:H6      | 1.74                     | 0.53              |
| 8:AB:740:C:N4     | 8:AB:758:C:C2      | 2.77                     | 0.53              |
| 8:AB:1606:C:O2'   | 8:AB:1608:A:N1     | 2.37                     | 0.53              |
| 8:AB:1854:A:C2'   | 8:AB:1855:U:H5'    | 2.38                     | 0.53              |
| 8:AB:1897:G:N1    | 8:AB:1898:U:C2     | 2.77                     | 0.53              |
| 8:AB:2029:G:C2'   | 8:AB:2030:A:H5'    | 2.37                     | 0.53              |
| 8:AB:2055:C:H5'   | 8:AB:2056:G:O5'    | 2.08                     | 0.53              |
| 8:AB:2149:U:H2'   | 8:AB:2150:C:H6     | 1.72                     | 0.53              |
| 8:AB:2316:G:C2    | 8:AB:2317:A:C8     | 2.97                     | 0.53              |
| 8:AB:2384:U:H3'   | 8:AB:2385:C:H5'    | 1.91                     | 0.53              |
| 8:AB:2525:G:N2    | 8:AB:2539:C:N3     | 2.56                     | 0.53              |
| 8:AB:2685:G:O2'   | 8:AB:2686:G:H5'    | 2.08                     | 0.53              |
| 8:AB:2710:C:O2'   | 8:AB:2711:A:H5'    | 2.09                     | 0.53              |
| 8:AB:2847:U:C5    | 8:AB:2848:G:C5     | 2.96                     | 0.53              |
| 12:AF:52:ALA:HB1  | 12:AF:148:VAL:HG13 | 1.90                     | 0.53              |
| 23:AQ:98:ALA:HB2  | 23:AQ:105:PHE:CG   | 2.43                     | 0.53              |
| 28:AV:15:GLY:O    | 28:AV:19:ARG:HG3   | 2.08                     | 0.53              |
| 33:BA:18:C:C1'    | 33:BA:1079:G:H21   | 2.19                     | 0.53              |
| 33:BA:133:U:C2    | 33:BA:230:G:C6     | 2.96                     | 0.53              |
| 33:BA:340:U:N3    | 33:BA:350:G:N2     | 2.56                     | 0.53              |
| 33:BA:452:A:N6    | 33:BA:480:U:C2     | 2.77                     | 0.53              |
| 33:BA:531:U:H5'   | 33:BA:531:U:C6     | 2.43                     | 0.53              |
| 33:BA:600:A:C5    | 33:BA:639:G:N2     | 2.76                     | 0.53              |
| 33:BA:1058:G:H2'  | 33:BA:1059:C:H6    | 1.71                     | 0.53              |
| 33:BA:1379:G:H5'' | 33:BA:1379:G:C8    | 2.41                     | 0.53              |
| 33:BA:1417:G:C2   | 33:BA:1484:C:N4    | 2.76                     | 0.53              |
| 35:BC:28:PHE:CE2  | 46:BN:93:PRO:HG2   | 2.43                     | 0.53              |
| 38:BF:36:ILE:HG23 | 38:BF:64:VAL:HG13  | 1.89                     | 0.53              |
| 43:BK:88:PRO:HG3  | 53:BU:28:LEU:CD1   | 2.38                     | 0.53              |
| 45:BM:106:ARG:NE  | 45:BM:112:ARG:HG2  | 2.22                     | 0.53              |
| 52:BT:53:MET:HA   | 52:BT:56:ILE:HG13  | 1.90                     | 0.53              |
| 3:C2:7:PRO:HG2    | 8:CB:1309:G:H4'    | 1.89                     | 0.53              |
| 3:C2:9:VAL:C      | 3:C2:11:LYS:H      | 2.12                     | 0.53              |
| 7:CA:33:G:H2'     | 7:CA:33:G:N3       | 2.22                     | 0.53              |
| 7:CA:96:G:N2      | 7:CA:97:C:H1'      | 2.23                     | 0.53              |
| 8:CB:73:A:C2'     | 8:CB:74:A:OP2      | 2.56                     | 0.53              |
| 8:CB:123:G:C4     | 8:CB:124:G:N7      | 2.76                     | 0.53              |
| 8:CB:160:A:N6     | 8:CB:167:A:H1'     | 2.23                     | 0.53              |
| 8:CB:551:G:C8     | 8:CB:551:G:C3'     | 2.91                     | 0.53              |
| 8:CB:606:U:H2'    | 8:CB:607:U:O4'     | 2.08                     | 0.53              |
| 8:CB:669:G:N3     | 8:CB:669:G:C2'     | 2.68                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:808:G:C5'    | 8:CB:808:G:C8      | 2.92                     | 0.53              |
| 8:CB:1028:A:C2'   | 8:CB:1029:A:H8     | 2.06                     | 0.53              |
| 8:CB:1081:U:C4    | 8:CB:1082:U:C5     | 2.97                     | 0.53              |
| 8:CB:1235:G:H5''  | 8:CB:1236:G:OP2    | 2.09                     | 0.53              |
| 8:CB:1561:C:H2'   | 8:CB:1562:U:C6     | 2.43                     | 0.53              |
| 8:CB:1623:G:C4    | 8:CB:1624:U:C5     | 2.96                     | 0.53              |
| 8:CB:1719:G:C4    | 8:CB:1720:U:C6     | 2.96                     | 0.53              |
| 8:CB:1796:U:N3    | 8:CB:1797:G:N7     | 2.57                     | 0.53              |
| 8:CB:1807:G:H3'   | 8:CB:1808:A:C5'    | 2.38                     | 0.53              |
| 8:CB:1842:G:O4'   | 9:CC:241:LYS:HE3   | 2.08                     | 0.53              |
| 8:CB:2289:G:C2    | 8:CB:2290:G:C8     | 2.97                     | 0.53              |
| 8:CB:2408:U:O5'   | 8:CB:2408:U:H6     | 1.91                     | 0.53              |
| 8:CB:2487:G:C2'   | 8:CB:2488:G:H5'    | 2.38                     | 0.53              |
| 8:CB:2606:C:C2'   | 8:CB:2607:G:H5'    | 2.38                     | 0.53              |
| 8:CB:2645:G:C5'   | 8:CB:2645:G:H8     | 2.21                     | 0.53              |
| 8:CB:2654:A:H4'   | 8:CB:2655:G:H4'    | 1.89                     | 0.53              |
| 8:CB:2679:A:H2'   | 8:CB:2680:U:H6     | 1.73                     | 0.53              |
| 8:CB:2697:G:N1    | 8:CB:2711:A:C6     | 2.75                     | 0.53              |
| 9:CC:50:THR:O     | 9:CC:51:ARG:O      | 2.26                     | 0.53              |
| 9:CC:171:VAL:HB   | 9:CC:182:LYS:HB3   | 1.88                     | 0.53              |
| 9:CC:262:THR:O    | 9:CC:263:ASP:HB3   | 2.09                     | 0.53              |
| 10:CD:14:ILE:O    | 10:CD:15:PHE:HB2   | 2.08                     | 0.53              |
| 10:CD:17:GLU:O    | 17:CK:72:PRO:HB3   | 2.08                     | 0.53              |
| 11:CE:71:GLY:O    | 11:CE:72:SER:HB2   | 2.09                     | 0.53              |
| 11:CE:124:PHE:CZ  | 11:CE:137:LYS:CG   | 2.90                     | 0.53              |
| 12:CF:59:ILE:HD11 | 12:CF:137:PHE:HB2  | 1.90                     | 0.53              |
| 13:CG:114:HIS:HD2 | 13:CG:147:LEU:HD21 | 1.73                     | 0.53              |
| 14:CH:107:GLY:O   | 14:CH:108:VAL:HG23 | 2.07                     | 0.53              |
| 14:CH:115:VAL:O   | 14:CH:115:VAL:HG13 | 2.08                     | 0.53              |
| 15:CI:7:TYR:HB2   | 15:CI:59:THR:CB    | 2.39                     | 0.53              |
| 18:CL:52:GLY:O    | 18:CL:53:GLY:C     | 2.44                     | 0.53              |
| 18:CL:110:VAL:C   | 18:CL:111:ILE:HG23 | 2.28                     | 0.53              |
| 19:CM:46:ILE:HD11 | 19:CM:93:VAL:HG21  | 1.89                     | 0.53              |
| 19:CM:47:GLU:HA   | 19:CM:50:ARG:CB    | 2.39                     | 0.53              |
| 22:CP:7:LEU:C     | 22:CP:9:GLN:N      | 2.61                     | 0.53              |
| 23:CQ:78:PHE:CE1  | 23:CQ:82:LEU:HD11  | 2.43                     | 0.53              |
| 23:CQ:92:LYS:C    | 23:CQ:94:LEU:H     | 2.11                     | 0.53              |
| 24:CR:35:PHE:CG   | 24:CR:64:VAL:O     | 2.62                     | 0.53              |
| 29:CW:44:PHE:HE1  | 29:CW:57:THR:OG1   | 1.92                     | 0.53              |
| 30:CX:51:ALA:C    | 30:CX:53:VAL:H     | 2.10                     | 0.53              |
| 33:DA:146:G:C2    | 33:DA:147:G:C8     | 2.97                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:174:A:C2'   | 33:DA:175:C:H5'    | 2.38                     | 0.53              |
| 33:DA:450:G:H5''  | 33:DA:451:A:H5''   | 1.90                     | 0.53              |
| 33:DA:563:A:H3'   | 44:DL:11:ARG:HH21  | 1.74                     | 0.53              |
| 33:DA:894:G:C2    | 33:DA:895:G:C8     | 2.96                     | 0.53              |
| 33:DA:1063:C:H3'  | 33:DA:1064:G:H5''  | 1.90                     | 0.53              |
| 33:DA:1115:U:N3   | 33:DA:1186:G:C2    | 2.76                     | 0.53              |
| 33:DA:1292:G:H2'  | 33:DA:1293:C:O4'   | 2.08                     | 0.53              |
| 33:DA:1299:A:C5   | 33:DA:1301:U:H1'   | 2.43                     | 0.53              |
| 33:DA:1408:A:H2'  | 33:DA:1409:C:H5'   | 1.88                     | 0.53              |
| 38:DF:64:VAL:HG12 | 38:DF:65:GLU:N     | 2.15                     | 0.53              |
| 40:DH:31:LEU:O    | 40:DH:33:VAL:N     | 2.41                     | 0.53              |
| 41:DI:12:LYS:H    | 41:DI:105:ARG:NH1  | 2.06                     | 0.53              |
| 41:DI:32:ARG:NE   | 41:DI:36:GLN:HB3   | 2.23                     | 0.53              |
| 41:DI:84:ARG:HA   | 41:DI:94:ARG:NH2   | 2.24                     | 0.53              |
| 42:DJ:63:ASP:HB3  | 42:DJ:65:TYR:CE2   | 2.44                     | 0.53              |
| 46:DN:5:MET:HG3   | 46:DN:8:ARG:NE     | 2.23                     | 0.53              |
| 48:DP:13:LYS:O    | 48:DP:15:PRO:HD3   | 2.09                     | 0.53              |
| 50:DR:51:GLN:HE21 | 50:DR:51:GLN:CA    | 2.22                     | 0.53              |
| 8:AB:33:C:H2'     | 8:AB:33:C:O5'      | 2.09                     | 0.53              |
| 8:AB:193:U:H2'    | 8:AB:194:G:C8      | 2.43                     | 0.53              |
| 8:AB:630:G:H1     | 18:AL:69:ARG:NH2   | 2.06                     | 0.53              |
| 8:AB:694:U:OP1    | 8:AB:1569:A:H1'    | 2.08                     | 0.53              |
| 8:AB:1205:A:H2'   | 11:AE:164:LEU:HD13 | 1.90                     | 0.53              |
| 8:AB:1399:C:H2'   | 8:AB:1400:U:C6     | 2.44                     | 0.53              |
| 8:AB:1702:G:C5    | 8:AB:1703:G:N7     | 2.75                     | 0.53              |
| 8:AB:1754:A:OP1   | 22:AP:95:LYS:HB2   | 2.07                     | 0.53              |
| 8:AB:1926:U:H5'   | 8:AB:1927:A:OP2    | 2.08                     | 0.53              |
| 8:AB:2521:C:H6    | 8:AB:2521:C:C5'    | 2.20                     | 0.53              |
| 8:AB:2572:A:OP2   | 10:AD:152:PRO:CD   | 2.47                     | 0.53              |
| 8:AB:2587:A:H8    | 8:AB:2587:A:C5'    | 2.21                     | 0.53              |
| 8:AB:2692:G:O6    | 8:AB:2718:G:C5     | 2.61                     | 0.53              |
| 8:AB:2748:A:C2    | 13:AG:62:ALA:HB1   | 2.43                     | 0.53              |
| 8:AB:2804:U:C4    | 8:AB:2805:C:N4     | 2.76                     | 0.53              |
| 9:AC:141:HIS:CG   | 9:AC:190:THR:HB    | 2.43                     | 0.53              |
| 9:AC:203:VAL:O    | 9:AC:203:VAL:HG22  | 2.08                     | 0.53              |
| 9:AC:229:HIS:CE1  | 9:AC:231:HIS:CD2   | 2.97                     | 0.53              |
| 11:AE:44:ARG:HD3  | 11:AE:44:ARG:H     | 1.73                     | 0.53              |
| 11:AE:135:ALA:O   | 11:AE:139:LYS:HD2  | 2.07                     | 0.53              |
| 11:AE:138:LEU:O   | 11:AE:138:LEU:HD23 | 2.09                     | 0.53              |
| 11:AE:164:LEU:CG  | 11:AE:165:HIS:H    | 2.21                     | 0.53              |
| 13:AG:51:PHE:CD2  | 13:AG:52:GLY:N     | 2.66                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 14:AH:124:THR:HG22 | 14:AH:126:GLY:H   | 1.74                     | 0.53              |
| 17:AK:2:ILE:HG22   | 17:AK:32:TYR:CB   | 2.39                     | 0.53              |
| 17:AK:16:ALA:HB3   | 17:AK:47:ILE:HD13 | 1.91                     | 0.53              |
| 17:AK:78:ARG:CZ    | 22:AP:72:VAL:HG21 | 2.39                     | 0.53              |
| 18:AL:29:LYS:HD2   | 18:AL:31:GLY:HA3  | 1.90                     | 0.53              |
| 18:AL:57:LEU:HB2   | 18:AL:58:TYR:CE2  | 2.43                     | 0.53              |
| 20:AN:72:ASP:O     | 20:AN:73:ASN:C    | 2.47                     | 0.53              |
| 22:AP:59:THR:O     | 22:AP:60:VAL:CG1  | 2.57                     | 0.53              |
| 23:AQ:109:VAL:HG12 | 23:AQ:113:LYS:HZ3 | 1.71                     | 0.53              |
| 29:AW:66:VAL:HG13  | 29:AW:67:LYS:N    | 2.22                     | 0.53              |
| 29:AW:66:VAL:O     | 29:AW:67:LYS:O    | 2.26                     | 0.53              |
| 33:BA:11:G:H2'     | 33:BA:12:U:O4'    | 2.08                     | 0.53              |
| 33:BA:243:A:C4     | 33:BA:245:U:C4    | 2.96                     | 0.53              |
| 33:BA:452:A:N6     | 33:BA:480:U:N3    | 2.57                     | 0.53              |
| 33:BA:488:C:H2'    | 33:BA:489:C:H5'   | 1.90                     | 0.53              |
| 33:BA:507:C:O5'    | 33:BA:508:U:H5''  | 2.08                     | 0.53              |
| 33:BA:655:A:N6     | 33:BA:752:G:H21   | 2.07                     | 0.53              |
| 33:BA:932:C:C5     | 39:BG:2:ARG:NH1   | 2.76                     | 0.53              |
| 33:BA:1109:C:OP1   | 35:BC:175:HIS:CE1 | 2.62                     | 0.53              |
| 33:BA:1207:G:C2    | 33:BA:1208:C:C2   | 2.96                     | 0.53              |
| 33:BA:1222:G:C5    | 33:BA:1223:C:C5   | 2.96                     | 0.53              |
| 35:BC:59:PRO:O     | 35:BC:60:ALA:HB2  | 2.08                     | 0.53              |
| 36:BD:160:LEU:H    | 36:BD:160:LEU:CD1 | 2.16                     | 0.53              |
| 39:BG:85:GLN:O     | 39:BG:86:VAL:C    | 2.46                     | 0.53              |
| 46:BN:1:ALA:HB2    | 46:BN:67:GLY:CA   | 2.38                     | 0.53              |
| 49:BQ:10:ARG:CZ    | 49:BQ:11:VAL:HB   | 2.38                     | 0.53              |
| 51:BS:4:LEU:CD1    | 51:BS:9:PHE:H     | 2.12                     | 0.53              |
| 1:C0:41:HIS:NE2    | 1:C0:42:ILE:HG22  | 2.23                     | 0.53              |
| 8:CB:55:G:C2       | 8:CB:116:C:N3     | 2.76                     | 0.53              |
| 8:CB:188:G:OP2     | 32:CZ:12:ILE:HG12 | 2.08                     | 0.53              |
| 8:CB:197:A:H5'     | 8:CB:197:A:C8     | 2.44                     | 0.53              |
| 8:CB:310:A:C5      | 8:CB:330:A:N6     | 2.75                     | 0.53              |
| 8:CB:319:G:C6      | 8:CB:333:G:N1     | 2.77                     | 0.53              |
| 8:CB:379:G:C2      | 8:CB:396:G:C6     | 2.96                     | 0.53              |
| 8:CB:464:U:C1'     | 8:CB:686:U:H5     | 2.21                     | 0.53              |
| 8:CB:677:A:N1      | 8:CB:802:A:C5     | 2.77                     | 0.53              |
| 8:CB:899:A:H2'     | 8:CB:900:A:H5'    | 1.90                     | 0.53              |
| 8:CB:986:C:C6      | 8:CB:986:C:H5'    | 2.44                     | 0.53              |
| 8:CB:1262:A:C2'    | 8:CB:1263:U:H5'   | 2.38                     | 0.53              |
| 8:CB:1821:A:C4     | 8:CB:1822:C:C5    | 2.96                     | 0.53              |
| 8:CB:1824:G:N3     | 9:CC:249:VAL:HG12 | 2.22                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2270:A:C8     | 8:CB:2271:G:C8     | 2.96                     | 0.53              |
| 8:CB:2420:C:H3'    | 8:CB:2421:G:H5''   | 1.89                     | 0.53              |
| 8:CB:2568:U:H2'    | 8:CB:2569:G:O4'    | 2.09                     | 0.53              |
| 8:CB:2692:G:O6     | 8:CB:2718:G:C5     | 2.60                     | 0.53              |
| 8:CB:2739:U:H2'    | 8:CB:2740:A:H5'    | 1.89                     | 0.53              |
| 9:CC:41:GLY:O      | 9:CC:42:ARG:O      | 2.26                     | 0.53              |
| 9:CC:78:GLU:HB2    | 9:CC:92:LEU:HB3    | 1.90                     | 0.53              |
| 10:CD:84:LEU:O     | 10:CD:85:ALA:CB    | 2.57                     | 0.53              |
| 10:CD:126:ASN:HA   | 10:CD:128:ARG:NH2  | 2.22                     | 0.53              |
| 11:CE:149:ILE:CG2  | 11:CE:186:VAL:HG13 | 2.39                     | 0.53              |
| 11:CE:151:GLY:O    | 11:CE:152:GLU:HG2  | 2.08                     | 0.53              |
| 12:CF:33:ILE:CD1   | 12:CF:90:LEU:HB2   | 2.35                     | 0.53              |
| 12:CF:121:PHE:HE2  | 12:CF:165:GLY:HA3  | 1.74                     | 0.53              |
| 13:CG:97:VAL:O     | 13:CG:97:VAL:HG12  | 2.07                     | 0.53              |
| 18:CL:17:LYS:CG    | 18:CL:18:ARG:H     | 2.06                     | 0.53              |
| 19:CM:71:LYS:HA    | 19:CM:91:TYR:HA    | 1.90                     | 0.53              |
| 20:CN:38:LEU:O     | 20:CN:41:ALA:HB3   | 2.09                     | 0.53              |
| 21:CO:34:HIS:HA    | 21:CO:53:THR:CB    | 2.39                     | 0.53              |
| 22:CP:24:THR:O     | 22:CP:26:GLU:HG3   | 2.08                     | 0.53              |
| 25:CS:20:VAL:HG21  | 25:CS:44:ALA:HA    | 1.91                     | 0.53              |
| 33:DA:135:C:O5'    | 33:DA:135:C:H6     | 1.91                     | 0.53              |
| 33:DA:373:A:O2'    | 33:DA:481:G:N2     | 2.42                     | 0.53              |
| 33:DA:432:A:C8     | 33:DA:433:G:C8     | 2.97                     | 0.53              |
| 33:DA:505:G:C4     | 33:DA:506:G:C8     | 2.97                     | 0.53              |
| 33:DA:597:G:H21    | 40:DH:85:TYR:HE2   | 1.55                     | 0.53              |
| 33:DA:702:A:H3'    | 33:DA:703:G:C5'    | 2.39                     | 0.53              |
| 33:DA:729:A:O2'    | 33:DA:730:G:H5'    | 2.08                     | 0.53              |
| 33:DA:779:C:O2'    | 43:DK:121:ARG:NH1  | 2.42                     | 0.53              |
| 33:DA:861:G:H1     | 33:DA:868:C:H42    | 1.56                     | 0.53              |
| 33:DA:872:A:C5     | 33:DA:874:G:N7     | 2.76                     | 0.53              |
| 33:DA:1047:G:H1'   | 33:DA:1215:G:O2'   | 2.07                     | 0.53              |
| 33:DA:1210:C:H2'   | 33:DA:1211:U:H6    | 1.73                     | 0.53              |
| 33:DA:1494:G:C6    | 33:DA:1495:U:H5    | 2.25                     | 0.53              |
| 34:DB:202:ASN:HD22 | 34:DB:203:ASP:H    | 1.55                     | 0.53              |
| 35:DC:39:ARG:NE    | 35:DC:56:ILE:HD11  | 2.23                     | 0.53              |
| 36:DD:32:LYS:NZ    | 36:DD:36:ALA:HB3   | 2.24                     | 0.53              |
| 47:DO:4:THR:O      | 47:DO:8:ALA:N      | 2.40                     | 0.53              |
| 5:A4:9:LYS:HG2     | 5:A4:10:LEU:H      | 1.74                     | 0.53              |
| 7:AA:51:G:N2       | 7:AA:53:A:H62      | 2.06                     | 0.53              |
| 8:AB:66:C:H2'      | 8:AB:67:U:H5'      | 1.91                     | 0.53              |
| 8:AB:79:C:H5''     | 8:AB:80:G:OP2      | 2.08                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:158:U:O2      | 8:AB:169:G:C2     | 2.61                     | 0.53              |
| 8:AB:338:G:C6      | 8:AB:339:U:N3     | 2.77                     | 0.53              |
| 8:AB:470:A:C2      | 8:AB:471:A:C4     | 2.96                     | 0.53              |
| 8:AB:475:C:C4      | 8:AB:481:G:O6     | 2.61                     | 0.53              |
| 8:AB:547:A:C2'     | 8:AB:548:G:H5'    | 2.35                     | 0.53              |
| 8:AB:563:A:H5'     | 8:AB:563:A:C8     | 2.32                     | 0.53              |
| 8:AB:570:G:OP1     | 8:AB:972:A:H4'    | 2.09                     | 0.53              |
| 8:AB:656:G:H2'     | 8:AB:657:U:C6     | 2.44                     | 0.53              |
| 8:AB:792:A:C5      | 8:AB:2440:C:C5    | 2.97                     | 0.53              |
| 8:AB:816:C:N4      | 8:AB:1192:G:N1    | 2.56                     | 0.53              |
| 8:AB:901:C:C2      | 8:AB:902:C:C5     | 2.96                     | 0.53              |
| 8:AB:986:C:C2'     | 8:AB:987:C:H5'    | 2.39                     | 0.53              |
| 8:AB:1218:G:C5     | 8:AB:1232:G:C6    | 2.96                     | 0.53              |
| 8:AB:1285:A:H3'    | 8:AB:1285:A:C8    | 2.43                     | 0.53              |
| 8:AB:1360:G:O6     | 8:AB:1372:U:C2    | 2.61                     | 0.53              |
| 8:AB:1376:C:O2     | 8:AB:1376:C:C2'   | 2.57                     | 0.53              |
| 8:AB:1456:G:C2'    | 8:AB:1457:U:H5'   | 2.38                     | 0.53              |
| 8:AB:1599:U:OP1    | 26:AT:39:THR:HA   | 2.09                     | 0.53              |
| 8:AB:1797:G:C5     | 8:AB:1798:U:C4    | 2.97                     | 0.53              |
| 8:AB:1802:A:N6     | 8:AB:1817:G:N2    | 2.57                     | 0.53              |
| 8:AB:2090:A:C4     | 8:AB:2091:C:C5    | 2.96                     | 0.53              |
| 8:AB:2200:C:H3'    | 8:AB:2200:C:C6    | 2.43                     | 0.53              |
| 8:AB:2407:A:C5     | 8:AB:2408:U:O4    | 2.62                     | 0.53              |
| 8:AB:2442:C:N4     | 8:AB:2443:C:N4    | 2.56                     | 0.53              |
| 8:AB:2452:C:C6     | 8:AB:2452:C:C3'   | 2.89                     | 0.53              |
| 8:AB:2575:C:O2'    | 10:AD:146:ILE:CG2 | 2.56                     | 0.53              |
| 8:AB:2648:G:C2     | 8:AB:2649:C:C2    | 2.97                     | 0.53              |
| 8:AB:2668:G:C2     | 8:AB:2669:G:C8    | 2.96                     | 0.53              |
| 8:AB:2835:A:N7     | 8:AB:2879:A:N1    | 2.56                     | 0.53              |
| 11:AE:157:LEU:O    | 11:AE:159:LEU:N   | 2.41                     | 0.53              |
| 12:AF:140:ILE:HG22 | 12:AF:142:TYR:H   | 1.72                     | 0.53              |
| 13:AG:85:LYS:HG2   | 13:AG:130:ILE:O   | 2.08                     | 0.53              |
| 14:AH:116:ARG:HD3  | 14:AH:131:SER:HB2 | 1.90                     | 0.53              |
| 18:AL:38:GLN:C     | 18:AL:40:SER:H    | 2.12                     | 0.53              |
| 24:AR:44:GLY:O     | 24:AR:45:GLU:HB2  | 2.08                     | 0.53              |
| 24:AR:72:VAL:CG1   | 24:AR:92:TRP:HE1  | 2.21                     | 0.53              |
| 26:AT:50:LEU:HD12  | 26:AT:50:LEU:O    | 2.08                     | 0.53              |
| 27:AU:46:LYS:HB2   | 27:AU:53:GLN:HA   | 1.90                     | 0.53              |
| 27:AU:92:VAL:O     | 27:AU:93:ARG:O    | 2.27                     | 0.53              |
| 28:AV:16:ALA:O     | 28:AV:20:LEU:HG   | 2.08                     | 0.53              |
| 29:AW:46:ALA:HA    | 29:AW:57:THR:HG22 | 1.89                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 31:AY:13:ILE:HD13 | 31:AY:13:ILE:H    | 1.72                     | 0.53              |
| 33:BA:107:G:H5''  | 33:BA:108:G:OP2   | 2.08                     | 0.53              |
| 33:BA:243:A:OP1   | 33:BA:243:A:H4'   | 2.07                     | 0.53              |
| 33:BA:389:A:H5''  | 33:BA:390:U:H5    | 1.72                     | 0.53              |
| 33:BA:481:G:H4'   | 33:BA:481:G:OP1   | 2.09                     | 0.53              |
| 33:BA:587:G:C2    | 33:BA:755:G:C6    | 2.97                     | 0.53              |
| 33:BA:763:G:H2'   | 33:BA:764:C:H6    | 1.73                     | 0.53              |
| 33:BA:819:A:C8    | 33:BA:1529:G:C2   | 2.96                     | 0.53              |
| 33:BA:957:U:H4'   | 51:BS:78:THR:O    | 2.08                     | 0.53              |
| 33:BA:1111:A:H2   | 33:BA:1112:C:N3   | 2.06                     | 0.53              |
| 33:BA:1309:G:OP1  | 45:BM:96:VAL:HG21 | 2.07                     | 0.53              |
| 33:BA:1332:A:C6   | 33:BA:1333:A:N7   | 2.77                     | 0.53              |
| 33:BA:1448:C:H2'  | 33:BA:1449:C:C6   | 2.44                     | 0.53              |
| 34:BB:68:PHE:CD1  | 34:BB:83:ALA:HB1  | 2.44                     | 0.53              |
| 35:BC:39:ARG:NH2  | 35:BC:56:ILE:HD12 | 2.15                     | 0.53              |
| 36:BD:34:GLU:O    | 36:BD:34:GLU:HG3  | 2.09                     | 0.53              |
| 43:BK:15:VAL:O    | 43:BK:16:SER:HB2  | 2.08                     | 0.53              |
| 44:BL:31:GLY:O    | 44:BL:78:VAL:HG13 | 2.08                     | 0.53              |
| 47:BO:10:ILE:HD11 | 47:BO:29:ALA:CB   | 2.31                     | 0.53              |
| 47:BO:52:ARG:HB2  | 47:BO:55:LEU:HD23 | 1.91                     | 0.53              |
| 4:C3:46:LYS:HD2   | 4:C3:47:ALA:N     | 2.24                     | 0.53              |
| 5:C4:9:LYS:HG2    | 5:C4:10:LEU:H     | 1.74                     | 0.53              |
| 7:CA:99:A:H2'     | 7:CA:100:G:H5'    | 1.90                     | 0.53              |
| 8:CB:68:G:H2'     | 8:CB:69:C:H6      | 1.74                     | 0.53              |
| 8:CB:809:G:OP2    | 55:CB:5161:HOH:O  | 2.19                     | 0.53              |
| 8:CB:862:G:H8     | 8:CB:862:G:O5'    | 1.92                     | 0.53              |
| 8:CB:906:U:H5'    | 8:CB:906:U:C6     | 2.43                     | 0.53              |
| 8:CB:969:G:H2'    | 8:CB:970:U:H6     | 1.74                     | 0.53              |
| 8:CB:1049:C:C5    | 8:CB:1050:A:N7    | 2.76                     | 0.53              |
| 8:CB:1220:G:N3    | 8:CB:1221:C:C6    | 2.77                     | 0.53              |
| 8:CB:1231:U:O2'   | 8:CB:1232:G:H5'   | 2.08                     | 0.53              |
| 8:CB:1362:C:C2'   | 8:CB:1363:C:H5'   | 2.39                     | 0.53              |
| 8:CB:1455:G:H5'   | 20:CN:60:VAL:HG21 | 1.90                     | 0.53              |
| 8:CB:1541:C:H2'   | 8:CB:1542:U:C6    | 2.42                     | 0.53              |
| 8:CB:1561:C:H2'   | 8:CB:1562:U:H6    | 1.72                     | 0.53              |
| 8:CB:1569:A:C6    | 8:CB:1570:A:C5    | 2.96                     | 0.53              |
| 8:CB:1816:C:H5    | 9:CC:62:ARG:CD    | 2.19                     | 0.53              |
| 8:CB:1848:A:C4    | 8:CB:1849:G:C8    | 2.96                     | 0.53              |
| 8:CB:2029:G:C2'   | 8:CB:2030:A:H5'   | 2.38                     | 0.53              |
| 8:CB:2183:A:H2'   | 8:CB:2184:A:C8    | 2.44                     | 0.53              |
| 8:CB:2207:C:N3    | 8:CB:2218:G:C2    | 2.77                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2256:G:H21   | 8:CB:2257:U:H1'    | 1.73                     | 0.53              |
| 8:CB:2306:C:OP2   | 8:CB:2307:G:N7     | 2.42                     | 0.53              |
| 8:CB:2357:G:N3    | 8:CB:2361:G:C6     | 2.77                     | 0.53              |
| 8:CB:2361:G:O2'   | 8:CB:2362:C:H5'    | 2.09                     | 0.53              |
| 8:CB:2583:G:N1    | 8:CB:2584:U:O2     | 2.42                     | 0.53              |
| 8:CB:2593:U:C6    | 8:CB:2594:C:H5     | 2.27                     | 0.53              |
| 8:CB:2599:G:N7    | 9:CC:234:GLY:HA2   | 2.22                     | 0.53              |
| 8:CB:2850:A:C5    | 8:CB:2851:A:N7     | 2.77                     | 0.53              |
| 9:CC:4:LYS:HE2    | 9:CC:5:CYS:SG      | 2.49                     | 0.53              |
| 9:CC:134:ILE:HD13 | 9:CC:135:PRO:CD    | 2.38                     | 0.53              |
| 9:CC:244:VAL:CG2  | 9:CC:245:THR:H     | 2.15                     | 0.53              |
| 10:CD:61:THR:O    | 10:CD:64:GLU:N     | 2.42                     | 0.53              |
| 10:CD:90:PHE:O    | 10:CD:91:THR:OG1   | 2.24                     | 0.53              |
| 10:CD:202:ILE:CG2 | 10:CD:202:ILE:O    | 2.56                     | 0.53              |
| 11:CE:17:THR:CG2  | 11:CE:196:VAL:HG13 | 2.37                     | 0.53              |
| 16:CJ:132:HIS:O   | 16:CJ:132:HIS:CD2  | 2.62                     | 0.53              |
| 17:CK:113:MET:C   | 17:CK:115:ILE:N    | 2.60                     | 0.53              |
| 23:CQ:16:ILE:O    | 23:CQ:19:GLN:N     | 2.41                     | 0.53              |
| 23:CQ:79:ILE:HD13 | 23:CQ:79:ILE:N     | 2.22                     | 0.53              |
| 27:CU:92:VAL:HG13 | 27:CU:93:ARG:H     | 1.74                     | 0.53              |
| 32:CZ:56:ARG:NH1  | 32:CZ:57:VAL:N     | 2.57                     | 0.53              |
| 33:DA:38:G:H22    | 33:DA:397:A:C5'    | 2.16                     | 0.53              |
| 33:DA:87:C:H2'    | 33:DA:88:U:O4'     | 2.08                     | 0.53              |
| 33:DA:452:A:N6    | 33:DA:480:U:N3     | 2.56                     | 0.53              |
| 33:DA:720:C:C4    | 33:DA:721:G:N2     | 2.76                     | 0.53              |
| 33:DA:739:C:C2    | 33:DA:740:U:C6     | 2.96                     | 0.53              |
| 33:DA:782:A:C6    | 33:DA:783:C:C2     | 2.96                     | 0.53              |
| 33:DA:795:C:H5'   | 33:DA:1522:U:H5''  | 1.91                     | 0.53              |
| 33:DA:880:C:H2'   | 33:DA:881:G:O4'    | 2.09                     | 0.53              |
| 33:DA:888:G:C4    | 33:DA:889:A:N7     | 2.76                     | 0.53              |
| 33:DA:980:C:H2'   | 33:DA:981:U:O4'    | 2.09                     | 0.53              |
| 33:DA:1142:G:H2'  | 33:DA:1143:G:O4'   | 2.09                     | 0.53              |
| 33:DA:1149:C:H6   | 33:DA:1149:C:H3'   | 1.72                     | 0.53              |
| 33:DA:1151:A:H4'  | 33:DA:1152:A:OP1   | 2.09                     | 0.53              |
| 33:DA:1484:C:C2'  | 33:DA:1485:U:H5'   | 2.39                     | 0.53              |
| 36:DD:22:SER:HB3  | 36:DD:108:ALA:O    | 2.08                     | 0.53              |
| 36:DD:63:ILE:O    | 36:DD:63:ILE:HG23  | 2.08                     | 0.53              |
| 42:DJ:66:GLU:HB2  | 46:DN:98:ALA:CB    | 2.37                     | 0.53              |
| 45:DM:18:LEU:CD1  | 45:DM:33:LEU:HB2   | 2.39                     | 0.53              |
| 46:DN:23:ARG:O    | 46:DN:26:LEU:HB2   | 2.09                     | 0.53              |
| 47:DO:63:ARG:HH11 | 47:DO:63:ARG:CG    | 2.10                     | 0.53              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 49:DQ:56:ASP:O   | 49:DQ:57:VAL:HG23 | 2.08                     | 0.53              |
| 4:A3:9:ALA:C     | 4:A3:11:LYS:N     | 2.61                     | 0.53              |
| 4:A3:41:ARG:NE   | 4:A3:41:ARG:HA    | 2.23                     | 0.53              |
| 8:AB:73:A:C2'    | 8:AB:74:A:OP2     | 2.57                     | 0.53              |
| 8:AB:123:G:N1    | 8:AB:129:C:N4     | 2.57                     | 0.53              |
| 8:AB:341:C:H2'   | 8:AB:342:A:O4'    | 2.08                     | 0.53              |
| 8:AB:396:G:N2    | 8:AB:397:U:H1'    | 2.24                     | 0.53              |
| 8:AB:586:A:OP1   | 11:AE:84:THR:HB   | 2.08                     | 0.53              |
| 8:AB:662:G:C2'   | 8:AB:663:G:H5'    | 2.38                     | 0.53              |
| 8:AB:716:A:P     | 47:BO:88:ARG:HB3  | 2.47                     | 0.53              |
| 8:AB:763:G:C8    | 8:AB:763:G:C3'    | 2.92                     | 0.53              |
| 8:AB:771:G:N2    | 8:AB:772:C:C2     | 2.77                     | 0.53              |
| 8:AB:864:G:C8    | 8:AB:864:G:C3'    | 2.91                     | 0.53              |
| 8:AB:974:G:O4'   | 8:AB:1186:G:N2    | 2.42                     | 0.53              |
| 8:AB:1136:G:H8   | 8:AB:1136:G:C5'   | 2.21                     | 0.53              |
| 8:AB:1422:G:C2   | 8:AB:1423:G:C8    | 2.96                     | 0.53              |
| 8:AB:1635:A:H5'  | 8:AB:1635:A:C8    | 2.36                     | 0.53              |
| 8:AB:1736:U:H3'  | 8:AB:1737:G:C8    | 2.43                     | 0.53              |
| 8:AB:1775:U:H2'  | 8:AB:1776:G:H5'   | 1.89                     | 0.53              |
| 8:AB:1820:U:O2   | 9:AC:200:MET:O    | 2.27                     | 0.53              |
| 8:AB:1913:A:N6   | 33:BA:1492:A:C2   | 2.76                     | 0.53              |
| 8:AB:1960:A:N7   | 8:AB:1961:C:H5    | 2.06                     | 0.53              |
| 8:AB:2086:U:C2   | 8:AB:2234:G:N1    | 2.77                     | 0.53              |
| 8:AB:2102:G:C6   | 8:AB:2103:C:N4    | 2.76                     | 0.53              |
| 8:AB:2189:U:H2'  | 8:AB:2190:G:C8    | 2.43                     | 0.53              |
| 8:AB:2358:A:N6   | 8:AB:2428:G:H22   | 2.04                     | 0.53              |
| 8:AB:2386:A:HO2' | 29:AW:37:VAL:HB   | 1.73                     | 0.53              |
| 8:AB:2455:G:N1   | 8:AB:2498:C:N4    | 2.57                     | 0.53              |
| 8:AB:2471:A:N6   | 8:AB:2479:U:H3    | 2.06                     | 0.53              |
| 8:AB:2734:A:H2'  | 8:AB:2735:G:H5'   | 1.89                     | 0.53              |
| 8:AB:2841:C:N3   | 8:AB:2877:G:C2    | 2.77                     | 0.53              |
| 9:AC:212:TRP:CH2 | 9:AC:217:PRO:HD3  | 2.44                     | 0.53              |
| 10:AD:149:ASN:C  | 10:AD:151:THR:N   | 2.61                     | 0.53              |
| 11:AE:1:MET:CG   | 11:AE:2:GLU:H     | 2.15                     | 0.53              |
| 12:AF:129:MET:O  | 12:AF:152:ASP:O   | 2.26                     | 0.53              |
| 18:AL:27:LEU:N   | 18:AL:27:LEU:HD12 | 2.24                     | 0.53              |
| 26:AT:26:LYS:HG3 | 26:AT:27:SER:N    | 2.24                     | 0.53              |
| 26:AT:39:THR:HG1 | 26:AT:42:GLU:HB3  | 1.74                     | 0.53              |
| 32:AZ:66:ILE:HB  | 32:AZ:67:PRO:HD3  | 1.90                     | 0.53              |
| 33:BA:22:G:H2'   | 33:BA:23:C:C6     | 2.44                     | 0.53              |
| 33:BA:32:A:N6    | 33:BA:553:A:C6    | 2.76                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:53:A:N1      | 33:BA:359:G:C6     | 2.77                     | 0.53              |
| 33:BA:58:C:C3'     | 33:BA:59:A:H5''    | 2.38                     | 0.53              |
| 33:BA:248:C:H2'    | 33:BA:249:U:C6     | 2.43                     | 0.53              |
| 33:BA:479:U:C2'    | 33:BA:480:U:H5'    | 2.38                     | 0.53              |
| 33:BA:655:A:O5'    | 33:BA:655:A:H8     | 1.91                     | 0.53              |
| 33:BA:775:G:C4     | 33:BA:776:G:C8     | 2.97                     | 0.53              |
| 33:BA:791:G:C2'    | 33:BA:792:A:H5'    | 2.39                     | 0.53              |
| 33:BA:887:G:N2     | 33:BA:1489:G:H4'   | 2.21                     | 0.53              |
| 33:BA:913:A:H1'    | 33:BA:914:A:O4'    | 2.08                     | 0.53              |
| 33:BA:928:G:N2     | 33:BA:1390:U:O2    | 2.42                     | 0.53              |
| 33:BA:1112:C:H1'   | 35:BC:178:ARG:HD3  | 1.91                     | 0.53              |
| 33:BA:1503:A:C2    | 33:BA:1531:A:N3    | 2.77                     | 0.53              |
| 34:BB:101:THR:HG22 | 34:BB:174:GLU:OE1  | 2.08                     | 0.53              |
| 38:BF:86:ARG:CZ    | 50:BR:63:TYR:HB3   | 2.38                     | 0.53              |
| 40:BH:86:LYS:HB2   | 40:BH:124:ILE:HD11 | 1.89                     | 0.53              |
| 53:BU:6:ARG:C      | 53:BU:7:GLU:HG3    | 2.28                     | 0.53              |
| 2:C1:14:ALA:HA     | 2:C1:48:TYR:CE2    | 2.44                     | 0.53              |
| 7:CA:55:U:C2'      | 7:CA:56:G:H5''     | 2.38                     | 0.53              |
| 8:CB:269:C:C4      | 8:CB:270:A:N6      | 2.76                     | 0.53              |
| 8:CB:565:C:C4      | 8:CB:566:U:O4      | 2.61                     | 0.53              |
| 8:CB:707:G:C5'     | 8:CB:708:G:OP2     | 2.56                     | 0.53              |
| 8:CB:768:G:C5      | 8:CB:769:U:N3      | 2.77                     | 0.53              |
| 8:CB:797:G:C5      | 8:CB:798:G:C8      | 2.97                     | 0.53              |
| 8:CB:928:A:H4'     | 31:CY:37:ARG:HH11  | 1.73                     | 0.53              |
| 8:CB:1094:U:O2     | 8:CB:1097:U:C5     | 2.60                     | 0.53              |
| 8:CB:1343:G:N2     | 8:CB:1384:A:H2     | 2.07                     | 0.53              |
| 8:CB:1345:C:C4     | 8:CB:1346:G:N7     | 2.77                     | 0.53              |
| 8:CB:1623:G:C5     | 8:CB:1624:U:C5     | 2.96                     | 0.53              |
| 8:CB:1651:G:C5'    | 20:CN:39:PRO:HG2   | 2.32                     | 0.53              |
| 8:CB:1707:G:N1     | 8:CB:1708:C:C2     | 2.77                     | 0.53              |
| 8:CB:1773:A:C2     | 8:CB:1774:C:H1'    | 2.44                     | 0.53              |
| 8:CB:1897:G:N1     | 8:CB:1898:U:C2     | 2.76                     | 0.53              |
| 8:CB:2147:A:H4'    | 8:CB:2148:G:N7     | 2.24                     | 0.53              |
| 8:CB:2386:A:C2     | 8:CB:2387:U:C2     | 2.97                     | 0.53              |
| 8:CB:2488:G:H2'    | 8:CB:2489:U:H6     | 1.74                     | 0.53              |
| 8:CB:2648:G:H8     | 8:CB:2648:G:O5'    | 1.91                     | 0.53              |
| 8:CB:2671:G:C2     | 8:CB:2672:U:C2     | 2.96                     | 0.53              |
| 8:CB:2852:G:C5     | 8:CB:2853:C:C4     | 2.97                     | 0.53              |
| 8:CB:2859:G:C2'    | 8:CB:2860:A:H5''   | 2.37                     | 0.53              |
| 8:CB:2869:G:H2'    | 8:CB:2870:C:O4'    | 2.09                     | 0.53              |
| 10:CD:1:MET:CA     | 10:CD:81:GLU:HG2   | 2.39                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:CE:56:GLY:O     | 11:CE:57:LYS:HD2   | 2.08                     | 0.53              |
| 13:CG:58:ALA:O     | 13:CG:60:GLY:N     | 2.38                     | 0.53              |
| 13:CG:143:VAL:HA   | 13:CG:146:ASP:CB   | 2.39                     | 0.53              |
| 14:CH:27:ARG:N     | 14:CH:31:VAL:HG23  | 2.23                     | 0.53              |
| 15:CI:60:VAL:HG23  | 15:CI:66:PHE:HB3   | 1.91                     | 0.53              |
| 17:CK:20:MET:O     | 17:CK:20:MET:HG3   | 2.08                     | 0.53              |
| 18:CL:91:ASP:O     | 18:CL:93:ASN:N     | 2.42                     | 0.53              |
| 18:CL:110:VAL:CB   | 18:CL:126:ARG:HH12 | 2.21                     | 0.53              |
| 18:CL:112:LEU:HD21 | 18:CL:134:ALA:HB2  | 1.91                     | 0.53              |
| 21:CO:37:ALA:CB    | 21:CO:78:VAL:HG21  | 2.38                     | 0.53              |
| 27:CU:8:ASP:O      | 27:CU:10:VAL:HG13  | 2.09                     | 0.53              |
| 32:CZ:66:ILE:HB    | 32:CZ:67:PRO:HD3   | 1.90                     | 0.53              |
| 33:DA:19:A:H5''    | 33:DA:19:A:C8      | 2.44                     | 0.53              |
| 33:DA:119:A:N7     | 33:DA:240:G:C6     | 2.77                     | 0.53              |
| 33:DA:254:G:OP1    | 49:DQ:67:SER:OG    | 2.17                     | 0.53              |
| 33:DA:397:A:N6     | 33:DA:548:G:C5     | 2.77                     | 0.53              |
| 33:DA:656:G:N1     | 33:DA:751:U:N3     | 2.57                     | 0.53              |
| 33:DA:865:A:H1'    | 33:DA:918:A:O2'    | 2.08                     | 0.53              |
| 33:DA:952:U:C2'    | 33:DA:953:G:O4'    | 2.53                     | 0.53              |
| 33:DA:1088:G:H21   | 33:DA:1167:A:N6    | 2.06                     | 0.53              |
| 33:DA:1261:A:N6    | 33:DA:1262:C:C4    | 2.77                     | 0.53              |
| 33:DA:1290:G:O5'   | 33:DA:1290:G:C8    | 2.60                     | 0.53              |
| 33:DA:1333:A:C5    | 33:DA:1334:G:C8    | 2.96                     | 0.53              |
| 33:DA:1409:C:O2    | 33:DA:1491:G:N2    | 2.41                     | 0.53              |
| 34:DB:65:LYS:HD3   | 34:DB:89:PHE:HZ    | 1.73                     | 0.53              |
| 36:DD:11:SER:OG    | 36:DD:18:LEU:HB2   | 2.08                     | 0.53              |
| 38:DF:42:TRP:NE1   | 38:DF:61:LEU:HD23  | 2.16                     | 0.53              |
| 38:DF:100:SER:HB2  | 50:DR:23:LYS:CD    | 2.26                     | 0.53              |
| 43:DK:88:PRO:HG3   | 53:DU:28:LEU:HD22  | 1.91                     | 0.53              |
| 44:DL:54:VAL:O     | 44:DL:61:GLU:HA    | 2.08                     | 0.53              |
| 8:AB:170:U:H2'     | 8:AB:171:U:O4'     | 2.09                     | 0.53              |
| 8:AB:179:C:H5'     | 8:AB:180:G:OP2     | 2.09                     | 0.53              |
| 8:AB:244:A:C2'     | 8:AB:245:G:O5'     | 2.57                     | 0.53              |
| 8:AB:352:A:H2'     | 8:AB:353:C:H6      | 1.73                     | 0.53              |
| 8:AB:379:G:N2      | 8:AB:396:G:C4      | 2.77                     | 0.53              |
| 8:AB:470:A:C6      | 8:AB:471:A:C6      | 2.97                     | 0.53              |
| 8:AB:968:C:H3'     | 8:AB:968:C:C6      | 2.44                     | 0.53              |
| 8:AB:993:G:C2      | 8:AB:1162:G:C2     | 2.97                     | 0.53              |
| 8:AB:1029:A:C8     | 8:AB:1029:A:C3'    | 2.92                     | 0.53              |
| 8:AB:1275:A:C2     | 8:AB:1645:G:N2     | 2.76                     | 0.53              |
| 8:AB:1317:G:H2'    | 8:AB:1318:U:O4'    | 2.08                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1324:G:N2    | 8:AB:1331:G:C4     | 2.77                     | 0.53              |
| 8:AB:1429:G:C2'   | 8:AB:1430:G:H5'    | 2.39                     | 0.53              |
| 8:AB:1471:G:H1    | 8:AB:1520:U:H3     | 1.56                     | 0.53              |
| 8:AB:1528:A:C8    | 8:AB:1544:A:N6     | 2.77                     | 0.53              |
| 8:AB:1761:C:C2'   | 8:AB:1762:A:H5'    | 2.39                     | 0.53              |
| 8:AB:1974:C:H2'   | 8:AB:1975:G:O5'    | 2.08                     | 0.53              |
| 8:AB:2006:C:O2'   | 8:AB:2823:A:H1'    | 2.08                     | 0.53              |
| 8:AB:2082:A:C8    | 8:AB:2083:G:N7     | 2.77                     | 0.53              |
| 8:AB:2363:G:H2'   | 8:AB:2364:C:H6     | 1.74                     | 0.53              |
| 8:AB:2394:C:OP1   | 18:AL:63:LYS:HD2   | 2.09                     | 0.53              |
| 8:AB:2466:C:H1'   | 19:AM:118:LYS:HZ2  | 1.73                     | 0.53              |
| 8:AB:2531:A:H4'   | 13:AG:156:TYR:CZ   | 2.43                     | 0.53              |
| 8:AB:2633:G:C1'   | 10:AD:62:LYS:HG3   | 2.37                     | 0.53              |
| 8:AB:2722:G:N3    | 8:AB:2723:C:C6     | 2.77                     | 0.53              |
| 8:AB:2811:G:OP1   | 10:AD:61:THR:HB    | 2.09                     | 0.53              |
| 8:AB:2821:A:OP2   | 10:AD:115:GLY:CA   | 2.57                     | 0.53              |
| 9:AC:155:ARG:O    | 9:AC:159:THR:HG23  | 2.09                     | 0.53              |
| 9:AC:209:ALA:O    | 9:AC:213:ARG:NH1   | 2.41                     | 0.53              |
| 11:AE:49:ARG:C    | 11:AE:51:GLU:N     | 2.60                     | 0.53              |
| 12:AF:35:LEU:HD11 | 12:AF:60:SER:HB3   | 1.91                     | 0.53              |
| 14:AH:4:ILE:O     | 14:AH:37:VAL:HB    | 2.08                     | 0.53              |
| 16:AJ:62:VAL:O    | 16:AJ:64:VAL:N     | 2.41                     | 0.53              |
| 18:AL:110:VAL:HB  | 18:AL:126:ARG:HH12 | 1.74                     | 0.53              |
| 19:AM:64:TRP:HE3  | 19:AM:102:LEU:HB3  | 1.74                     | 0.53              |
| 26:AT:21:SER:O    | 26:AT:24:MET:HB2   | 2.09                     | 0.53              |
| 26:AT:57:VAL:HG23 | 26:AT:86:THR:HG23  | 1.90                     | 0.53              |
| 29:AW:38:ARG:HB3  | 29:AW:68:PHE:CE1   | 2.43                     | 0.53              |
| 33:BA:57:G:O6     | 33:BA:356:A:N6     | 2.41                     | 0.53              |
| 33:BA:255:G:OP2   | 49:BQ:67:SER:OG    | 2.27                     | 0.53              |
| 33:BA:345:C:H5'   | 33:BA:345:C:C6     | 2.42                     | 0.53              |
| 33:BA:400:C:H2'   | 33:BA:401:C:C5'    | 2.38                     | 0.53              |
| 33:BA:967:C:OP2   | 33:BA:968:A:H2'    | 2.08                     | 0.53              |
| 35:BC:107:LYS:HE3 | 35:BC:143:LEU:HD12 | 1.91                     | 0.53              |
| 36:BD:104:MET:SD  | 36:BD:142:VAL:CG2  | 2.97                     | 0.53              |
| 39:BG:16:LYS:HB2  | 39:BG:43:TYR:OH    | 2.09                     | 0.53              |
| 41:BI:33:SER:HB3  | 41:BI:36:GLN:NE2   | 2.14                     | 0.53              |
| 43:BK:34:THR:OG1  | 43:BK:35:ASP:N     | 2.42                     | 0.53              |
| 44:BL:18:SER:C    | 44:BL:20:VAL:H     | 2.10                     | 0.53              |
| 45:BM:28:ARG:HD3  | 45:BM:28:ARG:O     | 2.09                     | 0.53              |
| 46:BN:52:ARG:NH2  | 51:BS:13:HIS:NE2   | 2.57                     | 0.53              |
| 50:BR:57:ALA:HA   | 50:BR:60:ARG:HD2   | 1.91                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 50:BR:70:THR:HG23 | 50:BR:73:HIS:H    | 1.72                     | 0.53              |
| 53:BU:43:GLU:O    | 53:BU:47:ALA:HB3  | 2.09                     | 0.53              |
| 8:CB:45:G:H5''    | 8:CB:46:G:H5'     | 1.91                     | 0.53              |
| 8:CB:85:G:H5'     | 27:CU:28:LEU:CG   | 2.39                     | 0.53              |
| 8:CB:104:A:C8     | 8:CB:104:A:C3'    | 2.91                     | 0.53              |
| 8:CB:533:G:H2'    | 8:CB:534:U:H6     | 1.69                     | 0.53              |
| 8:CB:692:C:H2'    | 8:CB:693:A:H8     | 1.73                     | 0.53              |
| 8:CB:751:A:C4     | 8:CB:789:A:C2     | 2.97                     | 0.53              |
| 8:CB:867:C:H3'    | 8:CB:867:C:H6     | 1.74                     | 0.53              |
| 8:CB:933:A:C8     | 8:CB:933:A:C3'    | 2.91                     | 0.53              |
| 8:CB:979:A:C2     | 8:CB:982:C:N3     | 2.76                     | 0.53              |
| 8:CB:1024:G:OP1   | 8:CB:1026:G:OP1   | 2.27                     | 0.53              |
| 8:CB:1120:G:H2'   | 8:CB:1121:C:H6    | 1.74                     | 0.53              |
| 8:CB:1265:A:C1'   | 8:CB:1267:U:C5    | 2.91                     | 0.53              |
| 8:CB:1347:A:H2'   | 8:CB:1348:C:O4'   | 2.09                     | 0.53              |
| 8:CB:1639:C:H2'   | 8:CB:1640:A:H5'   | 1.91                     | 0.53              |
| 8:CB:1840:G:N2    | 8:CB:1841:U:H1'   | 2.24                     | 0.53              |
| 8:CB:1933:G:N2    | 8:CB:1967:C:N3    | 2.56                     | 0.53              |
| 8:CB:1942:C:H3'   | 8:CB:1943:U:H5''  | 1.91                     | 0.53              |
| 8:CB:2087:G:C8    | 8:CB:2087:G:H3'   | 2.42                     | 0.53              |
| 8:CB:2204:G:O2'   | 8:CB:2205:A:H5'   | 2.07                     | 0.53              |
| 8:CB:2267:A:H3'   | 8:CB:2268:A:C5'   | 2.35                     | 0.53              |
| 8:CB:2270:A:H2'   | 8:CB:2271:G:H5'   | 1.90                     | 0.53              |
| 8:CB:2279:G:H5''  | 8:CB:2279:G:H8    | 1.73                     | 0.53              |
| 8:CB:2360:G:H2'   | 8:CB:2361:G:O5'   | 2.08                     | 0.53              |
| 8:CB:2706:A:H8    | 8:CB:2706:A:O5'   | 1.91                     | 0.53              |
| 8:CB:2784:U:H4'   | 10:CD:41:ALA:C    | 2.28                     | 0.53              |
| 9:CC:128:THR:HG23 | 9:CC:189:ALA:H    | 1.73                     | 0.53              |
| 12:CF:78:ILE:HG23 | 12:CF:82:TYR:HD1  | 1.73                     | 0.53              |
| 14:CH:26:ALA:N    | 14:CH:30:LEU:HD12 | 2.23                     | 0.53              |
| 14:CH:79:THR:HG23 | 14:CH:145:ASN:O   | 2.09                     | 0.53              |
| 16:CJ:132:HIS:O   | 16:CJ:133:ALA:C   | 2.46                     | 0.53              |
| 23:CQ:49:ARG:CG   | 24:CR:77:PHE:CZ   | 2.72                     | 0.53              |
| 24:CR:41:ILE:HG13 | 24:CR:43:ASN:HB2  | 1.90                     | 0.53              |
| 26:CT:30:ILE:HG23 | 26:CT:32:LEU:HD11 | 1.90                     | 0.53              |
| 26:CT:68:LYS:HE2  | 26:CT:74:ILE:O    | 2.08                     | 0.53              |
| 27:CU:75:ALA:O    | 27:CU:76:THR:HG23 | 2.08                     | 0.53              |
| 30:CX:7:ARG:HH12  | 30:CX:56:LEU:HD22 | 1.73                     | 0.53              |
| 33:DA:133:U:C2    | 33:DA:230:G:C6    | 2.96                     | 0.53              |
| 33:DA:179:A:C5    | 33:DA:180:U:C4    | 2.97                     | 0.53              |
| 33:DA:299:G:N2    | 33:DA:565:U:O2    | 2.41                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:402:G:C2    | 33:DA:403:C:C4    | 2.97                     | 0.53              |
| 33:DA:598:U:C2    | 33:DA:599:C:C5    | 2.96                     | 0.53              |
| 33:DA:718:A:N7    | 33:DA:719:C:C2    | 2.77                     | 0.53              |
| 33:DA:745:G:H5''  | 33:DA:851:G:C2'   | 2.39                     | 0.53              |
| 33:DA:951:G:H21   | 33:DA:970:C:H2'   | 1.73                     | 0.53              |
| 33:DA:1038:C:H5'' | 33:DA:1039:G:OP2  | 2.08                     | 0.53              |
| 33:DA:1047:G:H2'  | 33:DA:1048:G:H5'  | 1.91                     | 0.53              |
| 33:DA:1200:C:H5'  | 33:DA:1201:A:H5'  | 1.89                     | 0.53              |
| 33:DA:1231:G:C6   | 33:DA:1232:U:C2   | 2.97                     | 0.53              |
| 33:DA:1423:G:C4   | 33:DA:1424:U:H5   | 2.21                     | 0.53              |
| 35:DC:9:ILE:HG23  | 35:DC:10:ARG:HG2  | 1.90                     | 0.53              |
| 36:DD:138:PRO:O   | 36:DD:139:ASN:CB  | 2.52                     | 0.53              |
| 36:DD:146:GLU:HA  | 36:DD:149:LYS:CD  | 2.39                     | 0.53              |
| 42:DJ:86:ALA:C    | 42:DJ:87:LEU:HD22 | 2.28                     | 0.53              |
| 52:DT:64:GLY:HA2  | 52:DT:67:HIS:HB2  | 1.91                     | 0.53              |
| 2:A1:42:VAL:HG12  | 2:A1:43:ARG:H     | 1.74                     | 0.53              |
| 8:AB:160:A:C2     | 8:AB:161:A:C5     | 2.97                     | 0.53              |
| 8:AB:210:C:HO2'   | 8:AB:211:C:H5'    | 1.72                     | 0.53              |
| 8:AB:246:C:H42    | 8:AB:252:G:H1     | 1.56                     | 0.53              |
| 8:AB:283:G:N2     | 8:AB:284:U:H1'    | 2.23                     | 0.53              |
| 8:AB:396:G:O2'    | 8:AB:397:U:H5'    | 2.09                     | 0.53              |
| 8:AB:477:A:H2'    | 8:AB:478:A:N7     | 2.23                     | 0.53              |
| 8:AB:681:G:H2'    | 8:AB:682:G:C8     | 2.32                     | 0.53              |
| 8:AB:727:A:C2     | 9:AC:15:VAL:HG11  | 2.36                     | 0.53              |
| 8:AB:813:U:H1'    | 8:AB:1226:A:N3    | 2.24                     | 0.53              |
| 8:AB:871:U:C2     | 8:AB:907:G:N1     | 2.76                     | 0.53              |
| 8:AB:997:G:OP1    | 23:AQ:92:LYS:NZ   | 2.40                     | 0.53              |
| 8:AB:1195:G:C2    | 8:AB:1196:C:C6    | 2.97                     | 0.53              |
| 8:AB:1286:A:C2    | 8:AB:1329:U:C5    | 2.97                     | 0.53              |
| 8:AB:1343:G:H1'   | 8:AB:1597:A:C4    | 2.44                     | 0.53              |
| 8:AB:1451:C:H6    | 8:AB:1451:C:C5'   | 2.22                     | 0.53              |
| 8:AB:1550:C:H2'   | 8:AB:1551:A:C8    | 2.43                     | 0.53              |
| 8:AB:1562:U:C2    | 8:AB:1563:U:C6    | 2.97                     | 0.53              |
| 8:AB:1809:A:C4    | 8:AB:1810:A:N7    | 2.77                     | 0.53              |
| 8:AB:2511:U:C2'   | 8:AB:2512:C:H5'   | 2.39                     | 0.53              |
| 8:AB:2592:G:C2    | 8:AB:2593:U:O2    | 2.62                     | 0.53              |
| 8:AB:2885:G:C5    | 8:AB:2886:A:C8    | 2.96                     | 0.53              |
| 9:AC:4:LYS:HE2    | 9:AC:5:CYS:SG     | 2.49                     | 0.53              |
| 9:AC:257:ARG:O    | 9:AC:261:ARG:NH1  | 2.42                     | 0.53              |
| 13:AG:45:ALA:HB3  | 13:AG:48:THR:O    | 2.09                     | 0.53              |
| 13:AG:77:GLY:HA2  | 13:AG:82:PHE:HE2  | 1.73                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 17:AK:54:LYS:HD3   | 17:AK:54:LYS:H    | 1.72                     | 0.53              |
| 18:AL:105:ILE:HD13 | 18:AL:105:ILE:N   | 2.24                     | 0.53              |
| 19:AM:3:GLN:H      | 19:AM:4:PRO:HD2   | 1.72                     | 0.53              |
| 20:AN:1:MET:HG2    | 20:AN:6:SER:OG    | 2.09                     | 0.53              |
| 20:AN:2:ARG:O      | 20:AN:3:HIS:CG    | 2.62                     | 0.53              |
| 22:AP:27:VAL:HG13  | 22:AP:47:ILE:HD12 | 1.89                     | 0.53              |
| 25:AS:20:VAL:O     | 25:AS:22:ASP:N    | 2.34                     | 0.53              |
| 27:AU:27:VAL:O     | 27:AU:28:LEU:HD23 | 2.08                     | 0.53              |
| 33:BA:533:A:C4'    | 33:BA:534:U:OP2   | 2.54                     | 0.53              |
| 33:BA:562:U:N3     | 33:BA:884:U:C5    | 2.75                     | 0.53              |
| 33:BA:569:C:H5'    | 33:BA:574:A:N6    | 2.24                     | 0.53              |
| 33:BA:571:U:H3     | 33:BA:864:A:H61   | 1.54                     | 0.53              |
| 33:BA:675:A:C5     | 33:BA:676:A:C8    | 2.97                     | 0.53              |
| 33:BA:870:U:O5'    | 33:BA:870:U:C2'   | 2.57                     | 0.53              |
| 33:BA:1035:A:H8    | 33:BA:1035:A:H3'  | 1.74                     | 0.53              |
| 35:BC:17:TRP:C     | 35:BC:19:SER:N    | 2.59                     | 0.53              |
| 35:BC:63:ILE:HD13  | 35:BC:94:ALA:HB1  | 1.91                     | 0.53              |
| 36:BD:12:ARG:HD2   | 36:BD:37:PRO:CG   | 2.33                     | 0.53              |
| 40:BH:12:ARG:HD2   | 40:BH:26:MET:HE3  | 1.90                     | 0.53              |
| 40:BH:26:MET:HB2   | 40:BH:27:PRO:HD3  | 1.90                     | 0.53              |
| 47:BO:35:ILE:HD12  | 47:BO:55:LEU:HD12 | 1.90                     | 0.53              |
| 48:BP:7:ALA:H      | 48:BP:18:GLN:H    | 1.57                     | 0.53              |
| 7:CA:39:A:C2       | 7:CA:40:U:N3      | 2.76                     | 0.53              |
| 7:CA:57:A:N3       | 12:CF:25:MET:HG2  | 2.24                     | 0.53              |
| 7:CA:90:C:O2'      | 7:CA:91:C:H5'     | 2.09                     | 0.53              |
| 8:CB:64:A:H2       | 8:CB:65:U:H3      | 1.55                     | 0.53              |
| 8:CB:108:G:N1      | 8:CB:109:C:C2     | 2.77                     | 0.53              |
| 8:CB:131:A:H5''    | 8:CB:131:A:H8     | 1.74                     | 0.53              |
| 8:CB:181:A:H1'     | 8:CB:435:C:C5'    | 2.38                     | 0.53              |
| 8:CB:335:C:C6      | 8:CB:335:C:H5'    | 2.44                     | 0.53              |
| 8:CB:358:U:C2      | 8:CB:359:G:C8     | 2.96                     | 0.53              |
| 8:CB:396:G:N1      | 8:CB:397:U:C2     | 2.77                     | 0.53              |
| 8:CB:682:G:H2'     | 8:CB:683:U:H6     | 1.74                     | 0.53              |
| 8:CB:818:G:N1      | 8:CB:1188:U:OP2   | 2.29                     | 0.53              |
| 8:CB:905:A:C2'     | 8:CB:906:U:H5''   | 2.38                     | 0.53              |
| 8:CB:947:A:O5'     | 8:CB:947:A:H8     | 1.91                     | 0.53              |
| 8:CB:1057:A:C2'    | 8:CB:1058:U:H5'   | 2.38                     | 0.53              |
| 8:CB:1184:U:C2     | 8:CB:1185:G:N7    | 2.77                     | 0.53              |
| 8:CB:1232:G:C4     | 8:CB:1233:C:C5    | 2.96                     | 0.53              |
| 8:CB:1557:C:C5     | 8:CB:1558:C:H2'   | 2.43                     | 0.53              |
| 8:CB:1736:U:H3'    | 8:CB:1737:G:C8    | 2.43                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1914:C:H2'    | 8:CB:1915:U:H6    | 1.72                     | 0.53              |
| 8:CB:2003:A:H2'    | 8:CB:2004:G:O5'   | 2.09                     | 0.53              |
| 8:CB:2327:A:H8     | 8:CB:2327:A:H5'   | 1.74                     | 0.53              |
| 8:CB:2438:U:C2'    | 8:CB:2439:A:H5''  | 2.38                     | 0.53              |
| 8:CB:2496:C:OP1    | 19:CM:81:ARG:CB   | 2.57                     | 0.53              |
| 8:CB:2503:A:N3     | 8:CB:2503:A:H2'   | 2.24                     | 0.53              |
| 8:CB:2641:G:H8     | 8:CB:2641:G:C5'   | 2.22                     | 0.53              |
| 8:CB:2737:G:C2     | 8:CB:2768:U:N3    | 2.76                     | 0.53              |
| 8:CB:2865:U:C2     | 8:CB:2866:U:C5    | 2.97                     | 0.53              |
| 9:CC:158:GLY:N     | 9:CC:197:ALA:HB2  | 2.24                     | 0.53              |
| 10:CD:68:PHE:CB    | 10:CD:90:PHE:CE2  | 2.92                     | 0.53              |
| 16:CJ:13:ARG:HG2   | 16:CJ:50:THR:HG23 | 1.91                     | 0.53              |
| 16:CJ:113:PRO:O    | 16:CJ:115:GLY:N   | 2.41                     | 0.53              |
| 17:CK:12:ASP:N     | 17:CK:85:VAL:HG22 | 2.23                     | 0.53              |
| 18:CL:79:LEU:HD11  | 18:CL:112:LEU:CD2 | 2.39                     | 0.53              |
| 20:CN:17:ARG:O     | 20:CN:20:MET:N    | 2.41                     | 0.53              |
| 21:CO:34:HIS:HA    | 21:CO:53:THR:HB   | 1.91                     | 0.53              |
| 22:CP:1:SER:CB     | 22:CP:5:LYS:HG2   | 2.39                     | 0.53              |
| 27:CU:24:VAL:O     | 27:CU:25:LYS:HD2  | 2.09                     | 0.53              |
| 30:CX:25:GLN:NE2   | 30:CX:46:VAL:HG11 | 2.23                     | 0.53              |
| 33:DA:116:A:H8     | 33:DA:116:A:O5'   | 1.91                     | 0.53              |
| 33:DA:500:G:H5''   | 44:DL:120:ARG:NH1 | 2.23                     | 0.53              |
| 33:DA:519:C:H5     | 33:DA:529:G:H21   | 1.57                     | 0.53              |
| 33:DA:538:G:O2'    | 33:DA:539:A:H5'   | 2.08                     | 0.53              |
| 33:DA:623:C:C2     | 33:DA:624:C:C5    | 2.97                     | 0.53              |
| 33:DA:629:A:C5     | 33:DA:630:A:C8    | 2.97                     | 0.53              |
| 33:DA:828:U:C5     | 33:DA:829:G:N9    | 2.76                     | 0.53              |
| 33:DA:1022:A:C6    | 33:DA:1023:U:C4   | 2.97                     | 0.53              |
| 36:DD:2:ARG:HH22   | 36:DD:114:ARG:NE  | 2.06                     | 0.53              |
| 36:DD:81:LEU:C     | 36:DD:83:GLY:H    | 2.12                     | 0.53              |
| 36:DD:142:VAL:HG23 | 36:DD:179:GLY:CA  | 2.31                     | 0.53              |
| 37:DE:87:VAL:HG13  | 37:DE:88:HIS:N    | 2.23                     | 0.53              |
| 38:DF:6:ILE:O      | 38:DF:6:ILE:HG13  | 2.08                     | 0.53              |
| 39:DG:58:LEU:O     | 39:DG:62:GLU:HG3  | 2.09                     | 0.53              |
| 42:DJ:77:VAL:HG12  | 42:DJ:78:GLU:H    | 1.73                     | 0.53              |
| 2:A1:12:SER:HB2    | 2:A1:21:THR:O     | 2.09                     | 0.53              |
| 2:A1:12:SER:CA     | 2:A1:50:GLU:HB3   | 2.32                     | 0.53              |
| 4:A3:26:ALA:HB3    | 18:AL:62:PRO:HB2  | 1.91                     | 0.53              |
| 8:AB:20:C:H2'      | 8:AB:21:A:C8      | 2.44                     | 0.53              |
| 8:AB:61:C:C2       | 8:AB:94:A:C2      | 2.88                     | 0.53              |
| 8:AB:260:G:H3'     | 8:AB:260:G:C8     | 2.44                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:356:G:C4     | 8:AB:357:C:C6      | 2.97                     | 0.53              |
| 8:AB:486:C:O2     | 8:AB:495:G:C2      | 2.62                     | 0.53              |
| 8:AB:663:G:O6     | 8:AB:664:G:C6      | 2.62                     | 0.53              |
| 8:AB:770:G:H1'    | 8:AB:1379:U:C4     | 2.44                     | 0.53              |
| 8:AB:783:A:C8     | 8:AB:784:G:H4'     | 2.37                     | 0.53              |
| 8:AB:855:G:H1'    | 29:AW:24:ARG:HD2   | 1.90                     | 0.53              |
| 8:AB:933:A:H2'    | 8:AB:934:U:H5'     | 1.90                     | 0.53              |
| 8:AB:1008:A:H61   | 8:AB:1136:G:H1     | 1.56                     | 0.53              |
| 8:AB:1193:G:N2    | 8:AB:1194:A:N3     | 2.57                     | 0.53              |
| 8:AB:1205:A:C4'   | 8:AB:1206:G:OP2    | 2.51                     | 0.53              |
| 8:AB:1268:A:H2'   | 8:AB:1269:A:O5'    | 2.08                     | 0.53              |
| 8:AB:1578:U:H6    | 8:AB:1578:U:H5''   | 1.73                     | 0.53              |
| 8:AB:1612:C:C2    | 8:AB:1620:G:N2     | 2.76                     | 0.53              |
| 8:AB:1708:C:H2'   | 8:AB:1709:U:C5     | 2.43                     | 0.53              |
| 8:AB:1779:U:H5    | 8:AB:1784:A:N7     | 2.06                     | 0.53              |
| 8:AB:1824:G:C2    | 9:AC:249:VAL:HG12  | 2.44                     | 0.53              |
| 8:AB:2352:A:H5'   | 8:AB:2352:A:C8     | 2.36                     | 0.53              |
| 8:AB:2481:G:HO2'  | 8:AB:2482:A:H8     | 1.55                     | 0.53              |
| 8:AB:2487:G:C2'   | 8:AB:2488:G:H5'    | 2.39                     | 0.53              |
| 8:AB:2623:G:H2'   | 8:AB:2624:G:H5'    | 1.90                     | 0.53              |
| 8:AB:2873:A:O3'   | 20:AN:5:LYS:HB2    | 2.08                     | 0.53              |
| 9:AC:229:HIS:NE2  | 9:AC:244:VAL:HG23  | 2.23                     | 0.53              |
| 10:AD:2:ILE:O     | 10:AD:3:GLY:O      | 2.25                     | 0.53              |
| 10:AD:56:LYS:O    | 10:AD:57:ALA:C     | 2.47                     | 0.53              |
| 11:AE:67:ARG:H    | 11:AE:67:ARG:CD    | 2.21                     | 0.53              |
| 14:AH:46:PHE:HA   | 14:AH:49:ALA:CB    | 2.38                     | 0.53              |
| 17:AK:19:VAL:HG12 | 17:AK:43:ILE:HA    | 1.90                     | 0.53              |
| 21:AO:88:LYS:HD2  | 21:AO:116:GLN:NE2  | 2.24                     | 0.53              |
| 23:AQ:25:GLY:C    | 23:AQ:29:ARG:HB2   | 2.30                     | 0.53              |
| 33:BA:292:G:N7    | 33:BA:293:G:H1'    | 2.24                     | 0.53              |
| 33:BA:450:G:H22   | 33:BA:482:A:N6     | 2.05                     | 0.53              |
| 33:BA:743:A:N6    | 33:BA:744:C:N4     | 2.56                     | 0.53              |
| 33:BA:778:G:H2'   | 33:BA:779:C:O5'    | 2.09                     | 0.53              |
| 33:BA:804:U:C5    | 33:BA:805:C:H5     | 2.27                     | 0.53              |
| 33:BA:905:U:H5    | 33:BA:906:A:N7     | 2.07                     | 0.53              |
| 33:BA:979:C:C4    | 33:BA:980:C:C4     | 2.97                     | 0.53              |
| 33:BA:1013:G:H2'  | 33:BA:1015:G:OP2   | 2.09                     | 0.53              |
| 33:BA:1425:U:O2'  | 33:BA:1426:G:H5'   | 2.09                     | 0.53              |
| 35:BC:57:GLU:HB2  | 35:BC:64:ARG:HB3   | 1.91                     | 0.53              |
| 35:BC:70:ALA:HB3  | 35:BC:114:LEU:HD11 | 1.91                     | 0.53              |
| 36:BD:102:TYR:CD1 | 36:BD:107:GLY:O    | 2.61                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:BD:142:VAL:HG23 | 36:BD:143:SER:N    | 2.24                     | 0.53              |
| 36:BD:169:TRP:CE2  | 36:BD:185:PRO:HG3  | 2.44                     | 0.53              |
| 39:BG:76:SER:OG    | 39:BG:77:ARG:N     | 2.41                     | 0.53              |
| 48:BP:20:VAL:HG13  | 48:BP:22:ALA:H     | 1.73                     | 0.53              |
| 48:BP:68:SER:HB3   | 48:BP:71:VAL:CG1   | 2.38                     | 0.53              |
| 2:C1:37:LYS:HB2    | 8:CB:2344:U:C2'    | 2.39                     | 0.53              |
| 4:C3:38:LYS:HZ1    | 8:CB:2350:C:H5     | 1.57                     | 0.53              |
| 5:C4:2:LYS:HA      | 5:C4:36:ARG:O      | 2.08                     | 0.53              |
| 7:CA:6:G:H2'       | 7:CA:7:G:C8        | 2.44                     | 0.53              |
| 7:CA:47:C:C5'      | 21:CO:97:PHE:HZ    | 2.07                     | 0.53              |
| 7:CA:99:A:N3       | 7:CA:100:G:C8      | 2.77                     | 0.53              |
| 8:CB:194:G:C5      | 8:CB:195:A:N7      | 2.77                     | 0.53              |
| 8:CB:222:A:C8      | 8:CB:224:U:C6      | 2.96                     | 0.53              |
| 8:CB:593:U:H2'     | 8:CB:594:U:C6      | 2.43                     | 0.53              |
| 8:CB:666:A:C5      | 8:CB:667:U:C5      | 2.91                     | 0.53              |
| 8:CB:825:A:C6      | 8:CB:826:U:C4      | 2.97                     | 0.53              |
| 8:CB:825:A:H5''    | 8:CB:825:A:C8      | 2.44                     | 0.53              |
| 8:CB:870:U:H2'     | 8:CB:870:U:O2      | 2.08                     | 0.53              |
| 8:CB:1020:A:C2     | 8:CB:1141:U:C2     | 2.97                     | 0.53              |
| 8:CB:1025:G:N7     | 8:CB:1135:C:C1'    | 2.72                     | 0.53              |
| 8:CB:1317:G:H2'    | 8:CB:1318:U:O4'    | 2.09                     | 0.53              |
| 8:CB:1340:U:HO2'   | 8:CB:1341:G:P      | 2.31                     | 0.53              |
| 8:CB:1813:G:H8     | 8:CB:1813:G:O5'    | 1.91                     | 0.53              |
| 8:CB:2102:G:C2     | 8:CB:2188:U:C2     | 2.97                     | 0.53              |
| 8:CB:2211:A:H4'    | 8:CB:2211:A:OP2    | 2.09                     | 0.53              |
| 8:CB:2239:G:O5'    | 8:CB:2239:G:H8     | 1.92                     | 0.53              |
| 8:CB:2539:C:C5     | 8:CB:2540:C:H5     | 2.26                     | 0.53              |
| 11:CE:134:LEU:HD23 | 11:CE:135:ALA:N    | 2.24                     | 0.53              |
| 11:CE:193:VAL:C    | 11:CE:195:GLN:H    | 2.13                     | 0.53              |
| 12:CF:6:TYR:N      | 12:CF:6:TYR:CD2    | 2.77                     | 0.53              |
| 16:CJ:20:ALA:HB2   | 16:CJ:56:VAL:CG1   | 2.39                     | 0.53              |
| 16:CJ:98:GLU:O     | 16:CJ:102:GLU:CG   | 2.53                     | 0.53              |
| 18:CL:78:ARG:HA    | 18:CL:111:ILE:HD11 | 1.90                     | 0.53              |
| 20:CN:17:ARG:O     | 20:CN:18:GLN:C     | 2.47                     | 0.53              |
| 21:CO:92:PHE:CD1   | 21:CO:117:PHE:HB2  | 2.44                     | 0.53              |
| 21:CO:108:ASP:O    | 21:CO:112:GLU:HG3  | 2.08                     | 0.53              |
| 24:CR:65:ALA:H     | 24:CR:100:GLY:CA   | 2.22                     | 0.53              |
| 25:CS:21:ALA:O     | 25:CS:74:ILE:CD1   | 2.57                     | 0.53              |
| 33:DA:56:U:O2      | 33:DA:368:U:C5     | 2.62                     | 0.53              |
| 33:DA:130:A:C8     | 49:DQ:64:ARG:HB2   | 2.44                     | 0.53              |
| 33:DA:408:A:C5     | 33:DA:409:U:C6     | 2.96                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:434:U:O3'    | 33:DA:435:A:O4'    | 2.27                     | 0.53              |
| 33:DA:590:U:H2'    | 33:DA:591:U:H6     | 1.73                     | 0.53              |
| 33:DA:687:A:C2     | 33:DA:704:A:C4     | 2.96                     | 0.53              |
| 33:DA:1220:G:C8    | 33:DA:1220:G:H3'   | 2.44                     | 0.53              |
| 33:DA:1288:A:C2    | 33:DA:1352:C:O2    | 2.60                     | 0.53              |
| 33:DA:1443:C:C6    | 33:DA:1443:C:C3'   | 2.92                     | 0.53              |
| 33:DA:1461:G:H8    | 33:DA:1461:G:O5'   | 1.92                     | 0.53              |
| 42:DJ:32:THR:OG1   | 42:DJ:82:LYS:HB2   | 2.09                     | 0.53              |
| 46:DN:2:LYS:O      | 46:DN:4:SER:N      | 2.42                     | 0.53              |
| 47:DO:27:GLN:O     | 47:DO:31:LEU:HD13  | 2.09                     | 0.53              |
| 47:DO:35:ILE:HD12  | 47:DO:55:LEU:HD12  | 1.91                     | 0.53              |
| 48:DP:19:VAL:HG12  | 48:DP:37:GLY:C     | 2.28                     | 0.53              |
| 7:AA:7:G:H2'       | 7:AA:8:C:C6        | 2.44                     | 0.53              |
| 7:AA:99:A:C5       | 7:AA:100:G:N7      | 2.76                     | 0.53              |
| 8:AB:58:G:C5       | 8:AB:59:U:C5       | 2.96                     | 0.53              |
| 8:AB:345:A:O2'     | 8:AB:347:A:N6      | 2.41                     | 0.53              |
| 8:AB:425:G:C2      | 8:AB:426:C:C6      | 2.97                     | 0.53              |
| 8:AB:593:U:H2'     | 8:AB:594:U:C6      | 2.44                     | 0.53              |
| 8:AB:688:U:C6      | 8:AB:688:U:C3'     | 2.92                     | 0.53              |
| 8:AB:1196:C:H1'    | 8:AB:1226:A:C4     | 2.44                     | 0.53              |
| 8:AB:1355:G:C2     | 8:AB:1356:G:N7     | 2.76                     | 0.53              |
| 8:AB:1359:A:C2'    | 8:AB:1360:G:H5'    | 2.39                     | 0.53              |
| 8:AB:1417:C:C2'    | 8:AB:1418:G:H5'    | 2.37                     | 0.53              |
| 8:AB:1709:U:O2     | 8:AB:1709:U:H2'    | 2.08                     | 0.53              |
| 8:AB:1885:A:H2'    | 8:AB:1886:U:C6     | 2.44                     | 0.53              |
| 8:AB:2052:A:H5'    | 10:AD:148:GLN:H    | 1.73                     | 0.53              |
| 8:AB:2289:G:C2     | 8:AB:2290:G:C8     | 2.97                     | 0.53              |
| 8:AB:2469:A:C6     | 8:AB:2482:A:C8     | 2.97                     | 0.53              |
| 8:AB:2478:A:H8     | 8:AB:2478:A:C5'    | 2.20                     | 0.53              |
| 8:AB:2755:C:O5'    | 8:AB:2755:C:H6     | 1.92                     | 0.53              |
| 9:AC:32:LEU:HD23   | 9:AC:61:TYR:CE1    | 2.44                     | 0.53              |
| 9:AC:61:TYR:CD2    | 9:AC:63:ILE:HD12   | 2.44                     | 0.53              |
| 9:AC:174:ARG:HA    | 9:AC:180:MET:HA    | 1.91                     | 0.53              |
| 9:AC:204:LEU:CG    | 9:AC:210:ALA:HB1   | 2.39                     | 0.53              |
| 11:AE:18:THR:O     | 11:AE:19:PHE:HB3   | 2.09                     | 0.53              |
| 11:AE:97:ASN:N     | 11:AE:97:ASN:OD1   | 2.41                     | 0.53              |
| 12:AF:103:ILE:HD12 | 12:AF:173:ASP:HA   | 1.90                     | 0.53              |
| 13:AG:88:LEU:CD2   | 13:AG:161:VAL:HG22 | 2.39                     | 0.53              |
| 14:AH:37:VAL:N     | 14:AH:38:PRO:HD3   | 2.24                     | 0.53              |
| 14:AH:89:LYS:HZ1   | 14:AH:123:ARG:HH11 | 1.57                     | 0.53              |
| 16:AJ:19:ASP:O     | 16:AJ:20:ALA:CB    | 2.57                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:AL:91:ASP:O     | 18:AL:92:LEU:HB3   | 2.08                     | 0.53              |
| 18:AL:142:ILE:O    | 18:AL:142:ILE:HG13 | 2.09                     | 0.53              |
| 19:AM:5:LYS:O      | 19:AM:6:ARG:C      | 2.46                     | 0.53              |
| 19:AM:50:ARG:NH2   | 19:AM:53:MET:HE3   | 2.24                     | 0.53              |
| 19:AM:73:ILE:O     | 19:AM:74:THR:CB    | 2.56                     | 0.53              |
| 20:AN:42:LYS:HE3   | 20:AN:45:ARG:HH11  | 1.73                     | 0.53              |
| 20:AN:87:PHE:CB    | 20:AN:94:TYR:CZ    | 2.92                     | 0.53              |
| 26:AT:18:GLU:O     | 26:AT:20:ALA:O     | 2.27                     | 0.53              |
| 33:BA:362:G:H3'    | 33:BA:362:G:H8     | 1.73                     | 0.53              |
| 33:BA:1112:C:H6    | 33:BA:1112:C:O5'   | 1.92                     | 0.53              |
| 33:BA:1132:C:H2'   | 33:BA:1133:G:C8    | 2.43                     | 0.53              |
| 33:BA:1205:U:C2'   | 33:BA:1206:G:H5'   | 2.39                     | 0.53              |
| 33:BA:1250:A:C2    | 33:BA:1251:A:C4    | 2.97                     | 0.53              |
| 33:BA:1277:C:O2'   | 33:BA:1279:G:H1'   | 2.09                     | 0.53              |
| 33:BA:1283:U:O2    | 33:BA:1283:U:H2'   | 2.06                     | 0.53              |
| 33:BA:1315:U:H3'   | 33:BA:1316:G:O4'   | 2.09                     | 0.53              |
| 33:BA:1332:A:C6    | 33:BA:1333:A:C5    | 2.97                     | 0.53              |
| 34:BB:34:ARG:HH11  | 34:BB:35:ASN:HB3   | 1.73                     | 0.53              |
| 34:BB:206:ILE:HD13 | 34:BB:206:ILE:O    | 2.09                     | 0.53              |
| 35:BC:85:LYS:O     | 35:BC:89:VAL:HG23  | 2.09                     | 0.53              |
| 38:BF:38:ARG:NH2   | 38:BF:63:ASN:HD21  | 2.07                     | 0.53              |
| 39:BG:73:GLU:HG2   | 39:BG:90:VAL:HG12  | 1.91                     | 0.53              |
| 40:BH:17:GLN:CD    | 40:BH:69:ALA:HB1   | 2.30                     | 0.53              |
| 41:BI:9:GLY:O      | 41:BI:15:ALA:HA    | 2.09                     | 0.53              |
| 45:BM:70:ARG:O     | 45:BM:74:MET:N     | 2.35                     | 0.53              |
| 45:BM:109:LYS:HG3  | 45:BM:110:GLY:N    | 2.23                     | 0.53              |
| 52:BT:6:ALA:O      | 52:BT:9:ARG:CB     | 2.56                     | 0.53              |
| 53:BU:38:GLU:OE2   | 53:BU:39:LYS:HG3   | 2.09                     | 0.53              |
| 8:CB:126:A:C6      | 8:CB:127:A:N1      | 2.77                     | 0.53              |
| 8:CB:137:U:N3      | 8:CB:138:U:C2      | 2.77                     | 0.53              |
| 8:CB:197:A:C6      | 8:CB:198:C:C2      | 2.97                     | 0.53              |
| 8:CB:260:G:H21     | 8:CB:609:A:H1'     | 1.74                     | 0.53              |
| 8:CB:301:G:C4      | 8:CB:317:G:N1      | 2.77                     | 0.53              |
| 8:CB:398:C:OP1     | 32:CZ:49:ARG:HD2   | 2.08                     | 0.53              |
| 8:CB:442:G:C4      | 8:CB:444:C:H5      | 2.27                     | 0.53              |
| 8:CB:443:A:OP1     | 11:CE:40:ARG:CA    | 2.49                     | 0.53              |
| 8:CB:483:A:H5'     | 27:CU:45:GLN:HB2   | 1.90                     | 0.53              |
| 8:CB:609:A:C6      | 8:CB:610:C:O2      | 2.62                     | 0.53              |
| 8:CB:758:C:O2      | 8:CB:1981:A:C2     | 2.62                     | 0.53              |
| 8:CB:775:G:H5''    | 8:CB:777:G:H1'     | 1.90                     | 0.53              |
| 8:CB:798:G:H2'     | 8:CB:798:G:N3      | 2.24                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:841:G:C2      | 8:CB:938:G:C6      | 2.97                     | 0.53              |
| 8:CB:857:G:H4'     | 29:CW:71:LYS:NZ    | 2.23                     | 0.53              |
| 8:CB:871:U:O2'     | 8:CB:872:U:H5''    | 2.09                     | 0.53              |
| 8:CB:941:A:H2      | 8:CB:1189:A:H2     | 1.55                     | 0.53              |
| 8:CB:1000:A:C5     | 8:CB:1155:A:C5     | 2.97                     | 0.53              |
| 8:CB:1026:G:O4'    | 8:CB:1134:A:C2     | 2.62                     | 0.53              |
| 8:CB:1233:C:C2     | 8:CB:1234:U:C5     | 2.97                     | 0.53              |
| 8:CB:1339:G:H5''   | 26:CT:19:LYS:CG    | 2.39                     | 0.53              |
| 8:CB:1354:A:H2'    | 8:CB:1355:G:O4'    | 2.09                     | 0.53              |
| 8:CB:1369:G:H1'    | 8:CB:1809:A:N1     | 2.23                     | 0.53              |
| 8:CB:1452:G:C4     | 8:CB:2702:G:C6     | 2.97                     | 0.53              |
| 8:CB:1465:G:H2'    | 8:CB:1466:U:O4'    | 2.09                     | 0.53              |
| 8:CB:1564:C:N3     | 8:CB:1565:C:N4     | 2.57                     | 0.53              |
| 8:CB:2200:C:H3'    | 8:CB:2200:C:C6     | 2.44                     | 0.53              |
| 8:CB:2393:U:H2'    | 8:CB:2394:C:O4'    | 2.09                     | 0.53              |
| 8:CB:2682:A:H2'    | 8:CB:2682:A:N3     | 2.23                     | 0.53              |
| 8:CB:2708:G:O2'    | 8:CB:2709:G:H5'    | 2.07                     | 0.53              |
| 8:CB:2719:G:H5''   | 8:CB:2719:G:H8     | 1.73                     | 0.53              |
| 8:CB:2761:A:C5     | 8:CB:2762:C:H5     | 2.26                     | 0.53              |
| 9:CC:156:SER:CB    | 9:CC:195:GLY:HA3   | 2.39                     | 0.53              |
| 10:CD:146:ILE:HD13 | 10:CD:155:VAL:HG22 | 1.90                     | 0.53              |
| 13:CG:145:ALA:C    | 13:CG:147:LEU:N    | 2.60                     | 0.53              |
| 13:CG:162:ARG:HG3  | 13:CG:166:GLU:CB   | 2.39                     | 0.53              |
| 14:CH:94:ILE:HG22  | 14:CH:122:LEU:HG   | 1.90                     | 0.53              |
| 16:CJ:64:VAL:HG12  | 16:CJ:68:LYS:HB2   | 1.90                     | 0.53              |
| 17:CK:2:ILE:HA     | 17:CK:33:ALA:H     | 1.74                     | 0.53              |
| 17:CK:71:ARG:CB    | 17:CK:72:PRO:CD    | 2.75                     | 0.53              |
| 21:CO:72:ALA:O     | 21:CO:76:LYS:NZ    | 2.42                     | 0.53              |
| 22:CP:37:LYS:O     | 22:CP:38:ARG:HB2   | 2.09                     | 0.53              |
| 30:CX:57:LEU:HG    | 30:CX:58:ASN:N     | 2.23                     | 0.53              |
| 31:CY:2:LYS:O      | 31:CY:38:GLU:O     | 2.27                     | 0.53              |
| 31:CY:43:ILE:C     | 31:CY:43:ILE:HD13  | 2.30                     | 0.53              |
| 32:CZ:59:ARG:HG3   | 32:CZ:62:LYS:N     | 2.24                     | 0.53              |
| 33:DA:15:G:C1'     | 37:DE:23:THR:HG21  | 2.39                     | 0.53              |
| 33:DA:155:A:N1     | 33:DA:166:U:O4     | 2.42                     | 0.53              |
| 33:DA:254:G:H4'    | 49:DQ:19:SER:OG    | 2.08                     | 0.53              |
| 33:DA:293:G:O2'    | 33:DA:294:U:H5'    | 2.08                     | 0.53              |
| 33:DA:585:G:H2'    | 33:DA:586:C:H5'    | 1.91                     | 0.53              |
| 33:DA:697:U:O2     | 33:DA:785:G:N2     | 2.38                     | 0.53              |
| 33:DA:805:C:O2     | 33:DA:806:C:C5     | 2.62                     | 0.53              |
| 33:DA:867:G:H2'    | 33:DA:868:C:C6     | 2.41                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1056:U:O2'  | 33:DA:1057:G:H5'  | 2.09                     | 0.53              |
| 33:DA:1413:A:C2   | 33:DA:1414:U:C1'  | 2.91                     | 0.53              |
| 33:DA:1501:C:C5   | 33:DA:1504:G:C5   | 2.97                     | 0.53              |
| 34:DB:101:THR:C   | 34:DB:103:TRP:N   | 2.62                     | 0.53              |
| 37:DE:82:HIS:NE2  | 37:DE:146:MET:HG3 | 2.24                     | 0.53              |
| 42:DJ:17:LEU:HD11 | 42:DJ:96:VAL:HG12 | 1.91                     | 0.53              |
| 46:DN:69:PRO:C    | 46:DN:71:GLY:H    | 2.12                     | 0.53              |
| 50:DR:51:GLN:HE22 | 50:DR:54:LEU:HD22 | 1.72                     | 0.53              |
| 2:A1:9:LYS:HZ2    | 4:A3:34:LYS:NZ    | 2.07                     | 0.52              |
| 2:A1:49:LYS:O     | 2:A1:50:GLU:O     | 2.27                     | 0.52              |
| 4:A3:51:LYS:C     | 4:A3:53:ASP:N     | 2.61                     | 0.52              |
| 8:AB:223:A:N6     | 8:AB:422:A:C5     | 2.77                     | 0.52              |
| 8:AB:252:G:C2     | 8:AB:253:C:C6     | 2.97                     | 0.52              |
| 8:AB:465:G:C2     | 8:AB:466:A:N1     | 2.77                     | 0.52              |
| 8:AB:1024:G:H1'   | 8:AB:1144:A:O2'   | 2.09                     | 0.52              |
| 8:AB:1218:G:C6    | 8:AB:1232:G:O6    | 2.61                     | 0.52              |
| 8:AB:1326:U:C5    | 8:AB:1327:A:N7    | 2.77                     | 0.52              |
| 8:AB:1390:U:C2'   | 8:AB:1391:U:H5'   | 2.39                     | 0.52              |
| 8:AB:1466:U:H3'   | 8:AB:1466:U:C6    | 2.44                     | 0.52              |
| 8:AB:1666:G:O2'   | 8:AB:1667:G:H5'   | 2.09                     | 0.52              |
| 8:AB:1676:A:C4    | 8:AB:1677:A:C8    | 2.97                     | 0.52              |
| 8:AB:1824:G:OP1   | 9:AC:52:HIS:NE2   | 2.41                     | 0.52              |
| 8:AB:1947:C:C4    | 8:AB:1948:G:N7    | 2.77                     | 0.52              |
| 8:AB:1975:G:C4    | 8:AB:1976:U:C6    | 2.97                     | 0.52              |
| 8:AB:2090:A:O2'   | 32:AZ:49:ARG:HD2  | 2.08                     | 0.52              |
| 8:AB:2293:G:P     | 21:AO:13:ARG:HH21 | 2.32                     | 0.52              |
| 8:AB:2360:G:N2    | 8:AB:2428:G:C4    | 2.77                     | 0.52              |
| 8:AB:2526:G:O2'   | 8:AB:2527:C:H5'   | 2.10                     | 0.52              |
| 8:AB:2574:G:N3    | 8:AB:2575:C:C6    | 2.77                     | 0.52              |
| 8:AB:2739:U:O2'   | 8:AB:2740:A:P     | 2.68                     | 0.52              |
| 9:AC:50:THR:O     | 9:AC:51:ARG:O     | 2.26                     | 0.52              |
| 9:AC:204:LEU:CB   | 9:AC:210:ALA:HB1  | 2.40                     | 0.52              |
| 12:AF:78:ILE:HG23 | 12:AF:82:TYR:HD1  | 1.73                     | 0.52              |
| 18:AL:123:ARG:HA  | 18:AL:142:ILE:CA  | 2.30                     | 0.52              |
| 19:AM:55:ARG:HG2  | 19:AM:56:ALA:N    | 2.24                     | 0.52              |
| 21:AO:7:ARG:C     | 21:AO:8:ILE:HD12  | 2.30                     | 0.52              |
| 21:AO:27:VAL:O    | 21:AO:28:VAL:CB   | 2.57                     | 0.52              |
| 26:AT:1:MET:CE    | 26:AT:2:ILE:HG12  | 2.38                     | 0.52              |
| 26:AT:59:ASN:HB2  | 26:AT:84:TYR:HB2  | 1.90                     | 0.52              |
| 27:AU:82:VAL:HB   | 27:AU:94:PHE:CB   | 2.39                     | 0.52              |
| 32:AZ:44:PHE:O    | 32:AZ:45:THR:HB   | 2.09                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:159:G:H2'   | 33:BA:159:G:N3     | 2.23                     | 0.52              |
| 33:BA:341:C:H6    | 33:BA:341:C:H5''   | 1.74                     | 0.52              |
| 33:BA:620:C:C2    | 36:BD:131:ILE:HG21 | 2.44                     | 0.52              |
| 33:BA:665:A:H2'   | 33:BA:725:G:N2     | 2.24                     | 0.52              |
| 33:BA:705:G:H2'   | 33:BA:706:A:H8     | 1.74                     | 0.52              |
| 33:BA:757:U:OP1   | 33:BA:822:U:H2'    | 2.08                     | 0.52              |
| 33:BA:789:U:C5    | 33:BA:791:G:OP2    | 2.63                     | 0.52              |
| 33:BA:1114:C:H1'  | 46:BN:99:SER:HB2   | 1.90                     | 0.52              |
| 33:BA:1206:G:H2'  | 33:BA:1207:G:H8    | 1.75                     | 0.52              |
| 33:BA:1261:A:H2'  | 33:BA:1262:C:O4'   | 2.09                     | 0.52              |
| 33:BA:1423:G:C5   | 33:BA:1424:U:C5    | 2.98                     | 0.52              |
| 33:BA:1434:A:HO2' | 33:BA:1435:G:H5'   | 1.70                     | 0.52              |
| 34:BB:217:ALA:HB1 | 34:BB:221:ARG:NH2  | 2.24                     | 0.52              |
| 35:BC:146:LYS:HB2 | 35:BC:146:LYS:NZ   | 2.23                     | 0.52              |
| 36:BD:98:ASP:OD2  | 36:BD:114:ARG:HA   | 2.09                     | 0.52              |
| 37:BE:22:LYS:HB3  | 37:BE:29:ILE:CD1   | 2.40                     | 0.52              |
| 40:BH:24:VAL:O    | 40:BH:25:THR:HG23  | 2.09                     | 0.52              |
| 3:C2:18:PHE:CE2   | 3:C2:45:SER:HA     | 2.44                     | 0.52              |
| 3:C2:27:GLY:O     | 3:C2:28:ARG:C      | 2.46                     | 0.52              |
| 8:CB:85:G:H1      | 8:CB:97:C:N4       | 2.06                     | 0.52              |
| 8:CB:269:C:H2'    | 8:CB:270:A:H8      | 1.74                     | 0.52              |
| 8:CB:318:C:H2'    | 8:CB:319:G:C8      | 2.44                     | 0.52              |
| 8:CB:422:A:C2     | 8:CB:423:A:C4      | 2.97                     | 0.52              |
| 8:CB:476:G:C2     | 8:CB:479:A:C8      | 2.96                     | 0.52              |
| 8:CB:478:A:O5'    | 8:CB:478:A:H8      | 1.93                     | 0.52              |
| 8:CB:517:C:C2'    | 8:CB:518:G:O5'     | 2.57                     | 0.52              |
| 8:CB:523:C:H3'    | 8:CB:523:C:C6      | 2.44                     | 0.52              |
| 8:CB:689:A:C2     | 8:CB:690:G:C5      | 2.97                     | 0.52              |
| 8:CB:763:G:C8     | 8:CB:763:G:C3'     | 2.91                     | 0.52              |
| 8:CB:799:G:H3'    | 8:CB:800:A:H2'     | 1.89                     | 0.52              |
| 8:CB:970:U:H6     | 8:CB:970:U:O5'     | 1.91                     | 0.52              |
| 8:CB:976:G:H2'    | 8:CB:977:G:C8      | 2.39                     | 0.52              |
| 8:CB:1008:A:H8    | 8:CB:1008:A:O5'    | 1.93                     | 0.52              |
| 8:CB:1335:C:H6    | 8:CB:1335:C:H3'    | 1.75                     | 0.52              |
| 8:CB:1421:G:H1'   | 8:CB:2211:A:C6     | 2.44                     | 0.52              |
| 8:CB:1458:U:O2'   | 8:CB:1459:G:H5''   | 2.09                     | 0.52              |
| 8:CB:2061:G:N7    | 8:CB:2501:C:H4'    | 2.24                     | 0.52              |
| 8:CB:2086:U:N3    | 8:CB:2234:G:C6     | 2.77                     | 0.52              |
| 8:CB:2345:G:C5    | 8:CB:2381:A:C2     | 2.96                     | 0.52              |
| 8:CB:2461:A:C4    | 8:CB:2462:C:C6     | 2.97                     | 0.52              |
| 8:CB:2508:G:C6    | 8:CB:2582:G:O6     | 2.62                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2588:G:C6     | 8:CB:2589:A:N7     | 2.76                     | 0.52              |
| 8:CB:2648:G:C4     | 8:CB:2673:G:C2     | 2.96                     | 0.52              |
| 8:CB:2692:G:H1'    | 8:CB:2847:U:HO2'   | 1.74                     | 0.52              |
| 8:CB:2736:A:C2     | 8:CB:2769:U:C2     | 2.96                     | 0.52              |
| 9:CC:63:ILE:C      | 9:CC:64:VAL:CG2    | 2.77                     | 0.52              |
| 9:CC:167:ASP:CB    | 9:CC:172:THR:HG23  | 2.39                     | 0.52              |
| 9:CC:254:LYS:NZ    | 9:CC:254:LYS:H     | 2.06                     | 0.52              |
| 11:CE:9:GLN:C      | 11:CE:11:ALA:H     | 2.11                     | 0.52              |
| 11:CE:115:GLN:HE22 | 18:CL:13:LYS:HD2   | 1.74                     | 0.52              |
| 11:CE:124:PHE:HZ   | 11:CE:137:LYS:CG   | 2.22                     | 0.52              |
| 14:CH:146:VAL:HG12 | 14:CH:147:VAL:H    | 1.74                     | 0.52              |
| 15:CI:61:TYR:HB2   | 15:CI:63:ASP:H     | 1.74                     | 0.52              |
| 16:CJ:89:PHE:CD2   | 16:CJ:89:PHE:N     | 2.76                     | 0.52              |
| 17:CK:113:MET:O    | 17:CK:115:ILE:N    | 2.43                     | 0.52              |
| 21:CO:25:ARG:HH21  | 21:CO:40:ILE:HD11  | 1.74                     | 0.52              |
| 21:CO:98:GLN:O     | 21:CO:103:VAL:HG21 | 2.10                     | 0.52              |
| 23:CQ:27:ARG:O     | 23:CQ:27:ARG:HG2   | 2.09                     | 0.52              |
| 23:CQ:52:ARG:O     | 23:CQ:55:GLN:HB2   | 2.07                     | 0.52              |
| 23:CQ:88:GLU:HA    | 24:CR:53:PHE:HD1   | 1.73                     | 0.52              |
| 23:CQ:88:GLU:C     | 24:CR:53:PHE:HD1   | 2.12                     | 0.52              |
| 24:CR:39:LEU:HB2   | 24:CR:61:ALA:CB    | 2.39                     | 0.52              |
| 24:CR:64:VAL:HG22  | 24:CR:65:ALA:O     | 2.09                     | 0.52              |
| 24:CR:85:LYS:O     | 24:CR:86:GLN:OE1   | 2.27                     | 0.52              |
| 29:CW:27:GLY:O     | 29:CW:28:GLU:HB3   | 2.09                     | 0.52              |
| 33:DA:26:A:H61     | 33:DA:558:G:H1'    | 1.72                     | 0.52              |
| 33:DA:153:C:H2'    | 33:DA:154:U:C6     | 2.43                     | 0.52              |
| 33:DA:184:G:O4'    | 33:DA:224:U:H4'    | 2.09                     | 0.52              |
| 33:DA:246:A:N6     | 33:DA:281:G:H1'    | 2.25                     | 0.52              |
| 33:DA:345:C:H5'    | 33:DA:345:C:H6     | 1.72                     | 0.52              |
| 33:DA:522:C:H5''   | 44:DL:116:TYR:OH   | 2.09                     | 0.52              |
| 33:DA:982:U:H1'    | 55:DA:5204:HOH:O   | 2.09                     | 0.52              |
| 33:DA:1161:C:O2'   | 33:DA:1162:C:H5'   | 2.08                     | 0.52              |
| 33:DA:1205:U:C2'   | 33:DA:1206:G:H5''  | 2.39                     | 0.52              |
| 33:DA:1374:A:H2'   | 33:DA:1375:A:H8    | 1.74                     | 0.52              |
| 36:DD:118:SER:HA   | 36:DD:130:ASN:HB2  | 1.90                     | 0.52              |
| 39:DG:42:VAL:O     | 39:DG:46:LEU:HB2   | 2.09                     | 0.52              |
| 40:DH:110:MET:HB3  | 40:DH:114:ALA:HB3  | 1.90                     | 0.52              |
| 44:DL:55:ARG:C     | 44:DL:56:LEU:HD23  | 2.30                     | 0.52              |
| 52:DT:7:LYS:O      | 52:DT:10:ALA:HB2   | 2.09                     | 0.52              |
| 5:A4:11:CYS:SG     | 5:A4:33:HIS:NE2    | 2.81                     | 0.52              |
| 7:AA:69:G:H3'      | 7:AA:70:C:C6       | 2.44                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AA:75:G:O4'     | 28:AV:29:ILE:HG13 | 2.10                     | 0.52              |
| 7:AA:106:G:H2'    | 7:AA:107:G:C8     | 2.44                     | 0.52              |
| 7:AA:116:G:C2     | 7:AA:117:G:C8     | 2.97                     | 0.52              |
| 8:AB:49:A:H5'     | 8:AB:50:U:H2'     | 1.91                     | 0.52              |
| 8:AB:68:G:H2'     | 8:AB:69:C:H6      | 1.74                     | 0.52              |
| 8:AB:79:C:O2'     | 8:AB:346:A:H8     | 1.92                     | 0.52              |
| 8:AB:197:A:H5'    | 8:AB:197:A:C8     | 2.44                     | 0.52              |
| 8:AB:215:G:O3'    | 8:AB:216:A:H4'    | 2.08                     | 0.52              |
| 8:AB:319:G:H2'    | 8:AB:320:A:H8     | 1.74                     | 0.52              |
| 8:AB:464:U:O4'    | 8:AB:686:U:H5     | 1.92                     | 0.52              |
| 8:AB:506:G:H4'    | 8:AB:507:A:O4'    | 2.09                     | 0.52              |
| 8:AB:573:U:O4     | 8:AB:2030:A:H3'   | 2.10                     | 0.52              |
| 8:AB:578:G:H8     | 8:AB:578:G:O5'    | 1.92                     | 0.52              |
| 8:AB:601:C:O5'    | 8:AB:601:C:H6     | 1.91                     | 0.52              |
| 8:AB:841:G:C2     | 8:AB:938:G:C6     | 2.96                     | 0.52              |
| 8:AB:1021:A:H8    | 8:AB:1022:G:H4'   | 1.74                     | 0.52              |
| 8:AB:1048:A:C8    | 8:AB:1049:C:C5    | 2.96                     | 0.52              |
| 8:AB:1353:A:C5    | 8:AB:1378:A:C6    | 2.97                     | 0.52              |
| 8:AB:1375:U:C4    | 8:AB:1376:C:H5    | 2.27                     | 0.52              |
| 8:AB:1429:G:H2'   | 8:AB:1430:G:H5'   | 1.90                     | 0.52              |
| 8:AB:1693:U:H5''  | 8:AB:1694:C:H5    | 1.74                     | 0.52              |
| 8:AB:1821:A:C4    | 8:AB:1822:C:C5    | 2.96                     | 0.52              |
| 8:AB:1947:C:C2    | 8:AB:1960:A:H2    | 2.27                     | 0.52              |
| 8:AB:1989:G:N7    | 8:AB:1990:C:C5    | 2.77                     | 0.52              |
| 8:AB:2067:G:H5'   | 8:AB:2068:U:OP2   | 2.09                     | 0.52              |
| 8:AB:2201:G:C5    | 8:AB:2202:U:O2    | 2.62                     | 0.52              |
| 8:AB:2306:C:OP2   | 8:AB:2307:G:N7    | 2.42                     | 0.52              |
| 8:AB:2360:G:C1'   | 18:AL:61:LEU:HD23 | 2.39                     | 0.52              |
| 8:AB:2391:G:N2    | 8:AB:2424:C:C2    | 2.77                     | 0.52              |
| 8:AB:2747:G:O6    | 8:AB:2755:C:H5''  | 2.09                     | 0.52              |
| 8:AB:2758:A:N6    | 13:AG:66:THR:HG23 | 2.24                     | 0.52              |
| 8:AB:2870:C:H2'   | 8:AB:2871:U:C6    | 2.45                     | 0.52              |
| 9:AC:78:GLU:HB2   | 9:AC:92:LEU:HB3   | 1.90                     | 0.52              |
| 10:AD:7:LYS:HA    | 10:AD:26:VAL:HA   | 1.90                     | 0.52              |
| 10:AD:68:PHE:O    | 10:AD:70:LYS:N    | 2.42                     | 0.52              |
| 11:AE:7:ASP:O     | 11:AE:8:ALA:HB3   | 2.10                     | 0.52              |
| 11:AE:60:TRP:CZ3  | 11:AE:67:ARG:CB   | 2.93                     | 0.52              |
| 11:AE:190:ALA:N   | 11:AE:194:LYS:HE2 | 2.24                     | 0.52              |
| 12:AF:6:TYR:N     | 12:AF:6:TYR:CD2   | 2.77                     | 0.52              |
| 13:AG:97:VAL:HG21 | 13:AG:123:GLU:CA  | 2.27                     | 0.52              |
| 16:AJ:81:ILE:C    | 16:AJ:83:GLY:N    | 2.57                     | 0.52              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 17:AK:98:ARG:C   | 17:AK:99:ILE:HD12 | 2.30                     | 0.52              |
| 18:AL:110:VAL:H  | 18:AL:126:ARG:NH2 | 2.06                     | 0.52              |
| 19:AM:71:LYS:HE2 | 19:AM:93:VAL:CG1  | 2.38                     | 0.52              |
| 19:AM:124:LEU:N  | 19:AM:124:LEU:CD2 | 2.72                     | 0.52              |
| 23:AQ:49:ARG:O   | 23:AQ:51:GLN:N    | 2.42                     | 0.52              |
| 24:AR:2:TYR:HE1  | 24:AR:46:GLU:HG3  | 1.75                     | 0.52              |
| 26:AT:65:GLY:O   | 26:AT:66:LYS:CB   | 2.57                     | 0.52              |
| 30:AX:22:LEU:CG  | 30:AX:47:ARG:HH22 | 2.16                     | 0.52              |
| 32:AZ:56:ARG:NH1 | 32:AZ:57:VAL:N    | 2.56                     | 0.52              |
| 33:BA:109:A:C4   | 33:BA:327:A:C2    | 2.96                     | 0.52              |
| 33:BA:260:G:N7   | 55:BA:5060:HOH:O  | 2.41                     | 0.52              |
| 33:BA:394:G:H2'  | 33:BA:395:C:H6    | 1.65                     | 0.52              |
| 33:BA:582:C:N3   | 33:BA:760:G:C6    | 2.77                     | 0.52              |
| 33:BA:619:U:H5'' | 33:BA:620:C:OP2   | 2.08                     | 0.52              |
| 33:BA:835:U:OP1  | 50:BR:49:LYS:HB2  | 2.08                     | 0.52              |
| 33:BA:1096:C:O2' | 33:BA:1097:C:H5'  | 2.10                     | 0.52              |
| 33:BA:1254:A:H2' | 55:BA:5236:HOH:O  | 2.09                     | 0.52              |
| 33:BA:1387:G:H2' | 33:BA:1388:C:C6   | 2.44                     | 0.52              |
| 33:BA:1483:A:C8  | 33:BA:1484:C:C6   | 2.97                     | 0.52              |
| 34:BB:18:GLN:NE2 | 34:BB:203:ASP:OD1 | 2.42                     | 0.52              |
| 36:BD:9:LYS:HA   | 36:BD:12:ARG:HB3  | 1.90                     | 0.52              |
| 40:BH:10:LEU:O   | 40:BH:13:ILE:HB   | 2.08                     | 0.52              |
| 50:BR:44:THR:O   | 50:BR:46:THR:N    | 2.42                     | 0.52              |
| 2:C1:10:LEU:HB2  | 2:C1:24:LYS:HA    | 1.91                     | 0.52              |
| 3:C2:17:GLY:O    | 3:C2:19:ARG:N     | 2.42                     | 0.52              |
| 7:CA:45:A:C4     | 7:CA:46:A:C8      | 2.97                     | 0.52              |
| 8:CB:247:G:C8    | 8:CB:247:G:H3'    | 2.45                     | 0.52              |
| 8:CB:295:G:C2    | 8:CB:296:U:C5     | 2.97                     | 0.52              |
| 8:CB:305:C:H2'   | 8:CB:306:U:H5'    | 1.92                     | 0.52              |
| 8:CB:361:G:H2'   | 8:CB:362:A:H8     | 1.75                     | 0.52              |
| 8:CB:428:A:H2'   | 8:CB:429:A:H8     | 1.73                     | 0.52              |
| 8:CB:617:G:H2'   | 8:CB:618:G:H8     | 1.74                     | 0.52              |
| 8:CB:819:A:N7    | 8:CB:1189:A:C5    | 2.76                     | 0.52              |
| 8:CB:995:C:O2    | 16:CJ:3:THR:HG23  | 2.08                     | 0.52              |
| 8:CB:1054:A:H1'  | 8:CB:1106:G:N2    | 2.24                     | 0.52              |
| 8:CB:1196:C:C2   | 8:CB:1197:G:N7    | 2.76                     | 0.52              |
| 8:CB:1452:G:N2   | 8:CB:2702:G:C4    | 2.77                     | 0.52              |
| 8:CB:2051:A:N6   | 8:CB:2614:A:N7    | 2.57                     | 0.52              |
| 8:CB:2196:C:O2'  | 8:CB:2197:U:H5'   | 2.09                     | 0.52              |
| 8:CB:2294:G:N2   | 8:CB:2295:C:H1'   | 2.25                     | 0.52              |
| 8:CB:2483:C:O2   | 19:CM:55:ARG:NH2  | 2.42                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2519:U:N1     | 8:CB:2542:A:N6     | 2.57                     | 0.52              |
| 8:CB:2623:G:H5''   | 8:CB:2623:G:H8     | 1.74                     | 0.52              |
| 8:CB:2695:U:C6     | 8:CB:2695:U:C3'    | 2.92                     | 0.52              |
| 8:CB:2740:A:C2     | 8:CB:2741:A:C4     | 2.98                     | 0.52              |
| 8:CB:2748:A:H4'    | 13:CG:65:GLY:C     | 2.30                     | 0.52              |
| 8:CB:2753:A:C2     | 8:CB:2754:U:C2     | 2.97                     | 0.52              |
| 9:CC:62:ARG:HD3    | 9:CC:62:ARG:O      | 2.08                     | 0.52              |
| 10:CD:65:ALA:C     | 10:CD:67:HIS:N     | 2.62                     | 0.52              |
| 10:CD:146:ILE:HG12 | 10:CD:155:VAL:HG13 | 1.90                     | 0.52              |
| 12:CF:76:PHE:CD1   | 12:CF:78:ILE:HD12  | 2.44                     | 0.52              |
| 19:CM:5:LYS:HZ3    | 19:CM:8:LYS:CE     | 2.14                     | 0.52              |
| 19:CM:36:VAL:HG12  | 19:CM:125:PRO:HD3  | 1.90                     | 0.52              |
| 21:CO:16:ARG:HA    | 21:CO:16:ARG:HE    | 1.72                     | 0.52              |
| 21:CO:39:VAL:HG13  | 21:CO:48:LEU:HB2   | 1.91                     | 0.52              |
| 23:CQ:12:ARG:CG    | 23:CQ:12:ARG:NH1   | 2.68                     | 0.52              |
| 23:CQ:74:SER:O     | 23:CQ:78:PHE:CB    | 2.57                     | 0.52              |
| 26:CT:9:LYS:NZ     | 30:CX:22:LEU:HD13  | 2.24                     | 0.52              |
| 26:CT:23:ALA:HB3   | 26:CT:24:MET:SD    | 2.49                     | 0.52              |
| 27:CU:34:ILE:O     | 27:CU:35:VAL:HB    | 2.08                     | 0.52              |
| 33:DA:203:G:O2'    | 33:DA:465:A:N7     | 2.42                     | 0.52              |
| 33:DA:248:C:H2'    | 33:DA:249:U:C6     | 2.44                     | 0.52              |
| 33:DA:341:C:H6     | 33:DA:341:C:H5''   | 1.73                     | 0.52              |
| 33:DA:356:A:H2'    | 33:DA:357:G:C8     | 2.44                     | 0.52              |
| 33:DA:429:U:OP2    | 36:DD:12:ARG:NH2   | 2.42                     | 0.52              |
| 33:DA:644:U:C2     | 33:DA:645:G:C8     | 2.98                     | 0.52              |
| 33:DA:660:C:N4     | 33:DA:746:A:N1     | 2.57                     | 0.52              |
| 33:DA:671:G:C2     | 33:DA:672:U:C6     | 2.98                     | 0.52              |
| 33:DA:693:G:H8     | 33:DA:693:G:O5'    | 1.92                     | 0.52              |
| 33:DA:784:A:H2'    | 33:DA:785:G:O4'    | 2.09                     | 0.52              |
| 33:DA:787:A:N3     | 33:DA:788:U:C5     | 2.77                     | 0.52              |
| 33:DA:819:A:H2     | 55:DA:5135:HOH:O   | 1.91                     | 0.52              |
| 33:DA:926:G:H8     | 33:DA:926:G:OP1    | 1.92                     | 0.52              |
| 33:DA:1005:A:O2'   | 33:DA:1037:C:H1'   | 2.09                     | 0.52              |
| 33:DA:1049:U:H1'   | 33:DA:1201:A:C8    | 2.43                     | 0.52              |
| 33:DA:1082:A:H8    | 33:DA:1082:A:O5'   | 1.92                     | 0.52              |
| 33:DA:1196:A:H3'   | 33:DA:1197:A:H5''  | 1.91                     | 0.52              |
| 33:DA:1275:A:H2'   | 33:DA:1276:G:H8    | 1.72                     | 0.52              |
| 33:DA:1431:A:C6    | 33:DA:1432:G:C2    | 2.96                     | 0.52              |
| 34:DB:102:ASN:O    | 34:DB:104:LYS:N    | 2.42                     | 0.52              |
| 37:DE:46:GLY:HA3   | 37:DE:66:ALA:HB1   | 1.91                     | 0.52              |
| 37:DE:130:THR:O    | 37:DE:130:THR:HG22 | 2.09                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:DF:23:GLU:C    | 38:DF:25:TYR:H    | 2.12                     | 0.52              |
| 43:DK:51:PHE:O    | 43:DK:52:ARG:HB3  | 2.10                     | 0.52              |
| 48:DP:76:LYS:C    | 48:DP:78:VAL:H    | 2.12                     | 0.52              |
| 49:DQ:73:THR:HG22 | 49:DQ:74:LEU:N    | 2.25                     | 0.52              |
| 50:DR:51:GLN:NE2  | 50:DR:54:LEU:HD22 | 2.24                     | 0.52              |
| 51:DS:50:VAL:O    | 51:DS:56:HIS:HA   | 2.09                     | 0.52              |
| 4:A3:11:LYS:HB2   | 18:AL:63:LYS:HG3  | 1.92                     | 0.52              |
| 5:A4:36:ARG:HD3   | 8:AB:2742:G:P     | 2.49                     | 0.52              |
| 7:AA:73:A:N6      | 28:AV:31:TYR:CD1  | 2.78                     | 0.52              |
| 8:AB:14:A:C6      | 8:AB:526:A:C2     | 2.97                     | 0.52              |
| 8:AB:80:G:N1      | 8:AB:81:G:N7      | 2.57                     | 0.52              |
| 8:AB:126:A:C2     | 8:AB:127:A:C5     | 2.97                     | 0.52              |
| 8:AB:281:C:H2'    | 8:AB:282:A:O4'    | 2.09                     | 0.52              |
| 8:AB:338:G:C2     | 8:AB:339:U:O2     | 2.62                     | 0.52              |
| 8:AB:452:G:N1     | 8:AB:458:G:C8     | 2.78                     | 0.52              |
| 8:AB:465:G:H8     | 8:AB:465:G:H5''   | 1.74                     | 0.52              |
| 8:AB:467:G:N1     | 8:AB:468:G:C5     | 2.77                     | 0.52              |
| 8:AB:557:C:C6     | 8:AB:558:U:H5     | 2.27                     | 0.52              |
| 8:AB:817:C:C2'    | 8:AB:818:G:H5'    | 2.40                     | 0.52              |
| 8:AB:1019:U:H5''  | 8:AB:1020:A:OP2   | 2.09                     | 0.52              |
| 8:AB:1094:U:O2    | 8:AB:1097:U:C6    | 2.63                     | 0.52              |
| 8:AB:1248:G:O6    | 11:AE:47:LYS:HB3  | 2.09                     | 0.52              |
| 8:AB:1288:G:C8    | 8:AB:1327:A:N6    | 2.77                     | 0.52              |
| 8:AB:1408:G:N7    | 8:AB:1409:U:C5    | 2.77                     | 0.52              |
| 8:AB:1539:U:C2    | 8:AB:1540:G:C8    | 2.97                     | 0.52              |
| 8:AB:1679:A:C2'   | 8:AB:1680:U:H5'   | 2.40                     | 0.52              |
| 8:AB:1720:U:H2'   | 8:AB:1721:G:C5'   | 2.39                     | 0.52              |
| 8:AB:1741:C:H2'   | 8:AB:1742:U:H6    | 1.70                     | 0.52              |
| 8:AB:1801:A:OP2   | 9:AC:149:LYS:NZ   | 2.37                     | 0.52              |
| 8:AB:1809:A:C2    | 8:AB:1810:A:C5    | 2.97                     | 0.52              |
| 8:AB:2065:C:C5    | 8:AB:2066:C:H5    | 2.26                     | 0.52              |
| 8:AB:2071:A:H2'   | 8:AB:2072:C:C6    | 2.44                     | 0.52              |
| 8:AB:2086:U:O2    | 8:AB:2234:G:C2    | 2.62                     | 0.52              |
| 8:AB:2259:U:N3    | 8:AB:2260:C:C5    | 2.77                     | 0.52              |
| 8:AB:2291:U:OP1   | 8:AB:2380:C:O2'   | 2.28                     | 0.52              |
| 8:AB:2521:C:C4    | 8:AB:2522:U:C4    | 2.98                     | 0.52              |
| 8:AB:2655:G:N2    | 8:AB:2664:G:C4    | 2.77                     | 0.52              |
| 8:AB:2719:G:H8    | 8:AB:2719:G:C5'   | 2.21                     | 0.52              |
| 8:AB:2859:G:H2'   | 8:AB:2860:A:H5''  | 1.91                     | 0.52              |
| 9:AC:53:ILE:CD1   | 9:AC:218:THR:OG1  | 2.58                     | 0.52              |
| 10:AD:11:MET:HG3  | 10:AD:12:THR:N    | 2.20                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AD:149:ASN:O   | 10:AD:151:THR:N    | 2.43                     | 0.52              |
| 13:AG:60:GLY:O    | 13:AG:62:ALA:N     | 2.42                     | 0.52              |
| 14:AH:29:PHE:O    | 14:AH:32:PRO:O     | 2.26                     | 0.52              |
| 15:AI:107:GLU:C   | 15:AI:109:ALA:H    | 2.12                     | 0.52              |
| 16:AJ:15:TRP:O    | 16:AJ:139:VAL:HA   | 2.08                     | 0.52              |
| 16:AJ:20:ALA:HB2  | 16:AJ:56:VAL:CG1   | 2.39                     | 0.52              |
| 16:AJ:45:THR:HG23 | 23:AQ:63:ARG:HD2   | 1.91                     | 0.52              |
| 17:AK:82:ASN:HD22 | 17:AK:82:ASN:N     | 2.04                     | 0.52              |
| 18:AL:51:GLU:OE1  | 18:AL:55:MET:SD    | 2.68                     | 0.52              |
| 23:AQ:47:ARG:NH2  | 23:AQ:54:ARG:NH1   | 2.57                     | 0.52              |
| 24:AR:20:VAL:HG12 | 24:AR:97:LYS:NZ    | 2.24                     | 0.52              |
| 24:AR:78:ARG:HG2  | 24:AR:88:GLY:H     | 1.74                     | 0.52              |
| 25:AS:69:LEU:HB3  | 25:AS:107:VAL:HB   | 1.91                     | 0.52              |
| 26:AT:9:LYS:HG3   | 30:AX:22:LEU:HD11  | 1.90                     | 0.52              |
| 26:AT:91:GLN:H    | 26:AT:91:GLN:CD    | 2.12                     | 0.52              |
| 28:AV:70:ILE:HG12 | 28:AV:72:VAL:HG22  | 1.91                     | 0.52              |
| 30:AX:51:ALA:O    | 30:AX:52:ARG:C     | 2.46                     | 0.52              |
| 33:BA:81:A:H2     | 33:BA:89:U:C2      | 2.27                     | 0.52              |
| 33:BA:343:U:C6    | 33:BA:345:C:N4     | 2.77                     | 0.52              |
| 33:BA:661:G:N2    | 33:BA:745:G:C4     | 2.78                     | 0.52              |
| 33:BA:829:G:H22   | 33:BA:858:G:H1'    | 1.74                     | 0.52              |
| 33:BA:885:G:N2    | 33:BA:912:C:N3     | 2.57                     | 0.52              |
| 33:BA:913:A:HO2'  | 33:BA:914:A:P      | 2.32                     | 0.52              |
| 33:BA:1074:G:N3   | 33:BA:1102:A:C2    | 2.77                     | 0.52              |
| 33:BA:1116:U:O2'  | 33:BA:1117:A:H5'   | 2.10                     | 0.52              |
| 33:BA:1361:G:H3'  | 33:BA:1362:A:H5''  | 1.92                     | 0.52              |
| 33:BA:1456:A:C6   | 33:BA:1457:G:C5    | 2.98                     | 0.52              |
| 33:BA:1490:U:C5'  | 33:BA:1491:G:OP2   | 2.47                     | 0.52              |
| 33:BA:1522:U:OP1  | 43:BK:127:ARG:NH2  | 2.42                     | 0.52              |
| 34:BB:93:HIS:CE1  | 34:BB:145:ASN:HD21 | 2.28                     | 0.52              |
| 34:BB:125:PHE:CD2 | 34:BB:125:PHE:N    | 2.77                     | 0.52              |
| 35:BC:18:ASN:O    | 35:BC:55:VAL:HA    | 2.09                     | 0.52              |
| 36:BD:57:LYS:HG3  | 36:BD:58:GLN:N     | 2.24                     | 0.52              |
| 38:BF:23:GLU:C    | 38:BF:25:TYR:H     | 2.12                     | 0.52              |
| 38:BF:86:ARG:NH1  | 50:BR:63:TYR:HB2   | 2.24                     | 0.52              |
| 39:BG:87:PRO:HG2  | 39:BG:151:ALA:HB2  | 1.91                     | 0.52              |
| 44:BL:21:PRO:N    | 44:BL:94:TYR:OH    | 2.42                     | 0.52              |
| 45:BM:49:GLU:C    | 45:BM:51:GLN:H     | 2.12                     | 0.52              |
| 48:BP:6:LEU:HD23  | 48:BP:17:TYR:CD2   | 2.45                     | 0.52              |
| 51:BS:35:ARG:C    | 51:BS:37:SER:H     | 2.13                     | 0.52              |
| 3:C2:21:ARG:NH2   | 8:CB:466:A:C5'     | 2.65                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:C2:21:ARG:HE    | 3:C2:30:VAL:HG21  | 1.74                     | 0.52              |
| 7:CA:49:C:OP1     | 21:CO:101:GLY:CA  | 2.48                     | 0.52              |
| 8:CB:470:A:C6     | 8:CB:471:A:C6     | 2.97                     | 0.52              |
| 8:CB:622:G:C6     | 8:CB:623:C:C4     | 2.97                     | 0.52              |
| 8:CB:657:U:C2'    | 8:CB:658:U:H6     | 2.16                     | 0.52              |
| 8:CB:747:U:O2     | 8:CB:2014:A:H1'   | 2.09                     | 0.52              |
| 8:CB:770:G:C4     | 8:CB:771:G:C8     | 2.97                     | 0.52              |
| 8:CB:970:U:C2     | 8:CB:971:G:C8     | 2.97                     | 0.52              |
| 8:CB:978:G:O6     | 8:CB:986:C:N4     | 2.42                     | 0.52              |
| 8:CB:1375:U:C5    | 8:CB:1376:C:H5    | 2.28                     | 0.52              |
| 8:CB:1570:A:C6    | 8:CB:1571:A:C5    | 2.97                     | 0.52              |
| 8:CB:1965:C:N4    | 8:CB:1966:A:C6    | 2.77                     | 0.52              |
| 8:CB:2093:G:N2    | 8:CB:2197:U:O2    | 2.42                     | 0.52              |
| 8:CB:2137:U:C6    | 8:CB:2137:U:C3'   | 2.92                     | 0.52              |
| 8:CB:2358:A:N6    | 8:CB:2428:G:H22   | 2.07                     | 0.52              |
| 8:CB:2464:G:C4    | 8:CB:2487:G:C2    | 2.97                     | 0.52              |
| 8:CB:2589:A:C2    | 8:CB:2590:A:C8    | 2.98                     | 0.52              |
| 8:CB:2645:G:C3'   | 8:CB:2646:C:H5'   | 2.27                     | 0.52              |
| 8:CB:2646:C:N4    | 8:CB:2675:A:N1    | 2.57                     | 0.52              |
| 8:CB:2675:A:H2'   | 8:CB:2676:C:H5'   | 1.91                     | 0.52              |
| 8:CB:2829:A:C2    | 8:CB:2830:C:C2    | 2.97                     | 0.52              |
| 8:CB:2898:U:O2'   | 16:CJ:137:PRO:HB3 | 2.10                     | 0.52              |
| 11:CE:2:GLU:HG3   | 11:CE:16:GLU:CA   | 2.39                     | 0.52              |
| 13:CG:108:PHE:CZ  | 13:CG:151:ARG:HG3 | 2.33                     | 0.52              |
| 19:CM:67:VAL:HG21 | 19:CM:100:LYS:HB3 | 1.90                     | 0.52              |
| 24:CR:66:HIS:CA   | 24:CR:98:ILE:HA   | 2.28                     | 0.52              |
| 33:DA:19:A:N3     | 33:DA:572:A:H2    | 2.06                     | 0.52              |
| 33:DA:105:G:C5    | 33:DA:106:C:C4    | 2.97                     | 0.52              |
| 33:DA:159:G:H2'   | 33:DA:159:G:N3    | 2.24                     | 0.52              |
| 33:DA:199:A:H2'   | 33:DA:200:G:H8    | 1.72                     | 0.52              |
| 33:DA:307:C:H5'   | 33:DA:308:C:OP2   | 2.08                     | 0.52              |
| 33:DA:318:G:N3    | 33:DA:319:G:C8    | 2.78                     | 0.52              |
| 33:DA:354:G:C2'   | 33:DA:355:C:H5'   | 2.39                     | 0.52              |
| 33:DA:587:G:N3    | 33:DA:755:G:C2    | 2.77                     | 0.52              |
| 33:DA:623:C:N3    | 33:DA:624:C:N4    | 2.58                     | 0.52              |
| 33:DA:728:A:C8    | 47:DO:53:ARG:HD2  | 2.44                     | 0.52              |
| 33:DA:731:G:O2'   | 33:DA:732:C:H5'   | 2.10                     | 0.52              |
| 33:DA:793:U:H3'   | 33:DA:794:A:C5'   | 2.38                     | 0.52              |
| 33:DA:846:G:N3    | 33:DA:846:G:H2'   | 2.25                     | 0.52              |
| 33:DA:865:A:H2'   | 33:DA:866:C:H6    | 1.74                     | 0.52              |
| 33:DA:967:C:H3'   | 33:DA:968:A:H5''  | 1.91                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:1123:U:H2'   | 33:DA:1123:U:O2    | 2.09                     | 0.52              |
| 33:DA:1361:G:H8    | 33:DA:1361:G:H3'   | 1.73                     | 0.52              |
| 33:DA:1521:C:C5    | 33:DA:1522:U:C5    | 2.97                     | 0.52              |
| 35:DC:55:VAL:CG2   | 35:DC:66:THR:HB    | 2.39                     | 0.52              |
| 35:DC:152:VAL:N    | 35:DC:165:GLU:O    | 2.33                     | 0.52              |
| 36:DD:59:LYS:NZ    | 36:DD:194:ILE:HB   | 2.24                     | 0.52              |
| 36:DD:191:SER:O    | 36:DD:192:ALA:HB2  | 2.09                     | 0.52              |
| 37:DE:12:GLU:HG2   | 37:DE:38:VAL:CG1   | 2.39                     | 0.52              |
| 39:DG:8:GLN:CG     | 39:DG:10:LYS:H     | 2.21                     | 0.52              |
| 41:DI:114:LYS:HZ3  | 41:DI:121:ARG:HD3  | 1.75                     | 0.52              |
| 42:DJ:12:ALA:CB    | 42:DJ:18:ILE:HD12  | 2.39                     | 0.52              |
| 47:DO:14:PHE:CD2   | 47:DO:83:ARG:NH1   | 2.77                     | 0.52              |
| 47:DO:35:ILE:CD1   | 47:DO:55:LEU:HD12  | 2.39                     | 0.52              |
| 7:AA:96:G:N2       | 7:AA:97:C:H1'      | 2.23                     | 0.52              |
| 8:AB:94:A:H8       | 8:AB:94:A:O5'      | 1.91                     | 0.52              |
| 8:AB:120:U:OP2     | 55:AB:4253:HOH:O   | 2.19                     | 0.52              |
| 8:AB:189:G:OP1     | 32:AZ:24:ILE:HD12  | 2.09                     | 0.52              |
| 8:AB:200:U:C5      | 8:AB:201:C:C2      | 2.97                     | 0.52              |
| 8:AB:307:G:C2      | 8:AB:310:A:OP2     | 2.63                     | 0.52              |
| 8:AB:361:G:O2'     | 8:AB:362:A:H8      | 1.92                     | 0.52              |
| 8:AB:373:U:N3      | 8:AB:374:A:N7      | 2.57                     | 0.52              |
| 8:AB:424:G:C2      | 8:AB:425:G:C8      | 2.98                     | 0.52              |
| 8:AB:494:G:OP1     | 25:AS:8:ARG:HG3    | 2.09                     | 0.52              |
| 8:AB:514:A:H2'     | 8:AB:515:A:O4'     | 2.09                     | 0.52              |
| 8:AB:518:G:H5''    | 8:AB:518:G:C8      | 2.44                     | 0.52              |
| 8:AB:687:C:C4      | 8:AB:688:U:O2      | 2.61                     | 0.52              |
| 8:AB:969:G:H21     | 8:AB:985:C:P       | 2.32                     | 0.52              |
| 8:AB:998:C:C5      | 55:AB:4421:HOH:O   | 2.61                     | 0.52              |
| 8:AB:1205:A:N7     | 11:AE:164:LEU:HD22 | 2.24                     | 0.52              |
| 8:AB:1375:U:C4     | 8:AB:1376:C:C5     | 2.97                     | 0.52              |
| 8:AB:1566:A:C5     | 9:AC:213:ARG:NH1   | 2.77                     | 0.52              |
| 8:AB:1651:G:C6     | 8:AB:1652:A:C6     | 2.98                     | 0.52              |
| 8:AB:2065:C:C6     | 8:AB:2066:C:H5     | 2.27                     | 0.52              |
| 8:AB:2086:U:O2     | 8:AB:2234:G:C5     | 2.62                     | 0.52              |
| 8:AB:2138:G:H1     | 8:AB:2153:C:N4     | 2.07                     | 0.52              |
| 8:AB:2673:G:H2'    | 8:AB:2674:G:H5'    | 1.92                     | 0.52              |
| 8:AB:2724:U:H6     | 8:AB:2724:U:H5''   | 1.75                     | 0.52              |
| 8:AB:2869:G:H2'    | 8:AB:2870:C:O4'    | 2.09                     | 0.52              |
| 10:AD:14:ILE:O     | 10:AD:15:PHE:HB2   | 2.09                     | 0.52              |
| 10:AD:185:ASN:O    | 10:AD:186:LEU:HD12 | 2.09                     | 0.52              |
| 11:AE:113:VAL:HG13 | 11:AE:114:ARG:HG2  | 1.92                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 18:AL:70:LYS:CD   | 18:AL:71:ALA:N    | 2.72                     | 0.52              |
| 18:AL:88:GLY:O    | 18:AL:90:VAL:HG23 | 2.09                     | 0.52              |
| 24:AR:1:MET:C     | 24:AR:2:TYR:CD1   | 2.83                     | 0.52              |
| 25:AS:20:VAL:HG21 | 25:AS:44:ALA:HA   | 1.91                     | 0.52              |
| 29:AW:36:ILE:CG2  | 29:AW:68:PHE:HD1  | 2.20                     | 0.52              |
| 32:AZ:12:ILE:HD12 | 32:AZ:13:THR:CA   | 2.40                     | 0.52              |
| 32:AZ:63:ARG:C    | 32:AZ:65:ASN:H    | 2.13                     | 0.52              |
| 33:BA:48:C:H2'    | 33:BA:48:C:O2     | 2.09                     | 0.52              |
| 33:BA:122:G:H5''  | 33:BA:122:G:C8    | 2.45                     | 0.52              |
| 33:BA:196:A:O2'   | 33:BA:221:C:O2'   | 2.27                     | 0.52              |
| 33:BA:373:A:C4    | 33:BA:482:A:N7    | 2.77                     | 0.52              |
| 33:BA:624:C:N3    | 33:BA:625:U:C5    | 2.78                     | 0.52              |
| 33:BA:764:C:O2    | 33:BA:764:C:H2'   | 2.08                     | 0.52              |
| 33:BA:778:G:N7    | 33:BA:779:C:C5    | 2.78                     | 0.52              |
| 33:BA:881:G:C6    | 33:BA:882:C:N3    | 2.78                     | 0.52              |
| 33:BA:964:A:N3    | 33:BA:969:A:H1'   | 2.24                     | 0.52              |
| 33:BA:998:C:O5'   | 33:BA:998:C:H6    | 1.92                     | 0.52              |
| 33:BA:1051:C:H2'  | 33:BA:1052:U:C6   | 2.43                     | 0.52              |
| 33:BA:1392:G:C6   | 33:BA:1393:U:O4   | 2.63                     | 0.52              |
| 34:BB:222:GLU:HG3 | 34:BB:222:GLU:O   | 2.09                     | 0.52              |
| 36:BD:61:ARG:NH1  | 36:BD:62:ARG:HH21 | 2.08                     | 0.52              |
| 40:BH:17:GLN:HG2  | 40:BH:62:LEU:HD23 | 1.92                     | 0.52              |
| 42:BJ:46:LYS:HG3  | 42:BJ:68:ARG:HG2  | 1.91                     | 0.52              |
| 43:BK:23:HIS:HB3  | 43:BK:30:ILE:CD1  | 2.39                     | 0.52              |
| 53:BU:37:TYR:HE1  | 53:BU:39:LYS:HZ2  | 1.56                     | 0.52              |
| 8:CB:33:C:O5'     | 8:CB:33:C:H2'     | 2.09                     | 0.52              |
| 8:CB:215:G:O3'    | 8:CB:216:A:H4'    | 2.10                     | 0.52              |
| 8:CB:226:A:C2'    | 8:CB:227:A:H5'    | 2.40                     | 0.52              |
| 8:CB:588:U:OP1    | 18:CL:29:LYS:HG3  | 2.09                     | 0.52              |
| 8:CB:592:A:C5     | 8:CB:593:U:C5     | 2.97                     | 0.52              |
| 8:CB:1054:A:H2'   | 8:CB:1055:G:C1'   | 2.40                     | 0.52              |
| 8:CB:1275:A:C2    | 8:CB:1645:G:N2    | 2.77                     | 0.52              |
| 8:CB:1854:A:C2'   | 8:CB:1855:U:H5'   | 2.40                     | 0.52              |
| 8:CB:1889:A:O5'   | 8:CB:1889:A:H8    | 1.93                     | 0.52              |
| 8:CB:1912:A:C2    | 33:DA:1407:C:H2'  | 2.44                     | 0.52              |
| 8:CB:1930:G:H2'   | 8:CB:1968:G:O6    | 2.09                     | 0.52              |
| 8:CB:1947:C:C2    | 8:CB:1960:A:H2    | 2.28                     | 0.52              |
| 8:CB:2060:A:C2    | 8:CB:2502:G:C4    | 2.97                     | 0.52              |
| 8:CB:2360:G:C5'   | 18:CL:58:TYR:HE1  | 2.22                     | 0.52              |
| 8:CB:2588:G:C2'   | 8:CB:2589:A:H5'   | 2.40                     | 0.52              |
| 8:CB:2722:G:O2'   | 8:CB:2723:C:H5'   | 2.10                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2823:A:O5'    | 8:CB:2823:A:H8     | 1.92                     | 0.52              |
| 9:CC:30:ALA:O      | 9:CC:32:LEU:N      | 2.39                     | 0.52              |
| 10:CD:77:ARG:NH1   | 10:CD:77:ARG:CB    | 2.67                     | 0.52              |
| 10:CD:122:VAL:HA   | 10:CD:128:ARG:HE   | 1.70                     | 0.52              |
| 13:CG:125:PRO:HD3  | 13:CG:131:VAL:HG12 | 1.92                     | 0.52              |
| 13:CG:163:TYR:CD2  | 13:CG:166:GLU:HG3  | 2.45                     | 0.52              |
| 16:CJ:44:TYR:OH    | 16:CJ:50:THR:O     | 2.25                     | 0.52              |
| 17:CK:80:ASP:N     | 17:CK:80:ASP:OD1   | 2.42                     | 0.52              |
| 18:CL:110:VAL:HG23 | 18:CL:126:ARG:NH1  | 2.24                     | 0.52              |
| 23:CQ:44:TYR:CE1   | 23:CQ:51:GLN:NE2   | 2.78                     | 0.52              |
| 23:CQ:64:ILE:CG1   | 23:CQ:95:ALA:CB    | 2.85                     | 0.52              |
| 24:CR:66:HIS:HA    | 24:CR:98:ILE:CA    | 2.28                     | 0.52              |
| 25:CS:110:ARG:HD2  | 25:CS:110:ARG:N    | 2.24                     | 0.52              |
| 27:CU:3:LYS:O      | 27:CU:4:ILE:CG1    | 2.56                     | 0.52              |
| 28:CV:24:ASN:HB3   | 28:CV:44:HIS:CB    | 2.38                     | 0.52              |
| 28:CV:82:TYR:O     | 28:CV:82:TYR:CG    | 2.61                     | 0.52              |
| 32:CZ:5:ILE:O      | 32:CZ:6:HIS:C      | 2.48                     | 0.52              |
| 33:DA:120:A:C6     | 33:DA:122:G:C2     | 2.97                     | 0.52              |
| 33:DA:542:G:C2     | 33:DA:543:U:C4     | 2.98                     | 0.52              |
| 33:DA:548:G:H2'    | 33:DA:549:C:C6     | 2.40                     | 0.52              |
| 33:DA:668:G:C2'    | 33:DA:669:G:H5''   | 2.38                     | 0.52              |
| 33:DA:885:G:C2     | 33:DA:886:G:N7     | 2.77                     | 0.52              |
| 33:DA:907:A:C6     | 33:DA:908:A:N7     | 2.77                     | 0.52              |
| 33:DA:1175:G:O6    | 33:DA:1176:A:C6    | 2.63                     | 0.52              |
| 33:DA:1204:A:C5    | 33:DA:1205:U:C4    | 2.97                     | 0.52              |
| 35:DC:105:VAL:O    | 35:DC:107:LYS:N    | 2.37                     | 0.52              |
| 36:DD:139:ASN:OD1  | 36:DD:139:ASN:C    | 2.46                     | 0.52              |
| 36:DD:198:LEU:HD23 | 36:DD:199:ILE:HG22 | 1.90                     | 0.52              |
| 39:DG:96:ASN:N     | 39:DG:96:ASN:HD22  | 2.07                     | 0.52              |
| 42:DJ:30:LYS:HA    | 42:DJ:36:VAL:HG21  | 1.90                     | 0.52              |
| 44:DL:74:GLN:O     | 44:DL:75:GLU:C     | 2.47                     | 0.52              |
| 7:AA:46:A:C8       | 7:AA:47:C:C5       | 2.98                     | 0.52              |
| 8:AB:97:C:C6       | 8:AB:97:C:C3'      | 2.92                     | 0.52              |
| 8:AB:186:G:C2      | 8:AB:211:C:C2      | 2.97                     | 0.52              |
| 8:AB:310:A:O2'     | 8:AB:311:A:H5''    | 2.09                     | 0.52              |
| 8:AB:368:A:C6      | 8:AB:369:U:C4      | 2.97                     | 0.52              |
| 8:AB:490:C:H4'     | 8:AB:491:G:OP2     | 2.09                     | 0.52              |
| 8:AB:545:U:H3'     | 8:AB:545:U:C6      | 2.41                     | 0.52              |
| 8:AB:672:C:OP1     | 8:AB:801:G:N2      | 2.42                     | 0.52              |
| 8:AB:684:G:N1      | 8:AB:774:G:C2      | 2.78                     | 0.52              |
| 8:AB:778:G:C4      | 8:AB:779:U:C6      | 2.97                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:871:U:C2     | 8:AB:907:G:C6     | 2.96                     | 0.52              |
| 8:AB:964:C:O2'    | 8:AB:2273:A:H1'   | 2.10                     | 0.52              |
| 8:AB:1011:G:O6    | 8:AB:1151:A:C6    | 2.62                     | 0.52              |
| 8:AB:1315:C:H2'   | 8:AB:1316:U:H6    | 1.75                     | 0.52              |
| 8:AB:1323:C:OP1   | 25:AS:84:ARG:NH1  | 2.40                     | 0.52              |
| 8:AB:1336:A:C2    | 8:AB:1337:G:C4    | 2.97                     | 0.52              |
| 8:AB:1350:C:C6    | 8:AB:1351:C:H5    | 2.27                     | 0.52              |
| 8:AB:1591:A:C6    | 8:AB:1592:C:N4    | 2.77                     | 0.52              |
| 8:AB:1661:G:O2'   | 8:AB:1662:U:H5'   | 2.10                     | 0.52              |
| 8:AB:1797:G:C2    | 8:AB:1823:G:C4    | 2.98                     | 0.52              |
| 8:AB:1848:A:C4    | 8:AB:1849:G:N7    | 2.77                     | 0.52              |
| 8:AB:1942:C:C5    | 8:AB:1943:U:C5    | 2.97                     | 0.52              |
| 8:AB:2027:G:C2    | 8:AB:2028:U:C2    | 2.98                     | 0.52              |
| 8:AB:2134:A:H61   | 8:AB:2157:G:N2    | 2.07                     | 0.52              |
| 8:AB:2221:G:C6    | 8:AB:2222:C:C4    | 2.97                     | 0.52              |
| 8:AB:2223:G:C2'   | 8:AB:2224:G:H5'   | 2.39                     | 0.52              |
| 8:AB:2345:G:N3    | 8:AB:2381:A:C4    | 2.77                     | 0.52              |
| 8:AB:2503:A:N3    | 8:AB:2503:A:H2'   | 2.24                     | 0.52              |
| 8:AB:2519:U:OP1   | 8:AB:2519:U:H3'   | 2.10                     | 0.52              |
| 8:AB:2561:U:H4'   | 17:AK:22:ILE:HD11 | 1.91                     | 0.52              |
| 10:AD:83:ARG:HH11 | 10:AD:84:LEU:HA   | 1.75                     | 0.52              |
| 10:AD:131:ASP:O   | 10:AD:139:SER:HA  | 2.09                     | 0.52              |
| 16:AJ:112:GLY:HA2 | 16:AJ:116:ARG:NH2 | 2.24                     | 0.52              |
| 17:AK:88:ASN:OD1  | 17:AK:91:SER:HB2  | 2.08                     | 0.52              |
| 18:AL:28:GLY:O    | 18:AL:29:LYS:HB2  | 2.09                     | 0.52              |
| 19:AM:9:PHE:HE1   | 19:AM:11:LYS:HZ1  | 1.57                     | 0.52              |
| 24:AR:90:ARG:NH2  | 24:AR:92:TRP:HB3  | 2.24                     | 0.52              |
| 27:AU:10:VAL:HG22 | 27:AU:22:GLY:O    | 2.08                     | 0.52              |
| 30:AX:7:ARG:HA    | 30:AX:7:ARG:NH1   | 2.24                     | 0.52              |
| 30:AX:18:LEU:HD22 | 30:AX:18:LEU:C    | 2.30                     | 0.52              |
| 33:BA:174:A:C2'   | 33:BA:175:C:H5'   | 2.40                     | 0.52              |
| 33:BA:189:A:H5''  | 33:BA:189:A:C8    | 2.45                     | 0.52              |
| 33:BA:327:A:C6    | 33:BA:329:A:C5    | 2.97                     | 0.52              |
| 33:BA:515:G:O5'   | 33:BA:515:G:H8    | 1.92                     | 0.52              |
| 33:BA:796:C:O5'   | 33:BA:796:C:H6    | 1.91                     | 0.52              |
| 33:BA:838:G:C6    | 33:BA:849:G:C6    | 2.98                     | 0.52              |
| 33:BA:1115:U:H2'  | 33:BA:1116:U:C6   | 2.45                     | 0.52              |
| 33:BA:1219:A:O2'  | 33:BA:1220:G:H5'  | 2.10                     | 0.52              |
| 33:BA:1284:C:H6   | 33:BA:1284:C:O5'  | 1.93                     | 0.52              |
| 33:BA:1308:U:H5'' | 45:BM:96:VAL:HG22 | 1.91                     | 0.52              |
| 33:BA:1378:C:H5'  | 33:BA:1379:G:C8   | 2.45                     | 0.52              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 37:BE:151:MET:CA | 37:BE:155:LYS:HB2 | 2.39                     | 0.52              |
| 39:BG:77:ARG:HB3 | 39:BG:84:TYR:HB3  | 1.90                     | 0.52              |
| 44:BL:121:PRO:C  | 44:BL:123:ALA:H   | 2.12                     | 0.52              |
| 50:BR:28:LEU:HA  | 50:BR:31:TYR:HD1  | 1.75                     | 0.52              |
| 5:C4:5:ALA:HB2   | 8:CB:2465:C:H4'   | 1.92                     | 0.52              |
| 7:CA:12:C:H41    | 29:CW:50:VAL:CG1  | 2.22                     | 0.52              |
| 8:CB:19:A:C4     | 8:CB:20:C:C5      | 2.98                     | 0.52              |
| 8:CB:68:G:N2     | 8:CB:74:A:O5'     | 2.43                     | 0.52              |
| 8:CB:79:C:C2'    | 8:CB:346:A:H8     | 2.23                     | 0.52              |
| 8:CB:131:A:H5''  | 8:CB:131:A:C8     | 2.45                     | 0.52              |
| 8:CB:197:A:H62   | 8:CB:2430:A:H2'   | 1.74                     | 0.52              |
| 8:CB:470:A:C2    | 8:CB:471:A:C4     | 2.98                     | 0.52              |
| 8:CB:579:G:N2    | 8:CB:1262:A:C4    | 2.78                     | 0.52              |
| 8:CB:631:A:O2'   | 18:CL:66:PHE:HB3  | 2.10                     | 0.52              |
| 8:CB:644:A:N6    | 8:CB:2369:A:H1'   | 2.24                     | 0.52              |
| 8:CB:834:G:C2    | 8:CB:835:C:C2     | 2.97                     | 0.52              |
| 8:CB:973:A:C8    | 8:CB:1188:U:N3    | 2.78                     | 0.52              |
| 8:CB:987:C:O2'   | 8:CB:1000:A:N3    | 2.40                     | 0.52              |
| 8:CB:1008:A:H4'  | 8:CB:1009:A:OP1   | 2.09                     | 0.52              |
| 8:CB:1213:A:C5   | 8:CB:1214:A:N7    | 2.77                     | 0.52              |
| 8:CB:1503:A:C5   | 8:CB:1504:A:C8    | 2.97                     | 0.52              |
| 8:CB:1557:C:H5   | 8:CB:1558:C:H2'   | 1.75                     | 0.52              |
| 8:CB:1797:G:C2   | 8:CB:1823:G:C4    | 2.97                     | 0.52              |
| 8:CB:1808:A:H3'  | 8:CB:1809:A:C8    | 2.40                     | 0.52              |
| 8:CB:1831:G:C4   | 8:CB:1832:C:C5    | 2.97                     | 0.52              |
| 8:CB:1967:C:C2'  | 8:CB:1968:G:H5'   | 2.34                     | 0.52              |
| 8:CB:2010:G:O2'  | 8:CB:2011:U:H5'   | 2.09                     | 0.52              |
| 8:CB:2016:U:C2   | 8:CB:2017:U:C6    | 2.97                     | 0.52              |
| 8:CB:2051:A:C2   | 8:CB:2614:A:C6    | 2.98                     | 0.52              |
| 8:CB:2082:A:C6   | 8:CB:2239:G:C4    | 2.97                     | 0.52              |
| 8:CB:2097:A:C6   | 8:CB:2098:U:C4    | 2.97                     | 0.52              |
| 8:CB:2289:G:C6   | 8:CB:2290:G:N7    | 2.78                     | 0.52              |
| 8:CB:2358:A:O2'  | 8:CB:2359:C:H5'   | 2.09                     | 0.52              |
| 8:CB:2407:A:C6   | 8:CB:2408:U:O4    | 2.62                     | 0.52              |
| 8:CB:2584:U:C6   | 8:CB:2584:U:C3'   | 2.92                     | 0.52              |
| 8:CB:2631:G:C6   | 8:CB:2632:A:C8    | 2.98                     | 0.52              |
| 8:CB:2636:C:OP1  | 10:CD:79:LEU:HD12 | 2.10                     | 0.52              |
| 8:CB:2741:A:H2'  | 8:CB:2742:G:C8    | 2.45                     | 0.52              |
| 9:CC:32:LEU:HD23 | 9:CC:61:TYR:CE1   | 2.45                     | 0.52              |
| 10:CD:174:SER:O  | 10:CD:175:LEU:CB  | 2.58                     | 0.52              |
| 11:CE:1:MET:HA   | 11:CE:18:THR:HG21 | 1.92                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:CE:66:GLY:O    | 11:CE:67:ARG:C    | 2.46                     | 0.52              |
| 11:CE:123:LYS:CE  | 11:CE:157:LEU:HG  | 2.39                     | 0.52              |
| 20:CN:10:LEU:CB   | 20:CN:17:ARG:HH22 | 2.21                     | 0.52              |
| 22:CP:26:GLU:HG2  | 22:CP:47:ILE:O    | 2.10                     | 0.52              |
| 24:CR:20:VAL:HG13 | 24:CR:97:LYS:HA   | 1.91                     | 0.52              |
| 29:CW:64:GLY:O    | 29:CW:65:LYS:HB3  | 2.09                     | 0.52              |
| 32:CZ:3:LYS:HZ1   | 32:CZ:29:GLY:HA3  | 1.75                     | 0.52              |
| 33:DA:65:A:C2     | 33:DA:382:A:C5    | 2.98                     | 0.52              |
| 33:DA:402:G:H4'   | 33:DA:620:C:C2    | 2.45                     | 0.52              |
| 33:DA:587:G:C4    | 33:DA:755:G:N2    | 2.78                     | 0.52              |
| 33:DA:666:G:C6    | 33:DA:741:G:C5    | 2.97                     | 0.52              |
| 33:DA:792:A:C2    | 33:DA:794:A:C4    | 2.97                     | 0.52              |
| 33:DA:805:C:C2    | 33:DA:806:C:H5    | 2.27                     | 0.52              |
| 33:DA:895:G:C6    | 33:DA:896:C:C4    | 2.96                     | 0.52              |
| 33:DA:1119:C:N3   | 33:DA:1120:C:H5   | 2.07                     | 0.52              |
| 33:DA:1302:C:O5'  | 33:DA:1302:C:H6   | 1.91                     | 0.52              |
| 33:DA:1361:G:H3'  | 33:DA:1361:G:C8   | 2.44                     | 0.52              |
| 36:DD:84:ASN:N    | 36:DD:88:ASN:HD21 | 2.07                     | 0.52              |
| 38:DF:29:ILE:HG21 | 38:DF:64:VAL:HG11 | 1.91                     | 0.52              |
| 39:DG:42:VAL:O    | 39:DG:46:LEU:CB   | 2.57                     | 0.52              |
| 40:DH:5:PRO:C     | 40:DH:6:ILE:HD12  | 2.30                     | 0.52              |
| 44:DL:80:LEU:HD23 | 44:DL:97:VAL:HG11 | 1.91                     | 0.52              |
| 46:DN:9:GLU:HB2   | 46:DN:62:ARG:HH12 | 1.74                     | 0.52              |
| 46:DN:79:SER:O    | 46:DN:83:VAL:HB   | 2.09                     | 0.52              |
| 49:DQ:10:ARG:O    | 49:DQ:22:VAL:HA   | 2.09                     | 0.52              |
| 50:DR:57:ALA:O    | 50:DR:58:ILE:C    | 2.48                     | 0.52              |
| 51:DS:35:ARG:C    | 51:DS:37:SER:H    | 2.12                     | 0.52              |
| 7:AA:39:A:C4      | 7:AA:44:G:N2      | 2.78                     | 0.52              |
| 8:AB:196:A:H62    | 18:AL:50:PHE:HZ   | 1.56                     | 0.52              |
| 8:AB:313:G:H5'    | 8:AB:313:G:C8     | 2.44                     | 0.52              |
| 8:AB:422:A:C2     | 8:AB:423:A:C4     | 2.97                     | 0.52              |
| 8:AB:442:G:C4     | 8:AB:444:C:H5     | 2.28                     | 0.52              |
| 8:AB:538:A:H2'    | 8:AB:539:G:O4'    | 2.10                     | 0.52              |
| 8:AB:563:A:C2     | 8:AB:2018:G:N3    | 2.77                     | 0.52              |
| 8:AB:572:A:N7     | 8:AB:573:U:C5     | 2.78                     | 0.52              |
| 8:AB:600:G:C5     | 8:AB:601:C:C4     | 2.97                     | 0.52              |
| 8:AB:607:U:H2'    | 8:AB:608:A:H5'    | 1.92                     | 0.52              |
| 8:AB:930:G:H5''   | 8:AB:931:U:P      | 2.50                     | 0.52              |
| 8:AB:1139:G:H8    | 8:AB:1139:G:C5'   | 2.21                     | 0.52              |
| 8:AB:1191:G:O2'   | 8:AB:1192:G:H5'   | 2.09                     | 0.52              |
| 8:AB:1193:G:N1    | 8:AB:1194:A:C4    | 2.78                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1258:U:C2'    | 8:AB:1259:G:C8     | 2.82                     | 0.52              |
| 8:AB:1476:U:O2'    | 8:AB:1477:A:H5'    | 2.10                     | 0.52              |
| 8:AB:1519:G:C5     | 8:AB:1520:U:C5     | 2.98                     | 0.52              |
| 8:AB:1661:G:C4     | 8:AB:1662:U:C6     | 2.98                     | 0.52              |
| 8:AB:1712:U:H2'    | 8:AB:1713:A:N7     | 2.23                     | 0.52              |
| 8:AB:1864:U:C2'    | 8:AB:1865:U:H5'    | 2.40                     | 0.52              |
| 8:AB:2020:A:C2     | 8:AB:2035:G:N1     | 2.78                     | 0.52              |
| 8:AB:2094:A:C8     | 8:AB:2094:A:H3'    | 2.44                     | 0.52              |
| 8:AB:2443:C:H2'    | 8:AB:2444:G:H8     | 1.74                     | 0.52              |
| 8:AB:2695:U:C6     | 8:AB:2695:U:C3'    | 2.93                     | 0.52              |
| 9:AC:24:HIS:HB3    | 9:AC:27:LYS:NZ     | 2.24                     | 0.52              |
| 9:AC:96:LYS:HE2    | 9:AC:96:LYS:HA     | 1.90                     | 0.52              |
| 11:AE:66:GLY:O     | 11:AE:67:ARG:C     | 2.46                     | 0.52              |
| 12:AF:169:LEU:HD12 | 12:AF:176:PHE:HE2  | 1.74                     | 0.52              |
| 15:AI:49:GLU:HG3   | 15:AI:54:ILE:HD11  | 1.91                     | 0.52              |
| 15:AI:96:LYS:NZ    | 15:AI:138:VAL:HG21 | 2.24                     | 0.52              |
| 18:AL:70:LYS:HG3   | 18:AL:71:ALA:N     | 2.24                     | 0.52              |
| 20:AN:55:ALA:O     | 20:AN:57:THR:N     | 2.42                     | 0.52              |
| 33:BA:19:A:N3      | 33:BA:572:A:C2     | 2.76                     | 0.52              |
| 33:BA:158:G:C4     | 33:BA:159:G:C8     | 2.98                     | 0.52              |
| 33:BA:219:U:N3     | 33:BA:220:G:C8     | 2.77                     | 0.52              |
| 33:BA:407:U:N3     | 33:BA:408:A:C8     | 2.78                     | 0.52              |
| 33:BA:518:C:O2     | 33:BA:529:G:N1     | 2.42                     | 0.52              |
| 33:BA:554:A:C2     | 33:BA:555:U:C4     | 2.97                     | 0.52              |
| 33:BA:794:A:C4     | 33:BA:795:C:C5     | 2.97                     | 0.52              |
| 33:BA:986:U:O2'    | 51:BS:54:ARG:HA    | 2.09                     | 0.52              |
| 33:BA:1137:C:O2    | 33:BA:1138:G:N2    | 2.42                     | 0.52              |
| 33:BA:1258:G:C8    | 33:BA:1258:G:O5'   | 2.63                     | 0.52              |
| 33:BA:1455:G:C6    | 33:BA:1456:A:N7    | 2.78                     | 0.52              |
| 34:BB:20:ARG:HD2   | 34:BB:38:HIS:NE2   | 2.25                     | 0.52              |
| 37:BE:150:GLU:O    | 37:BE:151:MET:C    | 2.47                     | 0.52              |
| 38:BF:53:LYS:HD3   | 38:BF:53:LYS:C     | 2.30                     | 0.52              |
| 38:BF:74:LEU:O     | 38:BF:78:PHE:CD1   | 2.62                     | 0.52              |
| 43:BK:73:VAL:HG12  | 43:BK:73:VAL:O     | 2.09                     | 0.52              |
| 45:BM:13:HIS:HB2   | 45:BM:16:ILE:HG22  | 1.90                     | 0.52              |
| 52:BT:69:ASN:H     | 52:BT:69:ASN:HD22  | 1.57                     | 0.52              |
| 1:C0:21:LEU:HD13   | 25:CS:23:LEU:HD23  | 1.90                     | 0.52              |
| 7:CA:47:C:OP2      | 7:CA:47:C:H3'      | 2.09                     | 0.52              |
| 8:CB:117:G:C6      | 8:CB:119:A:C6      | 2.98                     | 0.52              |
| 8:CB:223:A:N7      | 8:CB:422:A:C8      | 2.77                     | 0.52              |
| 8:CB:466:A:C2      | 8:CB:796:C:O4'     | 2.62                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:531:C:OP1    | 8:CB:531:C:H4'     | 2.10                     | 0.52              |
| 8:CB:569:U:H2'    | 8:CB:570:G:O4'     | 2.09                     | 0.52              |
| 8:CB:749:A:C6     | 8:CB:1618:A:N1     | 2.76                     | 0.52              |
| 8:CB:1254:A:H5''  | 8:CB:1255:U:H5''   | 1.92                     | 0.52              |
| 8:CB:1437:C:O2'   | 8:CB:1516:G:H4'    | 2.10                     | 0.52              |
| 8:CB:1570:A:N6    | 8:CB:1571:A:C6     | 2.78                     | 0.52              |
| 8:CB:1817:G:OP1   | 9:CC:62:ARG:NH2    | 2.40                     | 0.52              |
| 8:CB:1824:G:OP1   | 9:CC:52:HIS:NE2    | 2.42                     | 0.52              |
| 8:CB:1854:A:N6    | 8:CB:1888:G:H1'    | 2.25                     | 0.52              |
| 8:CB:1863:G:H2'   | 8:CB:1864:U:O4'    | 2.09                     | 0.52              |
| 8:CB:1930:G:H2'   | 8:CB:1968:G:C6     | 2.44                     | 0.52              |
| 8:CB:2031:A:N1    | 8:CB:2498:C:C1'    | 2.73                     | 0.52              |
| 8:CB:2053:G:H2'   | 8:CB:2054:A:O4'    | 2.09                     | 0.52              |
| 8:CB:2265:U:C5    | 8:CB:2266:A:C6     | 2.98                     | 0.52              |
| 8:CB:2727:A:C6    | 8:CB:2728:U:C4     | 2.97                     | 0.52              |
| 8:CB:2738:A:C8    | 8:CB:2738:A:H3'    | 2.45                     | 0.52              |
| 8:CB:2750:A:H4'   | 8:CB:2751:G:OP1    | 2.04                     | 0.52              |
| 9:CC:53:ILE:HG23  | 9:CC:218:THR:H     | 1.75                     | 0.52              |
| 10:CD:152:PRO:O   | 10:CD:153:GLY:C    | 2.47                     | 0.52              |
| 11:CE:79:ARG:O    | 11:CE:80:SER:CB    | 2.58                     | 0.52              |
| 12:CF:71:LYS:HG2  | 12:CF:72:SER:N     | 2.24                     | 0.52              |
| 13:CG:87:GLN:O    | 13:CG:161:VAL:HG23 | 2.09                     | 0.52              |
| 13:CG:93:TYR:HD1  | 13:CG:93:TYR:N     | 2.08                     | 0.52              |
| 18:CL:98:ALA:HB3  | 18:CL:101:ILE:CG1  | 2.40                     | 0.52              |
| 18:CL:142:ILE:O   | 18:CL:142:ILE:HG13 | 2.09                     | 0.52              |
| 19:CM:40:ARG:NH2  | 19:CM:92:TRP:CH2   | 2.77                     | 0.52              |
| 20:CN:83:LEU:HD11 | 20:CN:115:LEU:HD12 | 1.90                     | 0.52              |
| 20:CN:87:PHE:C    | 20:CN:89:SER:H     | 2.12                     | 0.52              |
| 20:CN:121:LYS:HD2 | 20:CN:122:ALA:N    | 2.25                     | 0.52              |
| 21:CO:41:ALA:H    | 21:CO:46:GLU:CG    | 2.22                     | 0.52              |
| 22:CP:26:GLU:HA   | 22:CP:47:ILE:CA    | 2.39                     | 0.52              |
| 29:CW:10:ARG:HH11 | 29:CW:10:ARG:CA    | 2.20                     | 0.52              |
| 33:DA:48:C:O2     | 33:DA:48:C:C2'     | 2.56                     | 0.52              |
| 33:DA:128:G:N2    | 33:DA:129:A:N3     | 2.57                     | 0.52              |
| 33:DA:382:A:C2    | 33:DA:383:A:C8     | 2.97                     | 0.52              |
| 33:DA:499:A:H2    | 33:DA:500:G:C2     | 2.28                     | 0.52              |
| 33:DA:566:G:C8    | 33:DA:566:G:C5'    | 2.88                     | 0.52              |
| 33:DA:669:G:C8    | 33:DA:669:G:C5'    | 2.87                     | 0.52              |
| 33:DA:735:C:N4    | 33:DA:736:C:N4     | 2.57                     | 0.52              |
| 33:DA:775:G:H2'   | 33:DA:776:G:O4'    | 2.09                     | 0.52              |
| 33:DA:795:C:O2'   | 43:DK:128:VAL:HG13 | 2.09                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:824:G:H1    | 33:DA:876:C:H42   | 1.58                     | 0.52              |
| 33:DA:918:A:N6    | 33:DA:919:A:N6    | 2.57                     | 0.52              |
| 33:DA:1242:G:N1   | 33:DA:1296:C:C5   | 2.78                     | 0.52              |
| 33:DA:1306:A:C5   | 33:DA:1307:U:C5   | 2.98                     | 0.52              |
| 33:DA:1429:A:C2   | 33:DA:1472:U:O2   | 2.63                     | 0.52              |
| 33:DA:1473:G:H2'  | 33:DA:1474:U:O4'  | 2.09                     | 0.52              |
| 33:DA:1504:G:H4'  | 33:DA:1505:G:O4'  | 2.09                     | 0.52              |
| 33:DA:1508:A:N3   | 33:DA:1509:C:C6   | 2.77                     | 0.52              |
| 34:DB:45:THR:HG22 | 34:DB:49:PHE:CZ   | 2.45                     | 0.52              |
| 34:DB:103:TRP:HA  | 34:DB:106:VAL:HB  | 1.90                     | 0.52              |
| 35:DC:21:TRP:CD1  | 35:DC:58:ARG:CG   | 2.93                     | 0.52              |
| 36:DD:3:TYR:O     | 36:DD:4:LEU:CB    | 2.56                     | 0.52              |
| 37:DE:21:SER:OG   | 37:DE:28:ARG:HB2  | 2.09                     | 0.52              |
| 41:DI:79:ARG:HD3  | 41:DI:102:PHE:CD2 | 2.45                     | 0.52              |
| 41:DI:90:ASP:C    | 41:DI:92:SER:N    | 2.63                     | 0.52              |
| 46:DN:4:SER:O     | 46:DN:8:ARG:HB2   | 2.09                     | 0.52              |
| 46:DN:30:ILE:CG2  | 46:DN:44:VAL:HB   | 2.40                     | 0.52              |
| 47:DO:14:PHE:CE2  | 47:DO:83:ARG:CZ   | 2.93                     | 0.52              |
| 50:DR:56:ARG:O    | 50:DR:60:ARG:HD2  | 2.09                     | 0.52              |
| 51:DS:32:THR:HG22 | 51:DS:33:TRP:N    | 2.25                     | 0.52              |
| 51:DS:55:GLN:HA   | 51:DS:55:GLN:HE21 | 1.75                     | 0.52              |
| 4:A3:30:HIS:CE1   | 8:AB:2418:A:N7    | 2.76                     | 0.52              |
| 4:A3:39:ARG:CZ    | 8:AB:2363:G:OP2   | 2.57                     | 0.52              |
| 5:A4:3:VAL:CG2    | 5:A4:35:GLN:HG2   | 2.36                     | 0.52              |
| 8:AB:408:G:H3'    | 8:AB:408:G:C8     | 2.44                     | 0.52              |
| 8:AB:534:U:O2'    | 23:AQ:48:ASP:HB2  | 2.09                     | 0.52              |
| 8:AB:553:G:C8     | 8:AB:553:G:H3'    | 2.44                     | 0.52              |
| 8:AB:670:A:H8     | 8:AB:670:A:O5'    | 1.93                     | 0.52              |
| 8:AB:672:C:O2     | 8:AB:672:C:H2'    | 2.09                     | 0.52              |
| 8:AB:824:U:O4     | 8:AB:833:A:N1     | 2.43                     | 0.52              |
| 8:AB:843:G:O6     | 8:AB:844:A:C6     | 2.62                     | 0.52              |
| 8:AB:1080:A:C6    | 8:AB:1081:U:C4    | 2.97                     | 0.52              |
| 8:AB:1119:U:OP1   | 28:AV:83:LYS:HE2  | 2.09                     | 0.52              |
| 8:AB:1264:A:H8    | 8:AB:1264:A:C5'   | 2.22                     | 0.52              |
| 8:AB:1361:G:H2'   | 8:AB:1362:C:C6    | 2.45                     | 0.52              |
| 8:AB:1670:C:H5''  | 8:AB:1671:U:OP2   | 2.09                     | 0.52              |
| 8:AB:1694:C:H6    | 8:AB:1694:C:C5'   | 2.22                     | 0.52              |
| 8:AB:1746:A:H2'   | 8:AB:1746:A:N3    | 2.24                     | 0.52              |
| 8:AB:1836:C:H2'   | 8:AB:1837:C:H5'   | 1.92                     | 0.52              |
| 8:AB:1900:A:C2    | 8:AB:1970:A:C5    | 2.98                     | 0.52              |
| 8:AB:2025:C:H3'   | 8:AB:2026:U:H6    | 1.75                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2188:U:C4    | 8:AB:2189:U:C4    | 2.98                     | 0.52              |
| 8:AB:2469:A:N1    | 8:AB:2482:A:C8    | 2.77                     | 0.52              |
| 8:AB:2490:G:H4'   | 8:AB:2491:U:H5'   | 1.91                     | 0.52              |
| 8:AB:2582:G:O2'   | 8:AB:2583:G:H5'   | 2.10                     | 0.52              |
| 8:AB:2623:G:H5''  | 8:AB:2623:G:H8    | 1.73                     | 0.52              |
| 8:AB:2656:U:C5    | 8:AB:2664:G:N2    | 2.77                     | 0.52              |
| 10:AD:37:VAL:HG13 | 10:AD:42:ASN:CG   | 2.30                     | 0.52              |
| 11:AE:158:PHE:O   | 11:AE:160:ALA:N   | 2.42                     | 0.52              |
| 11:AE:194:LYS:NZ  | 11:AE:194:LYS:N   | 2.47                     | 0.52              |
| 15:AI:23:VAL:HG12 | 15:AI:27:LEU:CD2  | 2.40                     | 0.52              |
| 15:AI:33:ASN:HD21 | 15:AI:64:ARG:CD   | 2.20                     | 0.52              |
| 18:AL:29:LYS:CD   | 18:AL:31:GLY:H    | 2.15                     | 0.52              |
| 18:AL:35:HIS:NE2  | 24:AR:83:TYR:C    | 2.63                     | 0.52              |
| 18:AL:85:VAL:HG12 | 18:AL:86:GLU:OE1  | 2.10                     | 0.52              |
| 19:AM:5:LYS:O     | 19:AM:7:THR:N     | 2.42                     | 0.52              |
| 19:AM:18:ARG:H    | 19:AM:18:ARG:HD2  | 1.73                     | 0.52              |
| 19:AM:96:ILE:HG22 | 19:AM:97:GLN:HE22 | 1.74                     | 0.52              |
| 22:AP:37:LYS:O    | 22:AP:38:ARG:HB2  | 2.09                     | 0.52              |
| 27:AU:85:ARG:HB2  | 27:AU:86:PHE:HD1  | 1.75                     | 0.52              |
| 29:AW:44:PHE:CD1  | 29:AW:44:PHE:C    | 2.83                     | 0.52              |
| 31:AY:43:ILE:HD13 | 31:AY:43:ILE:C    | 2.30                     | 0.52              |
| 33:BA:426:U:N3    | 33:BA:427:U:C5    | 2.78                     | 0.52              |
| 33:BA:430:A:H2'   | 33:BA:431:A:C8    | 2.45                     | 0.52              |
| 33:BA:475:C:C2'   | 33:BA:476:U:H5'   | 2.39                     | 0.52              |
| 33:BA:533:A:C6    | 33:BA:536:C:C6    | 2.98                     | 0.52              |
| 33:BA:822:U:C4    | 33:BA:823:C:N4    | 2.78                     | 0.52              |
| 33:BA:992:U:H4'   | 33:BA:993:G:O5'   | 2.09                     | 0.52              |
| 33:BA:1118:U:OP2  | 41:BI:10:ARG:HD2  | 2.09                     | 0.52              |
| 33:BA:1146:A:H2'  | 33:BA:1147:C:O4'  | 2.10                     | 0.52              |
| 33:BA:1251:A:H2'  | 33:BA:1252:A:C8   | 2.39                     | 0.52              |
| 33:BA:1426:G:C4   | 33:BA:1427:C:C6   | 2.97                     | 0.52              |
| 35:BC:21:TRP:HA   | 42:BJ:94:ALA:O    | 2.10                     | 0.52              |
| 35:BC:55:VAL:HG12 | 35:BC:56:ILE:H    | 1.75                     | 0.52              |
| 36:BD:2:ARG:H     | 36:BD:4:LEU:HD23  | 1.73                     | 0.52              |
| 36:BD:36:ALA:C    | 36:BD:38:GLY:H    | 2.12                     | 0.52              |
| 39:BG:17:PHE:CD2  | 39:BG:58:LEU:HD13 | 2.44                     | 0.52              |
| 40:BH:86:LYS:HB3  | 40:BH:90:GLU:HG3  | 1.91                     | 0.52              |
| 44:BL:27:PRO:HB2  | 44:BL:28:GLN:OE1  | 2.10                     | 0.52              |
| 45:BM:2:ARG:HG3   | 45:BM:8:ILE:CG2   | 2.40                     | 0.52              |
| 45:BM:21:ILE:HG22 | 45:BM:22:TYR:N    | 2.25                     | 0.52              |
| 47:BO:42:PHE:C    | 47:BO:44:GLU:N    | 2.63                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 48:BP:39:PHE:CE1  | 48:BP:74:LEU:HD22 | 2.44                     | 0.52              |
| 7:CA:66:A:N3      | 7:CA:108:A:C6     | 2.78                     | 0.52              |
| 8:CB:65:U:P       | 26:CT:76:ARG:HB3  | 2.50                     | 0.52              |
| 8:CB:136:G:C8     | 8:CB:136:G:OP2    | 2.63                     | 0.52              |
| 8:CB:370:G:H8     | 8:CB:370:G:O5'    | 1.92                     | 0.52              |
| 8:CB:372:G:H8     | 32:CZ:54:GLY:CA   | 2.23                     | 0.52              |
| 8:CB:401:A:H2'    | 8:CB:402:A:C8     | 2.45                     | 0.52              |
| 8:CB:487:C:C2'    | 8:CB:488:G:H5'    | 2.40                     | 0.52              |
| 8:CB:571:U:C4     | 8:CB:2030:A:C2    | 2.98                     | 0.52              |
| 8:CB:597:G:O2'    | 18:CL:21:ARG:HG3  | 2.10                     | 0.52              |
| 8:CB:721:A:H2'    | 8:CB:722:A:C8     | 2.45                     | 0.52              |
| 8:CB:812:C:H5'    | 18:CL:32:GLY:O    | 2.09                     | 0.52              |
| 8:CB:909:A:P      | 55:CB:5178:HOH:O  | 2.67                     | 0.52              |
| 8:CB:1010:A:H3'   | 8:CB:1010:A:H8    | 1.74                     | 0.52              |
| 8:CB:1350:C:N4    | 8:CB:1382:G:C6    | 2.78                     | 0.52              |
| 8:CB:1720:U:H2'   | 8:CB:1721:G:C5'   | 2.39                     | 0.52              |
| 8:CB:1783:A:H5''  | 8:CB:1784:A:OP2   | 2.09                     | 0.52              |
| 8:CB:2189:U:C6    | 8:CB:2189:U:C3'   | 2.93                     | 0.52              |
| 8:CB:2259:U:C2    | 8:CB:2260:C:C6    | 2.98                     | 0.52              |
| 8:CB:2380:C:O2'   | 8:CB:2381:A:H5'   | 2.09                     | 0.52              |
| 8:CB:2444:G:OP2   | 11:CE:63:LYS:NZ   | 2.43                     | 0.52              |
| 8:CB:2627:G:H2'   | 8:CB:2628:C:C6    | 2.44                     | 0.52              |
| 8:CB:2669:G:H2'   | 8:CB:2670:A:C8    | 2.44                     | 0.52              |
| 8:CB:2701:U:H6    | 8:CB:2701:U:H3'   | 1.73                     | 0.52              |
| 8:CB:2770:G:C4    | 8:CB:2771:C:H5    | 2.27                     | 0.52              |
| 8:CB:2813:A:N6    | 8:CB:2814:A:N6    | 2.58                     | 0.52              |
| 9:CC:135:PRO:O    | 9:CC:165:ALA:O    | 2.27                     | 0.52              |
| 9:CC:161:VAL:HG12 | 9:CC:173:LEU:HD21 | 1.90                     | 0.52              |
| 9:CC:177:SER:C    | 9:CC:179:GLU:H    | 2.13                     | 0.52              |
| 9:CC:261:ARG:HD3  | 9:CC:261:ARG:N    | 2.25                     | 0.52              |
| 11:CE:97:ASN:N    | 11:CE:97:ASN:OD1  | 2.43                     | 0.52              |
| 13:CG:26:LYS:O    | 13:CG:78:VAL:HG21 | 2.09                     | 0.52              |
| 13:CG:88:LEU:N    | 13:CG:88:LEU:HD12 | 2.24                     | 0.52              |
| 16:CJ:63:ALA:HA   | 16:CJ:69:ARG:NH1  | 2.23                     | 0.52              |
| 17:CK:66:LYS:CG   | 17:CK:80:ASP:HA   | 2.39                     | 0.52              |
| 19:CM:77:PRO:CG   | 19:CM:86:LYS:HZ3  | 2.21                     | 0.52              |
| 25:CS:65:ASP:N    | 25:CS:65:ASP:OD1  | 2.42                     | 0.52              |
| 26:CT:58:VAL:HG12 | 26:CT:59:ASN:H    | 1.74                     | 0.52              |
| 29:CW:39:GLN:HG2  | 29:CW:66:VAL:O    | 2.09                     | 0.52              |
| 30:CX:25:GLN:HE22 | 30:CX:46:VAL:HG11 | 1.74                     | 0.52              |
| 32:CZ:59:ARG:HG3  | 32:CZ:62:LYS:CB   | 2.39                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:16:A:O2'    | 37:DE:20:VAL:HG23 | 2.09                     | 0.52              |
| 33:DA:22:G:C2     | 33:DA:914:A:N7    | 2.78                     | 0.52              |
| 33:DA:109:A:C2    | 33:DA:327:A:C2    | 2.97                     | 0.52              |
| 33:DA:402:G:N1    | 33:DA:403:C:C4    | 2.78                     | 0.52              |
| 33:DA:489:C:H2'   | 33:DA:489:C:O2    | 2.09                     | 0.52              |
| 33:DA:518:C:C5    | 33:DA:529:G:C5    | 2.98                     | 0.52              |
| 33:DA:682:G:C2    | 33:DA:683:G:N7    | 2.78                     | 0.52              |
| 33:DA:731:G:C2    | 33:DA:732:C:C2    | 2.98                     | 0.52              |
| 33:DA:785:G:N2    | 33:DA:798:U:H1'   | 2.25                     | 0.52              |
| 33:DA:872:A:C4    | 33:DA:874:G:N7    | 2.78                     | 0.52              |
| 33:DA:894:G:H2'   | 33:DA:895:G:C8    | 2.42                     | 0.52              |
| 33:DA:918:A:N1    | 33:DA:919:A:C5    | 2.78                     | 0.52              |
| 33:DA:1130:A:O5'  | 33:DA:1130:A:C8   | 2.62                     | 0.52              |
| 33:DA:1178:G:H5'  | 33:DA:1179:A:OP2  | 2.09                     | 0.52              |
| 33:DA:1299:A:C6   | 33:DA:1301:U:C2   | 2.98                     | 0.52              |
| 34:DB:65:LYS:HB3  | 34:DB:89:PHE:HE1  | 1.73                     | 0.52              |
| 39:DG:102:TRP:CD1 | 39:DG:136:LYS:HD2 | 2.45                     | 0.52              |
| 40:DH:32:LYS:HA   | 40:DH:35:ILE:HD12 | 1.91                     | 0.52              |
| 40:DH:105:THR:HA  | 40:DH:122:GLY:HA3 | 1.91                     | 0.52              |
| 42:DJ:29:ALA:HB2  | 42:DJ:87:LEU:HD21 | 1.91                     | 0.52              |
| 42:DJ:53:ILE:HG22 | 42:DJ:61:ALA:CB   | 2.32                     | 0.52              |
| 45:DM:49:GLU:HA   | 45:DM:52:ILE:CG2  | 2.39                     | 0.52              |
| 51:DS:24:SER:HB2  | 51:DS:27:LYS:CE   | 2.39                     | 0.52              |
| 52:DT:23:ARG:HD2  | 52:DT:23:ARG:N    | 2.24                     | 0.52              |
| 7:AA:27:C:C4      | 7:AA:28:C:C4      | 2.98                     | 0.52              |
| 8:AB:193:U:N3     | 8:AB:194:G:N7     | 2.57                     | 0.52              |
| 8:AB:402:A:N7     | 8:AB:403:U:C5     | 2.77                     | 0.52              |
| 8:AB:481:G:H1'    | 8:AB:507:A:N6     | 2.24                     | 0.52              |
| 8:AB:573:U:H5'    | 55:AB:4322:HOH:O  | 2.09                     | 0.52              |
| 8:AB:691:C:OP1    | 9:AC:216:ARG:NH1  | 2.43                     | 0.52              |
| 8:AB:824:U:C4     | 8:AB:825:A:N7     | 2.78                     | 0.52              |
| 8:AB:836:G:C6     | 8:AB:837:C:C4     | 2.98                     | 0.52              |
| 8:AB:961:C:N4     | 8:AB:2031:A:C8    | 2.78                     | 0.52              |
| 8:AB:979:A:H2     | 8:AB:982:C:C2     | 2.24                     | 0.52              |
| 8:AB:1184:U:C2    | 8:AB:1185:G:N7    | 2.78                     | 0.52              |
| 8:AB:1243:C:H2'   | 8:AB:1244:A:H8    | 1.74                     | 0.52              |
| 8:AB:1551:A:C3'   | 8:AB:1552:A:H5''  | 2.39                     | 0.52              |
| 8:AB:1652:A:C3'   | 8:AB:1653:G:H5'   | 2.40                     | 0.52              |
| 8:AB:1765:U:O2    | 8:AB:1765:U:C2'   | 2.57                     | 0.52              |
| 8:AB:1809:A:C3'   | 8:AB:1810:A:C8    | 2.92                     | 0.52              |
| 8:AB:2007:U:P     | 55:AB:4569:HOH:O  | 2.68                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2464:G:C4    | 8:AB:2487:G:C2    | 2.98                     | 0.52              |
| 8:AB:2636:C:O2'   | 10:AD:80:TRP:CH2  | 2.57                     | 0.52              |
| 8:AB:2715:C:H2'   | 8:AB:2716:C:H5'   | 1.92                     | 0.52              |
| 8:AB:2733:A:C6    | 8:AB:2734:A:C5    | 2.97                     | 0.52              |
| 9:AC:87:SER:O     | 9:AC:88:ALA:HB2   | 2.09                     | 0.52              |
| 11:AE:194:LYS:HZ2 | 11:AE:194:LYS:HB2 | 1.75                     | 0.52              |
| 13:AG:13:GLY:O    | 13:AG:27:GLY:HA3  | 2.09                     | 0.52              |
| 13:AG:60:GLY:O    | 13:AG:63:GLN:HG2  | 2.09                     | 0.52              |
| 14:AH:6:LEU:HA    | 14:AH:15:LEU:H    | 1.75                     | 0.52              |
| 14:AH:28:ASN:O    | 14:AH:29:PHE:HB2  | 2.08                     | 0.52              |
| 16:AJ:46:PRO:O    | 16:AJ:48:VAL:N    | 2.42                     | 0.52              |
| 19:AM:42:THR:HA   | 19:AM:92:TRP:CD1  | 2.45                     | 0.52              |
| 19:AM:71:LYS:NZ   | 19:AM:93:VAL:HG12 | 2.25                     | 0.52              |
| 19:AM:99:GLY:C    | 19:AM:100:LYS:HG3 | 2.29                     | 0.52              |
| 20:AN:20:MET:HE3  | 20:AN:21:PHE:HE1  | 1.75                     | 0.52              |
| 23:AQ:52:ARG:NE   | 23:AQ:55:GLN:HG2  | 2.25                     | 0.52              |
| 25:AS:17:VAL:HG12 | 25:AS:43:ALA:HB1  | 1.92                     | 0.52              |
| 26:AT:23:ALA:HB1  | 26:AT:29:THR:O    | 2.10                     | 0.52              |
| 27:AU:46:LYS:HB2  | 27:AU:53:GLN:CA   | 2.40                     | 0.52              |
| 27:AU:71:ILE:O    | 27:AU:72:PHE:CD2  | 2.63                     | 0.52              |
| 33:BA:173:U:H4'   | 33:BA:197:A:C8    | 2.45                     | 0.52              |
| 33:BA:201:G:N2    | 33:BA:217:C:H1'   | 2.25                     | 0.52              |
| 33:BA:394:G:C4    | 33:BA:395:C:C5    | 2.98                     | 0.52              |
| 33:BA:499:A:C6    | 33:BA:547:A:C8    | 2.98                     | 0.52              |
| 33:BA:959:A:H2'   | 33:BA:960:U:O4'   | 2.10                     | 0.52              |
| 36:BD:104:MET:O   | 36:BD:106:PHE:N   | 2.43                     | 0.52              |
| 37:BE:132:PRO:O   | 37:BE:134:ASN:N   | 2.42                     | 0.52              |
| 39:BG:22:LEU:HG   | 39:BG:22:LEU:O    | 2.08                     | 0.52              |
| 41:BI:79:ARG:NE   | 41:BI:102:PHE:HD2 | 2.08                     | 0.52              |
| 41:BI:85:ALA:C    | 41:BI:87:MET:H    | 2.13                     | 0.52              |
| 44:BL:82:ARG:HH11 | 44:BL:95:HIS:HB3  | 1.75                     | 0.52              |
| 46:BN:60:ARG:H    | 46:BN:60:ARG:CD   | 2.20                     | 0.52              |
| 5:C4:24:ARG:HG2   | 5:C4:36:ARG:O     | 2.10                     | 0.52              |
| 8:CB:155:A:H8     | 8:CB:155:A:O5'    | 1.92                     | 0.52              |
| 8:CB:311:A:O5'    | 8:CB:332:A:C2     | 2.63                     | 0.52              |
| 8:CB:358:U:H2'    | 8:CB:359:G:O4'    | 2.10                     | 0.52              |
| 8:CB:395:U:H4'    | 32:CZ:11:GLU:OE2  | 2.10                     | 0.52              |
| 8:CB:400:G:H3'    | 8:CB:400:G:C8     | 2.45                     | 0.52              |
| 8:CB:588:U:H5''   | 18:CL:29:LYS:HD2  | 1.91                     | 0.52              |
| 8:CB:663:G:C6     | 8:CB:664:G:C5     | 2.98                     | 0.52              |
| 8:CB:673:C:C2     | 8:CB:808:G:N2     | 2.78                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:792:A:C5      | 8:CB:2440:C:C5     | 2.98                     | 0.52              |
| 8:CB:794:A:H2'     | 8:CB:795:C:H5'     | 1.92                     | 0.52              |
| 8:CB:796:C:H5      | 55:CB:5151:HOH:O   | 1.92                     | 0.52              |
| 8:CB:830:G:H4'     | 8:CB:831:G:OP2     | 2.09                     | 0.52              |
| 8:CB:831:G:O6      | 8:CB:832:U:N3      | 2.41                     | 0.52              |
| 8:CB:911:A:C6      | 19:CM:13:HIS:CD2   | 2.97                     | 0.52              |
| 8:CB:1344:U:H5'    | 8:CB:1345:C:C5     | 2.45                     | 0.52              |
| 8:CB:1364:G:C1'    | 8:CB:1368:G:N2     | 2.70                     | 0.52              |
| 8:CB:1418:G:H1'    | 8:CB:1581:G:N2     | 2.25                     | 0.52              |
| 8:CB:1614:A:H8     | 8:CB:1614:A:O5'    | 1.92                     | 0.52              |
| 8:CB:1818:U:OP1    | 9:CC:86:ARG:HG3    | 2.10                     | 0.52              |
| 8:CB:1823:G:C8     | 8:CB:1823:G:H3'    | 2.44                     | 0.52              |
| 8:CB:1855:U:C5     | 8:CB:1856:U:C4     | 2.97                     | 0.52              |
| 8:CB:2007:U:H5''   | 8:CB:2007:U:C6     | 2.45                     | 0.52              |
| 8:CB:2100:G:C2     | 8:CB:2101:A:C4     | 2.98                     | 0.52              |
| 8:CB:2315:G:H5'    | 12:CF:156:THR:HG21 | 1.91                     | 0.52              |
| 8:CB:2341:G:C5     | 8:CB:2342:C:C5     | 2.98                     | 0.52              |
| 8:CB:2574:G:N3     | 10:CD:147:GLY:HA3  | 2.25                     | 0.52              |
| 8:CB:2721:A:H2'    | 8:CB:2722:G:O4'    | 2.10                     | 0.52              |
| 8:CB:2854:G:O2'    | 8:CB:2855:C:H5'    | 2.09                     | 0.52              |
| 12:CF:3:LEU:HA     | 12:CF:6:TYR:CD2    | 2.45                     | 0.52              |
| 14:CH:68:ARG:HG2   | 14:CH:71:LYS:HD3   | 1.92                     | 0.52              |
| 14:CH:97:ARG:O     | 14:CH:100:ALA:HB3  | 2.10                     | 0.52              |
| 16:CJ:77:HIS:HB2   | 16:CJ:85:LYS:CE    | 2.40                     | 0.52              |
| 20:CN:87:PHE:HB3   | 20:CN:94:TYR:CZ    | 2.44                     | 0.52              |
| 21:CO:31:THR:HG22  | 21:CO:33:ARG:H     | 1.74                     | 0.52              |
| 33:DA:101:A:C6     | 33:DA:102:G:C8     | 2.98                     | 0.52              |
| 33:DA:138:G:C6     | 33:DA:226:G:C6     | 2.97                     | 0.52              |
| 33:DA:393:A:C2     | 33:DA:394:G:C1'    | 2.92                     | 0.52              |
| 33:DA:407:U:C2     | 33:DA:408:A:C8     | 2.97                     | 0.52              |
| 33:DA:541:G:O2'    | 33:DA:542:G:H5'    | 2.10                     | 0.52              |
| 33:DA:570:G:O6     | 33:DA:866:C:N3     | 2.43                     | 0.52              |
| 33:DA:774:G:H3'    | 33:DA:774:G:C8     | 2.45                     | 0.52              |
| 33:DA:842:U:C2'    | 33:DA:843:U:H4'    | 2.35                     | 0.52              |
| 33:DA:964:A:H5''   | 33:DA:965:U:OP2    | 2.10                     | 0.52              |
| 33:DA:1053:G:C5    | 33:DA:1199:U:H2'   | 2.45                     | 0.52              |
| 33:DA:1078:U:H3'   | 33:DA:1078:U:C6    | 2.45                     | 0.52              |
| 33:DA:1450:U:H2'   | 33:DA:1452:C:C4    | 2.45                     | 0.52              |
| 34:DB:79:VAL:O     | 34:DB:83:ALA:HB2   | 2.09                     | 0.52              |
| 34:DB:162:VAL:HG13 | 34:DB:184:ALA:HB2  | 1.91                     | 0.52              |
| 42:DJ:42:LEU:HB2   | 42:DJ:71:LEU:O     | 2.10                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:DQ:65:PRO:HA   | 49:DQ:71:SER:HB3   | 1.92                     | 0.52              |
| 50:DR:23:LYS:O    | 50:DR:25:ILE:HG22  | 2.09                     | 0.52              |
| 50:DR:51:GLN:HE21 | 50:DR:51:GLN:HA    | 1.75                     | 0.52              |
| 51:DS:56:HIS:N    | 51:DS:56:HIS:CD2   | 2.77                     | 0.52              |
| 52:DT:53:MET:HA   | 52:DT:56:ILE:HG13  | 1.90                     | 0.52              |
| 4:A3:26:ALA:O     | 4:A3:27:ASN:HB2    | 2.09                     | 0.52              |
| 8:AB:62:U:H3'     | 8:AB:63:A:C8       | 2.45                     | 0.52              |
| 8:AB:529:A:C6     | 8:AB:2042:A:C2     | 2.98                     | 0.52              |
| 8:AB:577:G:H2'    | 8:AB:578:G:C8      | 2.45                     | 0.52              |
| 8:AB:806:C:O2'    | 8:AB:807:U:H5'     | 2.10                     | 0.52              |
| 8:AB:818:G:N2     | 8:AB:1190:G:C6     | 2.78                     | 0.52              |
| 8:AB:839:U:H2'    | 8:AB:840:C:H6      | 1.74                     | 0.52              |
| 8:AB:933:A:C8     | 8:AB:933:A:H3'     | 2.45                     | 0.52              |
| 8:AB:1061:U:H4'   | 8:AB:1070:A:H4'    | 1.91                     | 0.52              |
| 8:AB:1357:C:H2'   | 8:AB:1358:G:O4'    | 2.10                     | 0.52              |
| 8:AB:1771:C:N3    | 8:AB:1772:A:C5     | 2.77                     | 0.52              |
| 8:AB:1807:G:C2    | 8:AB:1811:G:O6     | 2.62                     | 0.52              |
| 8:AB:2014:A:C2'   | 8:AB:2015:A:H8     | 2.06                     | 0.52              |
| 8:AB:2023:C:H2'   | 8:AB:2024:G:C8     | 2.43                     | 0.52              |
| 8:AB:2289:G:C6    | 8:AB:2290:G:N7     | 2.78                     | 0.52              |
| 8:AB:2409:G:H2'   | 8:AB:2410:G:O4'    | 2.09                     | 0.52              |
| 8:AB:2454:G:C2'   | 8:AB:2455:G:H5'    | 2.40                     | 0.52              |
| 9:AC:12:ARG:HH11  | 9:AC:18:VAL:CG2    | 2.18                     | 0.52              |
| 9:AC:20:ASN:HD21  | 9:AC:203:VAL:CG1   | 2.23                     | 0.52              |
| 10:AD:89:GLU:HG2  | 10:AD:89:GLU:O     | 2.08                     | 0.52              |
| 12:AF:7:TYR:HA    | 12:AF:11:VAL:HB    | 1.91                     | 0.52              |
| 22:AP:26:GLU:HA   | 22:AP:47:ILE:CB    | 2.38                     | 0.52              |
| 23:AQ:73:ILE:HG23 | 23:AQ:77:LYS:HB2   | 1.92                     | 0.52              |
| 23:AQ:94:LEU:O    | 23:AQ:97:ILE:HG13  | 2.10                     | 0.52              |
| 26:AT:11:LEU:HD21 | 26:AT:47:VAL:HG23  | 1.92                     | 0.52              |
| 33:BA:7:A:C8      | 37:BE:123:LEU:HD13 | 2.45                     | 0.52              |
| 33:BA:734:G:N3    | 33:BA:735:C:C6     | 2.78                     | 0.52              |
| 33:BA:825:A:H61   | 33:BA:876:C:H42    | 1.58                     | 0.52              |
| 33:BA:829:G:H2'   | 33:BA:830:G:C8     | 2.40                     | 0.52              |
| 33:BA:875:U:H6    | 33:BA:875:U:H3'    | 1.73                     | 0.52              |
| 33:BA:881:G:C2    | 33:BA:882:C:O2     | 2.63                     | 0.52              |
| 33:BA:963:G:O2'   | 33:BA:1199:U:H5''  | 2.09                     | 0.52              |
| 33:BA:1068:G:C8   | 33:BA:1068:G:H5''  | 2.45                     | 0.52              |
| 33:BA:1076:U:C2'  | 33:BA:1077:G:H5'   | 2.39                     | 0.52              |
| 33:BA:1222:G:H5'' | 51:BS:77:ARG:HH11  | 1.75                     | 0.52              |
| 33:BA:1288:A:C6   | 33:BA:1289:A:C5    | 2.98                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:1289:A:C2'  | 33:BA:1290:G:H5'  | 2.39                     | 0.52              |
| 33:BA:1415:G:C4   | 33:BA:1486:G:N2   | 2.77                     | 0.52              |
| 33:BA:1466:C:C2   | 33:BA:1467:C:C5   | 2.97                     | 0.52              |
| 33:BA:1478:U:C4   | 33:BA:1479:C:N4   | 2.78                     | 0.52              |
| 35:BC:35:ASP:HB3  | 35:BC:39:ARG:NH2  | 2.24                     | 0.52              |
| 35:BC:118:SER:O   | 35:BC:121:SER:HB3 | 2.10                     | 0.52              |
| 37:BE:131:ASN:OD1 | 37:BE:132:PRO:HD2 | 2.10                     | 0.52              |
| 39:BG:59:GLU:CD   | 39:BG:59:GLU:H    | 2.13                     | 0.52              |
| 41:BI:89:TYR:HD1  | 41:BI:89:TYR:O    | 1.92                     | 0.52              |
| 43:BK:17:ASP:N    | 43:BK:17:ASP:OD1  | 2.42                     | 0.52              |
| 7:CA:42:C:O2      | 7:CA:42:C:C2'     | 2.58                     | 0.52              |
| 8:CB:141:G:H3'    | 8:CB:142:A:C1'    | 2.40                     | 0.52              |
| 8:CB:464:U:H1'    | 8:CB:686:U:H5     | 1.74                     | 0.52              |
| 8:CB:689:A:C2     | 8:CB:779:U:H4'    | 2.45                     | 0.52              |
| 8:CB:729:G:H5''   | 8:CB:763:G:OP2    | 2.10                     | 0.52              |
| 8:CB:735:A:C8     | 8:CB:736:C:C5     | 2.98                     | 0.52              |
| 8:CB:770:G:H2'    | 8:CB:771:G:O4'    | 2.10                     | 0.52              |
| 8:CB:1087:G:N7    | 8:CB:1089:A:N3    | 2.57                     | 0.52              |
| 8:CB:1263:U:N3    | 8:CB:1264:A:N1    | 2.57                     | 0.52              |
| 8:CB:1353:A:C5    | 8:CB:1378:A:C6    | 2.98                     | 0.52              |
| 8:CB:1694:C:C5'   | 8:CB:1694:C:H6    | 2.23                     | 0.52              |
| 8:CB:1798:U:C4    | 8:CB:1819:A:C2    | 2.98                     | 0.52              |
| 8:CB:1863:G:C2    | 8:CB:1880:U:O2    | 2.62                     | 0.52              |
| 8:CB:2071:A:C5    | 8:CB:2072:C:C5    | 2.98                     | 0.52              |
| 8:CB:2386:A:H2'   | 8:CB:2387:U:C6    | 2.44                     | 0.52              |
| 8:CB:2645:G:H8    | 8:CB:2645:G:H5''  | 1.74                     | 0.52              |
| 9:CC:161:VAL:N    | 9:CC:193:GLU:CD   | 2.62                     | 0.52              |
| 14:CH:61:VAL:HG21 | 14:CH:135:HIS:ND1 | 2.25                     | 0.52              |
| 15:CI:94:LYS:O    | 15:CI:94:LYS:HG2  | 2.09                     | 0.52              |
| 16:CJ:19:ASP:O    | 16:CJ:20:ALA:CB   | 2.58                     | 0.52              |
| 16:CJ:34:ARG:O    | 16:CJ:38:GLY:N    | 2.43                     | 0.52              |
| 17:CK:86:LEU:C    | 17:CK:87:LEU:HD23 | 2.30                     | 0.52              |
| 18:CL:126:ARG:HD2 | 18:CL:127:VAL:H   | 1.71                     | 0.52              |
| 19:CM:9:PHE:CD1   | 19:CM:10:ARG:N    | 2.78                     | 0.52              |
| 19:CM:16:ARG:HB3  | 19:CM:18:ARG:HH21 | 1.74                     | 0.52              |
| 19:CM:95:LEU:H    | 19:CM:95:LEU:HD23 | 1.74                     | 0.52              |
| 20:CN:71:ARG:O    | 20:CN:72:ASP:CB   | 2.58                     | 0.52              |
| 20:CN:73:ASN:O    | 20:CN:74:GLU:C    | 2.48                     | 0.52              |
| 23:CQ:61:ILE:HA   | 23:CQ:64:ILE:HG13 | 1.92                     | 0.52              |
| 24:CR:5:PHE:HB3   | 24:CR:12:HIS:ND1  | 2.25                     | 0.52              |
| 24:CR:36:ALA:O    | 24:CR:37:GLU:HB3  | 2.09                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:CS:68:ASP:C     | 25:CS:69:LEU:HD22  | 2.30                     | 0.52              |
| 27:CU:3:LYS:O      | 27:CU:4:ILE:CB     | 2.57                     | 0.52              |
| 30:CX:17:GLU:HA    | 30:CX:21:LEU:HB3   | 1.90                     | 0.52              |
| 33:DA:26:A:N6      | 33:DA:558:G:H1'    | 2.25                     | 0.52              |
| 33:DA:53:A:C2      | 33:DA:359:G:C2     | 2.98                     | 0.52              |
| 33:DA:89:U:H2'     | 33:DA:90:C:C6      | 2.45                     | 0.52              |
| 33:DA:381:C:O2'    | 33:DA:382:A:H5'    | 2.10                     | 0.52              |
| 33:DA:579:A:H5''   | 33:DA:579:A:H8     | 1.75                     | 0.52              |
| 33:DA:998:C:N4     | 33:DA:1044:A:N1    | 2.57                     | 0.52              |
| 33:DA:999:C:O2     | 33:DA:1042:A:C2    | 2.63                     | 0.52              |
| 33:DA:1010:U:O2'   | 33:DA:1011:C:H5'   | 2.09                     | 0.52              |
| 33:DA:1024:G:C5    | 33:DA:1025:U:C5    | 2.96                     | 0.52              |
| 33:DA:1058:G:C6    | 33:DA:1059:C:N3    | 2.77                     | 0.52              |
| 33:DA:1112:C:C2    | 35:DC:177:LEU:HB2  | 2.44                     | 0.52              |
| 33:DA:1126:U:C6    | 33:DA:1280:A:H5'   | 2.45                     | 0.52              |
| 33:DA:1170:A:C2    | 33:DA:1171:A:C4    | 2.98                     | 0.52              |
| 33:DA:1221:G:O3'   | 51:DS:76:THR:HG21  | 2.10                     | 0.52              |
| 33:DA:1227:A:C8    | 33:DA:1227:A:C5'   | 2.89                     | 0.52              |
| 33:DA:1315:U:O2'   | 33:DA:1360:A:N3    | 2.41                     | 0.52              |
| 33:DA:1463:U:H3'   | 33:DA:1463:U:C6    | 2.45                     | 0.52              |
| 34:DB:14:HIS:C     | 34:DB:15:PHE:HD2   | 2.12                     | 0.52              |
| 39:DG:103:ILE:HG13 | 39:DG:104:VAL:N    | 2.24                     | 0.52              |
| 39:DG:112:ASP:HB3  | 39:DG:117:LEU:HD22 | 1.92                     | 0.52              |
| 42:DJ:17:LEU:O     | 42:DJ:17:LEU:HD22  | 2.10                     | 0.52              |
| 43:DK:74:LYS:HE2   | 43:DK:79:LYS:HD3   | 1.91                     | 0.52              |
| 43:DK:91:GLY:O     | 43:DK:95:THR:HG22  | 2.09                     | 0.52              |
| 44:DL:13:ARG:HD2   | 44:DL:13:ARG:H     | 1.74                     | 0.52              |
| 46:DN:5:MET:HG2    | 46:DN:5:MET:O      | 2.10                     | 0.52              |
| 46:DN:81:ILE:O     | 46:DN:84:ARG:HB3   | 2.10                     | 0.52              |
| 51:DS:10:ILE:HG23  | 51:DS:38:THR:N     | 2.25                     | 0.52              |
| 4:A3:5:THR:O       | 4:A3:5:THR:HG23    | 2.10                     | 0.52              |
| 7:AA:42:C:C4       | 7:AA:43:C:C4       | 2.98                     | 0.52              |
| 8:AB:115:C:N3      | 8:AB:116:C:C5      | 2.77                     | 0.52              |
| 8:AB:535:G:O2'     | 23:AQ:52:ARG:CD    | 2.57                     | 0.52              |
| 8:AB:689:A:H2      | 8:AB:779:U:H4'     | 1.74                     | 0.52              |
| 8:AB:790:U:C5      | 8:AB:791:C:H5      | 2.27                     | 0.52              |
| 8:AB:841:G:C2      | 8:AB:842:U:C2      | 2.97                     | 0.52              |
| 8:AB:871:U:HO2'    | 19:AM:68:PHE:HD1   | 1.48                     | 0.52              |
| 8:AB:947:A:C6      | 8:AB:948:C:N4      | 2.78                     | 0.52              |
| 8:AB:969:G:C2      | 8:AB:970:U:C2      | 2.98                     | 0.52              |
| 8:AB:1973:G:H3'    | 8:AB:1973:G:C8     | 2.45                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2020:A:O2'   | 8:AB:2021:C:H5'   | 2.10                     | 0.52              |
| 8:AB:2092:U:C4'   | 8:AB:2093:G:O5'   | 2.57                     | 0.52              |
| 8:AB:2261:C:N3    | 8:AB:2280:G:N2    | 2.58                     | 0.52              |
| 8:AB:2317:A:H2'   | 8:AB:2318:G:H5'   | 1.90                     | 0.52              |
| 8:AB:2453:A:C2    | 8:AB:2504:U:O2    | 2.63                     | 0.52              |
| 8:AB:2751:G:N3    | 13:AG:1:SER:HB3   | 2.25                     | 0.52              |
| 9:AC:134:ILE:CD1  | 9:AC:135:PRO:HD2  | 2.39                     | 0.52              |
| 10:AD:155:VAL:O   | 10:AD:156:PHE:HB2 | 2.10                     | 0.52              |
| 11:AE:25:GLU:O    | 11:AE:26:ALA:C    | 2.48                     | 0.52              |
| 11:AE:171:ASP:O   | 11:AE:172:ALA:CB  | 2.58                     | 0.52              |
| 12:AF:10:GLU:HA   | 12:AF:13:LYS:HB2  | 1.90                     | 0.52              |
| 16:AJ:59:ALA:C    | 16:AJ:61:LYS:N    | 2.63                     | 0.52              |
| 16:AJ:98:GLU:O    | 16:AJ:100:VAL:N   | 2.43                     | 0.52              |
| 18:AL:83:ALA:H    | 18:AL:86:GLU:HG2  | 1.74                     | 0.52              |
| 20:AN:99:LYS:HD2  | 20:AN:99:LYS:H    | 1.75                     | 0.52              |
| 24:AR:40:MET:HA   | 24:AR:54:VAL:HG11 | 1.90                     | 0.52              |
| 24:AR:75:VAL:CG2  | 24:AR:90:ARG:HE   | 2.23                     | 0.52              |
| 28:AV:70:ILE:CD1  | 28:AV:70:ILE:N    | 2.73                     | 0.52              |
| 33:BA:101:A:C6    | 33:BA:102:G:N7    | 2.78                     | 0.52              |
| 33:BA:188:C:H6    | 33:BA:188:C:O5'   | 1.92                     | 0.52              |
| 33:BA:257:G:C6    | 33:BA:258:G:N7    | 2.78                     | 0.52              |
| 33:BA:393:A:N3    | 33:BA:393:A:H2'   | 2.25                     | 0.52              |
| 33:BA:457:G:C6    | 33:BA:458:U:C2    | 2.97                     | 0.52              |
| 33:BA:514:C:O2    | 33:BA:538:G:C2    | 2.63                     | 0.52              |
| 33:BA:542:G:C2    | 33:BA:543:U:C2    | 2.97                     | 0.52              |
| 33:BA:879:C:O2    | 33:BA:879:C:H2'   | 2.10                     | 0.52              |
| 33:BA:928:G:C2    | 33:BA:1390:U:O2   | 2.63                     | 0.52              |
| 33:BA:1050:G:C2   | 33:BA:1051:C:C2   | 2.98                     | 0.52              |
| 33:BA:1050:G:H2'  | 33:BA:1051:C:O4'  | 2.10                     | 0.52              |
| 33:BA:1084:G:C4   | 33:BA:1085:U:C5   | 2.98                     | 0.52              |
| 33:BA:1121:U:H2'  | 33:BA:1122:U:C6   | 2.44                     | 0.52              |
| 33:BA:1444:U:H2'  | 33:BA:1445:U:O4'  | 2.10                     | 0.52              |
| 33:BA:1477:U:C2   | 33:BA:1478:U:C5   | 2.97                     | 0.52              |
| 34:BB:59:ILE:HD12 | 34:BB:60:ALA:N    | 2.25                     | 0.52              |
| 36:BD:89:LEU:O    | 36:BD:93:LEU:HG   | 2.09                     | 0.52              |
| 40:BH:26:MET:CB   | 40:BH:27:PRO:CD   | 2.87                     | 0.52              |
| 4:C3:4:LYS:HZ1    | 4:C3:60:CYS:N     | 2.08                     | 0.52              |
| 4:C3:30:HIS:O     | 4:C3:31:ILE:HG22  | 2.10                     | 0.52              |
| 7:CA:11:C:O2'     | 7:CA:12:C:H5'     | 2.09                     | 0.52              |
| 7:CA:66:A:C2      | 7:CA:108:A:C5     | 2.97                     | 0.52              |
| 8:CB:8:C:C4       | 8:CB:9:G:N7       | 2.78                     | 0.52              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:109:C:H2'     | 8:CB:110:G:C8     | 2.45                     | 0.52              |
| 8:CB:182:A:N3      | 8:CB:433:C:O2'    | 2.37                     | 0.52              |
| 8:CB:194:G:N3      | 8:CB:194:G:C2'    | 2.71                     | 0.52              |
| 8:CB:327:G:N2      | 8:CB:328:U:C2     | 2.78                     | 0.52              |
| 8:CB:372:G:C5      | 32:CZ:57:VAL:HG21 | 2.45                     | 0.52              |
| 8:CB:571:U:C4      | 8:CB:575:A:C6     | 2.98                     | 0.52              |
| 8:CB:794:A:O2'     | 8:CB:795:C:H5'    | 2.10                     | 0.52              |
| 8:CB:1139:G:C8     | 8:CB:1139:G:C5'   | 2.91                     | 0.52              |
| 8:CB:1336:A:H2'    | 8:CB:1336:A:N3    | 2.25                     | 0.52              |
| 8:CB:1420:A:C2     | 8:CB:2211:A:C8    | 2.94                     | 0.52              |
| 8:CB:1717:A:N6     | 8:CB:1743:G:H1'   | 2.25                     | 0.52              |
| 8:CB:1791:A:P      | 9:CC:211:ARG:HE   | 2.33                     | 0.52              |
| 8:CB:1807:G:H3'    | 8:CB:1807:G:C8    | 2.45                     | 0.52              |
| 8:CB:1988:G:C8     | 8:CB:1988:G:H3'   | 2.45                     | 0.52              |
| 8:CB:2050:C:N4     | 8:CB:2051:A:N1    | 2.58                     | 0.52              |
| 8:CB:2144:G:H3'    | 8:CB:2145:C:C5'   | 2.40                     | 0.52              |
| 8:CB:2508:G:N1     | 8:CB:2582:G:O6    | 2.43                     | 0.52              |
| 8:CB:2593:U:O4     | 9:CC:235:GLU:OE2  | 2.27                     | 0.52              |
| 8:CB:2633:G:H1'    | 10:CD:62:LYS:HG3  | 1.90                     | 0.52              |
| 8:CB:2675:A:C6     | 8:CB:2676:C:C2    | 2.98                     | 0.52              |
| 8:CB:2849:U:H4'    | 8:CB:2850:A:C5'   | 2.39                     | 0.52              |
| 10:CD:20:VAL:O     | 10:CD:22:ILE:N    | 2.43                     | 0.52              |
| 10:CD:40:LEU:O     | 10:CD:41:ALA:HB3  | 2.10                     | 0.52              |
| 10:CD:59:ARG:HD2   | 10:CD:60:VAL:CG2  | 2.33                     | 0.52              |
| 11:CE:175:ILE:HG23 | 11:CE:176:ASP:N   | 2.25                     | 0.52              |
| 11:CE:194:LYS:NZ   | 11:CE:194:LYS:HB2 | 2.25                     | 0.52              |
| 12:CF:97:GLU:HA    | 12:CF:100:GLU:OE1 | 2.10                     | 0.52              |
| 15:CI:18:ASN:N     | 15:CI:19:PRO:CD   | 2.73                     | 0.52              |
| 16:CJ:54:ILE:HG22  | 16:CJ:55:ILE:N    | 2.24                     | 0.52              |
| 16:CJ:72:LYS:HE3   | 16:CJ:74:TYR:OH   | 2.10                     | 0.52              |
| 16:CJ:112:GLY:HA2  | 16:CJ:116:ARG:NH2 | 2.25                     | 0.52              |
| 17:CK:112:PHE:O    | 17:CK:114:LYS:N   | 2.43                     | 0.52              |
| 23:CQ:72:GLY:O     | 23:CQ:73:ILE:O    | 2.28                     | 0.52              |
| 30:CX:20:ASN:N     | 30:CX:20:ASN:HD22 | 2.06                     | 0.52              |
| 33:DA:46:G:C4      | 33:DA:366:A:N7    | 2.78                     | 0.52              |
| 33:DA:380:G:C2     | 33:DA:384:G:C2    | 2.98                     | 0.52              |
| 33:DA:397:A:C5     | 33:DA:548:G:N7    | 2.78                     | 0.52              |
| 33:DA:516:U:H2'    | 33:DA:517:G:C8    | 2.45                     | 0.52              |
| 33:DA:663:A:C3'    | 33:DA:664:G:H5''  | 2.39                     | 0.52              |
| 33:DA:946:A:C2     | 33:DA:1236:A:N1   | 2.78                     | 0.52              |
| 33:DA:958:A:N1     | 51:DS:53:GLY:CA   | 2.70                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:975:A:C2    | 33:DA:1357:A:C2    | 2.93                     | 0.52              |
| 33:DA:1107:C:N4   | 55:DA:5223:HOH:O   | 2.42                     | 0.52              |
| 33:DA:1430:A:C2   | 33:DA:1471:U:N3    | 2.78                     | 0.52              |
| 33:DA:1446:A:C6   | 33:DA:1447:A:C5    | 2.98                     | 0.52              |
| 35:DC:116:ALA:HB2 | 35:DC:199:VAL:HG22 | 1.91                     | 0.52              |
| 37:DE:82:HIS:CE1  | 37:DE:146:MET:CG   | 2.88                     | 0.52              |
| 38:DF:26:THR:HB   | 38:DF:36:ILE:CD1   | 2.40                     | 0.52              |
| 39:DG:39:GLU:HA   | 39:DG:42:VAL:HG23  | 1.92                     | 0.52              |
| 49:DQ:10:ARG:NH2  | 49:DQ:11:VAL:HB    | 2.25                     | 0.52              |
| 50:DR:59:LYS:O    | 50:DR:60:ARG:C     | 2.48                     | 0.52              |
| 3:A2:16:HIS:NE2   | 8:AB:465:G:C1'     | 2.73                     | 0.51              |
| 4:A3:41:ARG:O     | 4:A3:43:LEU:N      | 2.43                     | 0.51              |
| 4:A3:61:LEU:HD11  | 8:AB:242:G:OP1     | 2.11                     | 0.51              |
| 7:AA:23:G:H2'     | 7:AA:24:G:C6       | 2.46                     | 0.51              |
| 7:AA:76:G:N3      | 7:AA:77:U:C6       | 2.78                     | 0.51              |
| 8:AB:271:G:N2     | 8:AB:272:A:C2      | 2.78                     | 0.51              |
| 8:AB:323:C:N3     | 8:AB:333:G:H8      | 2.03                     | 0.51              |
| 8:AB:326:G:H5'    | 8:AB:326:G:C8      | 2.32                     | 0.51              |
| 8:AB:390:U:H4'    | 8:AB:391:A:H5'     | 1.90                     | 0.51              |
| 8:AB:548:G:H5''   | 8:AB:549:G:C2      | 2.45                     | 0.51              |
| 8:AB:735:A:H3'    | 8:AB:736:C:H6      | 1.75                     | 0.51              |
| 8:AB:769:U:H5     | 55:AB:4369:HOH:O   | 1.93                     | 0.51              |
| 8:AB:1063:G:N1    | 8:AB:1076:C:N4     | 2.58                     | 0.51              |
| 8:AB:1094:U:O2    | 8:AB:1096:A:C8     | 2.62                     | 0.51              |
| 8:AB:1223:G:C6    | 8:AB:1227:G:N1     | 2.78                     | 0.51              |
| 8:AB:1230:A:H2'   | 8:AB:1231:U:H6     | 1.75                     | 0.51              |
| 8:AB:1528:A:C2'   | 8:AB:1529:G:H5'    | 2.40                     | 0.51              |
| 8:AB:1905:C:N4    | 8:AB:1930:G:C2     | 2.78                     | 0.51              |
| 8:AB:1997:C:O2'   | 8:AB:1998:A:C5'    | 2.58                     | 0.51              |
| 8:AB:2148:G:C6    | 8:AB:2149:U:C4     | 2.98                     | 0.51              |
| 8:AB:2204:G:C5    | 8:AB:2221:G:C2     | 2.97                     | 0.51              |
| 8:AB:2334:U:OP2   | 21:AO:7:ARG:HG2    | 2.11                     | 0.51              |
| 8:AB:2813:A:N6    | 8:AB:2814:A:N6     | 2.57                     | 0.51              |
| 10:AD:30:GLU:OE2  | 10:AD:51:THR:HG23  | 2.10                     | 0.51              |
| 10:AD:174:SER:O   | 10:AD:175:LEU:CB   | 2.57                     | 0.51              |
| 16:AJ:117:ALA:O   | 16:AJ:121:LYS:HD3  | 2.09                     | 0.51              |
| 17:AK:35:VAL:HG11 | 17:AK:69:VAL:HG22  | 1.90                     | 0.51              |
| 17:AK:48:PRO:C    | 17:AK:49:ARG:HD3   | 2.31                     | 0.51              |
| 18:AL:33:ARG:HH11 | 18:AL:33:ARG:H     | 1.59                     | 0.51              |
| 19:AM:6:ARG:O     | 19:AM:69:PRO:HG3   | 2.10                     | 0.51              |
| 19:AM:88:ASN:O    | 19:AM:90:GLU:N     | 2.43                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 21:AO:8:ILE:O     | 21:AO:10:ARG:N     | 2.43                     | 0.51              |
| 22:AP:13:LYS:HE2  | 22:AP:77:SER:HB3   | 1.92                     | 0.51              |
| 23:AQ:59:LEU:O    | 23:AQ:60:TRP:C     | 2.49                     | 0.51              |
| 23:AQ:78:PHE:CZ   | 23:AQ:82:LEU:HD11  | 2.44                     | 0.51              |
| 23:AQ:88:GLU:O    | 23:AQ:89:ILE:HB    | 2.11                     | 0.51              |
| 25:AS:85:ILE:CD1  | 25:AS:94:ASP:HB2   | 2.41                     | 0.51              |
| 26:AT:10:VAL:HG23 | 26:AT:11:LEU:HD12  | 1.90                     | 0.51              |
| 28:AV:28:ALA:HB3  | 28:AV:40:ILE:CG1   | 2.40                     | 0.51              |
| 29:AW:7:GLY:O     | 29:AW:8:SER:HB2    | 2.10                     | 0.51              |
| 29:AW:27:GLY:O    | 29:AW:28:GLU:HB3   | 2.09                     | 0.51              |
| 32:AZ:59:ARG:HG3  | 32:AZ:62:LYS:N     | 2.24                     | 0.51              |
| 33:BA:109:A:C2    | 33:BA:327:A:C2     | 2.99                     | 0.51              |
| 33:BA:375:U:OP1   | 48:BP:70:ARG:HD2   | 2.10                     | 0.51              |
| 33:BA:382:A:H2'   | 33:BA:383:A:C8     | 2.45                     | 0.51              |
| 33:BA:502:A:N1    | 33:BA:544:G:C6     | 2.78                     | 0.51              |
| 33:BA:504:C:H3'   | 33:BA:504:C:C6     | 2.46                     | 0.51              |
| 33:BA:523:A:H2    | 33:BA:527:G:O6     | 1.92                     | 0.51              |
| 33:BA:526:C:O5'   | 33:BA:526:C:H6     | 1.94                     | 0.51              |
| 33:BA:576:C:C3'   | 33:BA:577:G:H5''   | 2.33                     | 0.51              |
| 33:BA:720:C:H1'   | 50:BR:38:ILE:HD13  | 1.92                     | 0.51              |
| 33:BA:760:G:C8    | 33:BA:760:G:H3'    | 2.45                     | 0.51              |
| 33:BA:862:C:H2'   | 33:BA:863:U:C5'    | 2.35                     | 0.51              |
| 33:BA:1133:G:C2   | 33:BA:1134:G:C8    | 2.98                     | 0.51              |
| 33:BA:1288:A:N1   | 33:BA:1371:G:H1'   | 2.25                     | 0.51              |
| 33:BA:1361:G:H5'' | 33:BA:1361:G:H8    | 1.75                     | 0.51              |
| 33:BA:1439:G:C4   | 33:BA:1440:U:C6    | 2.98                     | 0.51              |
| 38:BF:29:ILE:HG21 | 38:BF:64:VAL:HG11  | 1.91                     | 0.51              |
| 41:BI:12:LYS:N    | 41:BI:109:GLN:HE22 | 1.99                     | 0.51              |
| 41:BI:39:GLY:CA   | 41:BI:44:ARG:HD3   | 2.28                     | 0.51              |
| 44:BL:20:VAL:HG13 | 44:BL:94:TYR:CE1   | 2.44                     | 0.51              |
| 46:BN:51:PRO:CB   | 46:BN:54:SER:HB3   | 2.37                     | 0.51              |
| 2:C1:52:LYS:HD2   | 2:C1:52:LYS:N      | 2.25                     | 0.51              |
| 4:C3:24:LYS:HG2   | 4:C3:45:PRO:HG3    | 1.91                     | 0.51              |
| 5:C4:34:LYS:C     | 5:C4:35:GLN:OE1    | 2.49                     | 0.51              |
| 7:CA:14:U:H4'     | 7:CA:70:C:O2       | 2.10                     | 0.51              |
| 8:CB:204:A:O5'    | 8:CB:204:A:C2'     | 2.57                     | 0.51              |
| 8:CB:243:U:O2'    | 8:CB:244:A:H5'     | 2.11                     | 0.51              |
| 8:CB:442:G:C4     | 8:CB:444:C:C5      | 2.98                     | 0.51              |
| 8:CB:465:G:O2'    | 8:CB:466:A:H5'     | 2.10                     | 0.51              |
| 8:CB:481:G:H1'    | 8:CB:507:A:N6      | 2.24                     | 0.51              |
| 8:CB:565:C:C4     | 8:CB:566:U:C4      | 2.98                     | 0.51              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 8:CB:600:G:H1'   | 11:CE:100:MET:CE  | 2.40                     | 0.51              |
| 8:CB:673:C:N3    | 8:CB:808:G:N2     | 2.57                     | 0.51              |
| 8:CB:788:A:OP1   | 8:CB:790:U:O4     | 2.27                     | 0.51              |
| 8:CB:807:U:C2'   | 8:CB:808:G:O5'    | 2.58                     | 0.51              |
| 8:CB:962:G:H21   | 19:CM:81:ARG:CD   | 2.18                     | 0.51              |
| 8:CB:1077:A:H2   | 8:CB:1088:A:C2    | 2.28                     | 0.51              |
| 8:CB:1150:C:C2   | 8:CB:1151:A:C8    | 2.98                     | 0.51              |
| 8:CB:1243:C:H2'  | 8:CB:1244:A:H8    | 1.75                     | 0.51              |
| 8:CB:1285:A:C8   | 8:CB:1285:A:C3'   | 2.93                     | 0.51              |
| 8:CB:1343:G:N3   | 8:CB:1384:A:H2    | 2.09                     | 0.51              |
| 8:CB:1499:C:H3'  | 8:CB:1499:C:C6    | 2.45                     | 0.51              |
| 8:CB:1787:A:H5'  | 8:CB:1787:A:C8    | 2.45                     | 0.51              |
| 8:CB:1900:A:C2   | 8:CB:1970:A:C5    | 2.99                     | 0.51              |
| 8:CB:1915:U:C2'  | 8:CB:1916:A:H5'   | 2.41                     | 0.51              |
| 8:CB:2519:U:C2   | 8:CB:2541:A:N1    | 2.78                     | 0.51              |
| 8:CB:2525:G:N2   | 8:CB:2539:C:N3    | 2.58                     | 0.51              |
| 9:CC:131:MET:O   | 9:CC:132:ARG:C    | 2.46                     | 0.51              |
| 12:CF:56:LEU:HA  | 12:CF:59:ILE:HB   | 1.92                     | 0.51              |
| 14:CH:12:LEU:O   | 14:CH:12:LEU:HD23 | 2.10                     | 0.51              |
| 15:CI:2:LYS:C    | 15:CI:3:LYS:HD2   | 2.31                     | 0.51              |
| 16:CJ:89:PHE:HD2 | 16:CJ:89:PHE:H    | 1.53                     | 0.51              |
| 19:CM:40:ARG:CZ  | 19:CM:92:TRP:CZ3  | 2.93                     | 0.51              |
| 20:CN:39:PRO:O   | 20:CN:40:LYS:C    | 2.49                     | 0.51              |
| 22:CP:8:GLU:HA   | 22:CP:11:GLN:CD   | 2.30                     | 0.51              |
| 22:CP:65:ASN:H   | 22:CP:71:ARG:HA   | 1.75                     | 0.51              |
| 22:CP:73:PHE:HE2 | 22:CP:75:THR:HG23 | 1.67                     | 0.51              |
| 32:CZ:44:PHE:O   | 32:CZ:45:THR:HB   | 2.09                     | 0.51              |
| 33:DA:378:G:N2   | 33:DA:386:C:C2    | 2.79                     | 0.51              |
| 33:DA:424:G:H8   | 33:DA:424:G:O5'   | 1.94                     | 0.51              |
| 33:DA:446:G:C2   | 33:DA:447:G:H1'   | 2.45                     | 0.51              |
| 33:DA:487:A:C5   | 33:DA:488:C:C2    | 2.98                     | 0.51              |
| 33:DA:506:G:H2'  | 33:DA:506:G:N3    | 2.25                     | 0.51              |
| 33:DA:580:C:H42  | 33:DA:761:G:H1    | 1.58                     | 0.51              |
| 33:DA:625:U:OP1  | 48:DP:9:HIS:HB3   | 2.08                     | 0.51              |
| 33:DA:633:G:H2'  | 33:DA:634:C:H6    | 1.75                     | 0.51              |
| 33:DA:717:U:H2'  | 33:DA:734:G:C8    | 2.45                     | 0.51              |
| 33:DA:737:C:C2'  | 33:DA:738:C:H5'   | 2.40                     | 0.51              |
| 33:DA:767:A:C2'  | 33:DA:768:A:H5'   | 2.40                     | 0.51              |
| 33:DA:882:C:N4   | 44:DL:1:ALA:HB2   | 2.24                     | 0.51              |
| 33:DA:1319:A:C6  | 33:DA:1323:G:H1'  | 2.44                     | 0.51              |
| 33:DA:1408:A:H1' | 33:DA:1494:G:N2   | 2.24                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:1494:G:H5'   | 33:DA:1494:G:C8    | 2.43                     | 0.51              |
| 34:DB:204:ASP:O    | 34:DB:205:ALA:HB3  | 2.09                     | 0.51              |
| 37:DE:125:LYS:HG3  | 37:DE:127:TYR:H    | 1.75                     | 0.51              |
| 39:DG:25:PHE:HE1   | 39:DG:104:VAL:HG22 | 1.75                     | 0.51              |
| 43:DK:109:ILE:HD13 | 53:DU:19:LYS:NZ    | 2.25                     | 0.51              |
| 44:DL:18:SER:C     | 44:DL:20:VAL:H     | 2.12                     | 0.51              |
| 44:DL:109:ARG:NH1  | 44:DL:116:TYR:CD1  | 2.77                     | 0.51              |
| 46:DN:82:LYS:HE2   | 46:DN:82:LYS:HA    | 1.91                     | 0.51              |
| 48:DP:38:PHE:CE2   | 48:DP:51:ARG:HB3   | 2.44                     | 0.51              |
| 50:DR:58:ILE:O     | 50:DR:62:ARG:HG3   | 2.10                     | 0.51              |
| 50:DR:61:ALA:C     | 50:DR:63:TYR:N     | 2.60                     | 0.51              |
| 51:DS:14:LEU:HD23  | 51:DS:34:SER:HB2   | 1.92                     | 0.51              |
| 51:DS:36:ARG:HG2   | 51:DS:36:ARG:NH1   | 2.25                     | 0.51              |
| 53:DU:52:VAL:CG1   | 53:DU:53:LYS:H     | 2.23                     | 0.51              |
| 1:A0:9:ARG:O       | 1:A0:12:ARG:HB2    | 2.10                     | 0.51              |
| 2:A1:26:LYS:CG     | 2:A1:29:LYS:HB2    | 2.40                     | 0.51              |
| 4:A3:29:ARG:CZ     | 8:AB:2393:U:OP1    | 2.59                     | 0.51              |
| 7:AA:30:C:N3       | 7:AA:31:C:O4'      | 2.43                     | 0.51              |
| 8:AB:236:C:O2'     | 8:AB:431:U:H4'     | 2.10                     | 0.51              |
| 8:AB:362:A:C5      | 8:AB:363:G:C8      | 2.98                     | 0.51              |
| 8:AB:368:A:C5      | 8:AB:369:U:C4      | 2.98                     | 0.51              |
| 8:AB:396:G:O2'     | 32:AZ:28:VAL:HB    | 2.10                     | 0.51              |
| 8:AB:400:G:H3'     | 8:AB:400:G:C8      | 2.45                     | 0.51              |
| 8:AB:465:G:N2      | 8:AB:683:U:O2      | 2.44                     | 0.51              |
| 8:AB:473:G:C2'     | 8:AB:474:G:H5'     | 2.40                     | 0.51              |
| 8:AB:538:A:C5      | 8:AB:539:G:N7      | 2.79                     | 0.51              |
| 8:AB:625:G:N2      | 8:AB:626:A:C2      | 2.78                     | 0.51              |
| 8:AB:677:A:O2'     | 8:AB:678:C:H5'     | 2.10                     | 0.51              |
| 8:AB:790:U:C5      | 8:AB:791:C:C5      | 2.99                     | 0.51              |
| 8:AB:1268:A:C5     | 8:AB:2013:A:N7     | 2.79                     | 0.51              |
| 8:AB:1433:A:C2     | 8:AB:1434:A:C5     | 2.98                     | 0.51              |
| 8:AB:1596:A:H2'    | 8:AB:1597:A:H5'    | 1.93                     | 0.51              |
| 8:AB:1819:A:H1'    | 8:AB:1821:A:C6     | 2.45                     | 0.51              |
| 8:AB:2058:A:H5'    | 8:AB:2059:A:OP2    | 2.11                     | 0.51              |
| 8:AB:2094:A:H2     | 8:AB:2196:C:C2     | 2.28                     | 0.51              |
| 8:AB:2146:C:O3'    | 8:AB:2147:A:H4'    | 2.10                     | 0.51              |
| 8:AB:2230:G:H2'    | 8:AB:2231:U:C5     | 2.44                     | 0.51              |
| 8:AB:2837:A:C5     | 8:AB:2838:G:N7     | 2.78                     | 0.51              |
| 8:AB:2842:G:H2'    | 8:AB:2842:G:N3     | 2.25                     | 0.51              |
| 9:AC:119:VAL:O     | 9:AC:120:ASP:C     | 2.48                     | 0.51              |
| 9:AC:168:GLY:O     | 9:AC:169:ALA:HB3   | 2.10                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AC:263:ASP:OD1   | 9:AC:263:ASP:C     | 2.49                     | 0.51              |
| 10:AD:111:GLY:CA   | 10:AD:194:PRO:HB2  | 2.39                     | 0.51              |
| 11:AE:122:GLU:O    | 11:AE:123:LYS:HB2  | 2.09                     | 0.51              |
| 12:AF:59:ILE:HD11  | 12:AF:137:PHE:HB2  | 1.92                     | 0.51              |
| 17:AK:49:ARG:HD3   | 17:AK:49:ARG:N     | 2.25                     | 0.51              |
| 17:AK:113:MET:C    | 17:AK:115:ILE:N    | 2.62                     | 0.51              |
| 18:AL:35:HIS:CE1   | 24:AR:83:TYR:O     | 2.62                     | 0.51              |
| 18:AL:39:LYS:HZ3   | 18:AL:46:VAL:HG13  | 1.75                     | 0.51              |
| 18:AL:77:ILE:HG23  | 18:AL:78:ARG:HG3   | 1.91                     | 0.51              |
| 19:AM:83:GLY:O     | 19:AM:85:GLY:N     | 2.43                     | 0.51              |
| 21:AO:28:VAL:HG22  | 21:AO:36:TYR:O     | 2.10                     | 0.51              |
| 21:AO:76:LYS:CB    | 21:AO:106:LEU:HD22 | 2.39                     | 0.51              |
| 27:AU:82:VAL:HG21  | 27:AU:95:PHE:O     | 2.10                     | 0.51              |
| 30:AX:46:VAL:C     | 30:AX:48:ARG:H     | 2.13                     | 0.51              |
| 33:BA:128:G:N2     | 33:BA:129:A:N3     | 2.58                     | 0.51              |
| 33:BA:279:A:C2     | 33:BA:281:G:N2     | 2.78                     | 0.51              |
| 33:BA:380:G:C2     | 33:BA:384:G:C6     | 2.97                     | 0.51              |
| 33:BA:390:U:O2     | 33:BA:391:G:C8     | 2.63                     | 0.51              |
| 33:BA:481:G:H3'    | 33:BA:481:G:H8     | 1.75                     | 0.51              |
| 33:BA:577:G:N9     | 33:BA:816:A:C2     | 2.78                     | 0.51              |
| 33:BA:603:U:C6     | 33:BA:603:U:C3'    | 2.93                     | 0.51              |
| 33:BA:671:G:H8     | 33:BA:671:G:H5''   | 1.74                     | 0.51              |
| 33:BA:805:C:H2'    | 33:BA:806:C:C6     | 2.45                     | 0.51              |
| 33:BA:1162:C:H6    | 33:BA:1162:C:H3'   | 1.74                     | 0.51              |
| 34:BB:66:ILE:H     | 34:BB:88:GLN:CB    | 2.24                     | 0.51              |
| 34:BB:86:CYS:O     | 34:BB:88:GLN:NE2   | 2.43                     | 0.51              |
| 35:BC:50:SER:O     | 35:BC:114:LEU:HD21 | 2.11                     | 0.51              |
| 35:BC:63:ILE:HD13  | 35:BC:94:ALA:CB    | 2.40                     | 0.51              |
| 35:BC:121:SER:O    | 35:BC:125:ARG:N    | 2.43                     | 0.51              |
| 36:BD:131:ILE:HG22 | 36:BD:131:ILE:O    | 2.09                     | 0.51              |
| 37:BE:14:LEU:CD2   | 37:BE:36:THR:HG22  | 2.39                     | 0.51              |
| 45:BM:77:LYS:HE3   | 45:BM:81:ASP:HB3   | 1.92                     | 0.51              |
| 49:BQ:66:LEU:HB2   | 49:BQ:70:LYS:HD3   | 1.92                     | 0.51              |
| 2:C1:40:PRO:HB2    | 2:C1:42:VAL:HG22   | 1.91                     | 0.51              |
| 4:C3:36:ALA:HB1    | 4:C3:39:ARG:HB2    | 1.92                     | 0.51              |
| 7:CA:46:A:C6       | 7:CA:47:C:C2       | 2.98                     | 0.51              |
| 7:CA:50:A:C4       | 7:CA:51:G:C8       | 2.98                     | 0.51              |
| 8:CB:86:G:C2       | 8:CB:97:C:N3       | 2.78                     | 0.51              |
| 8:CB:277:G:N3      | 8:CB:277:G:H2'     | 2.24                     | 0.51              |
| 8:CB:290:U:H2'     | 8:CB:291:G:C8      | 2.44                     | 0.51              |
| 8:CB:392:U:H2'     | 8:CB:393:C:H6      | 1.70                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:428:A:O2'    | 8:CB:429:A:H5'    | 2.11                     | 0.51              |
| 8:CB:615:U:C3'    | 8:CB:616:A:H5'    | 2.40                     | 0.51              |
| 8:CB:647:G:H5'    | 8:CB:648:G:OP2    | 2.10                     | 0.51              |
| 8:CB:691:C:O4'    | 9:CC:42:ARG:NH1   | 2.44                     | 0.51              |
| 8:CB:736:C:H2'    | 8:CB:737:C:C6     | 2.45                     | 0.51              |
| 8:CB:773:U:O2     | 8:CB:773:U:C2'    | 2.58                     | 0.51              |
| 8:CB:808:G:H8     | 8:CB:808:G:C5'    | 2.22                     | 0.51              |
| 8:CB:861:A:N6     | 8:CB:862:G:C2     | 2.79                     | 0.51              |
| 8:CB:1008:A:N6    | 8:CB:1136:G:H1    | 2.08                     | 0.51              |
| 8:CB:1022:G:C5    | 8:CB:1140:C:C4    | 2.99                     | 0.51              |
| 8:CB:1092:C:H2'   | 8:CB:1093:G:C8    | 2.42                     | 0.51              |
| 8:CB:1107:G:C2'   | 8:CB:1108:U:H5'   | 2.40                     | 0.51              |
| 8:CB:1205:A:C4'   | 8:CB:1206:G:OP2   | 2.52                     | 0.51              |
| 8:CB:1355:G:C2    | 8:CB:1356:G:N7    | 2.78                     | 0.51              |
| 8:CB:1584:U:H3'   | 8:CB:1585:C:H5'   | 1.91                     | 0.51              |
| 8:CB:1797:G:O3'   | 9:CC:253:GLY:CA   | 2.58                     | 0.51              |
| 8:CB:1814:G:H3'   | 8:CB:1815:A:C5'   | 2.39                     | 0.51              |
| 8:CB:2031:A:C8    | 8:CB:2031:A:C5'   | 2.88                     | 0.51              |
| 8:CB:2407:A:C5    | 8:CB:2408:U:O4    | 2.64                     | 0.51              |
| 8:CB:2744:G:C6    | 8:CB:2745:C:C5    | 2.98                     | 0.51              |
| 8:CB:2779:U:C5    | 8:CB:2781:A:C2    | 2.99                     | 0.51              |
| 8:CB:2841:C:N3    | 8:CB:2877:G:C2    | 2.78                     | 0.51              |
| 9:CC:12:ARG:HH11  | 9:CC:18:VAL:CG2   | 2.17                     | 0.51              |
| 9:CC:257:ARG:HB3  | 9:CC:261:ARG:CZ   | 2.40                     | 0.51              |
| 10:CD:37:VAL:CG1  | 10:CD:38:LYS:N    | 2.72                     | 0.51              |
| 11:CE:83:VAL:O    | 11:CE:83:VAL:HG23 | 2.10                     | 0.51              |
| 11:CE:90:GLN:HG3  | 11:CE:92:HIS:CD2  | 2.45                     | 0.51              |
| 16:CJ:41:LYS:HZ2  | 16:CJ:46:PRO:HG3  | 1.73                     | 0.51              |
| 16:CJ:128:ASN:O   | 16:CJ:130:HIS:HB2 | 2.10                     | 0.51              |
| 17:CK:54:LYS:HD3  | 17:CK:54:LYS:H    | 1.75                     | 0.51              |
| 22:CP:79:VAL:O    | 22:CP:81:ASP:N    | 2.41                     | 0.51              |
| 22:CP:84:SER:O    | 22:CP:85:VAL:C    | 2.48                     | 0.51              |
| 24:CR:4:VAL:HG23  | 24:CR:5:PHE:H     | 1.75                     | 0.51              |
| 28:CV:70:ILE:HD13 | 28:CV:70:ILE:N    | 2.22                     | 0.51              |
| 30:CX:16:THR:C    | 30:CX:18:LEU:H    | 2.13                     | 0.51              |
| 30:CX:41:HIS:NE2  | 30:CX:43:LEU:HB2  | 2.24                     | 0.51              |
| 31:CY:13:ILE:HD13 | 31:CY:13:ILE:H    | 1.74                     | 0.51              |
| 33:DA:9:G:C8      | 33:DA:10:A:N7     | 2.79                     | 0.51              |
| 33:DA:36:C:H5''   | 44:DL:119:LYS:HD3 | 1.92                     | 0.51              |
| 33:DA:61:G:C2     | 33:DA:62:U:O2     | 2.62                     | 0.51              |
| 33:DA:219:U:N3    | 33:DA:220:G:C8    | 2.78                     | 0.51              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:DA:343:U:O2'  | 33:DA:344:A:H2'    | 2.10                     | 0.51              |
| 33:DA:671:G:C2   | 33:DA:672:U:N1     | 2.78                     | 0.51              |
| 33:DA:720:C:H5'' | 33:DA:721:G:H2'    | 1.92                     | 0.51              |
| 33:DA:946:A:C2   | 33:DA:947:G:N7     | 2.79                     | 0.51              |
| 33:DA:1129:C:O2' | 33:DA:1130:A:N7    | 2.40                     | 0.51              |
| 33:DA:1385:G:H2' | 33:DA:1386:G:O4'   | 2.10                     | 0.51              |
| 33:DA:1399:C:H4' | 33:DA:1400:C:H5'   | 1.91                     | 0.51              |
| 33:DA:1444:U:C4  | 33:DA:1445:U:C5    | 2.99                     | 0.51              |
| 36:DD:203:TYR:O  | 36:DD:204:SER:HB3  | 2.11                     | 0.51              |
| 38:DF:8:PHE:CZ   | 38:DF:60:VAL:HG21  | 2.45                     | 0.51              |
| 39:DG:101:ARG:O  | 39:DG:105:GLU:HB2  | 2.09                     | 0.51              |
| 43:DK:17:ASP:N   | 43:DK:17:ASP:OD1   | 2.43                     | 0.51              |
| 44:DL:65:TYR:CB  | 44:DL:95:HIS:HD2   | 2.17                     | 0.51              |
| 50:DR:24:ASP:O   | 50:DR:26:ALA:N     | 2.42                     | 0.51              |
| 51:DS:40:PHE:HB2 | 51:DS:43:MET:HE3   | 1.91                     | 0.51              |
| 52:DT:35:TYR:CE1 | 52:DT:39:GLU:HG3   | 2.45                     | 0.51              |
| 52:DT:67:HIS:O   | 52:DT:68:LYS:HB2   | 2.10                     | 0.51              |
| 3:A2:12:ARG:CG   | 8:AB:686:U:H3      | 2.24                     | 0.51              |
| 5:A4:8:LYS:HE3   | 8:AB:2467:C:OP1    | 2.10                     | 0.51              |
| 7:AA:38:C:O2     | 7:AA:48:U:H1'      | 2.10                     | 0.51              |
| 8:AB:85:G:C6     | 8:AB:98:G:C2       | 2.99                     | 0.51              |
| 8:AB:217:A:C5    | 8:AB:218:A:C8      | 2.98                     | 0.51              |
| 8:AB:343:C:C5'   | 8:AB:344:A:OP2     | 2.58                     | 0.51              |
| 8:AB:371:A:H8    | 8:AB:373:U:C2      | 2.23                     | 0.51              |
| 8:AB:488:G:H4'   | 25:AS:49:LYS:HD2   | 1.92                     | 0.51              |
| 8:AB:616:A:H2'   | 8:AB:617:G:H8      | 1.68                     | 0.51              |
| 8:AB:751:A:C4'   | 25:AS:90:LYS:HE2   | 2.41                     | 0.51              |
| 8:AB:912:C:O2'   | 8:AB:913:U:H5'     | 2.10                     | 0.51              |
| 8:AB:973:A:C8    | 8:AB:1188:U:N3     | 2.79                     | 0.51              |
| 8:AB:1008:A:H4'  | 8:AB:1009:A:OP1    | 2.10                     | 0.51              |
| 8:AB:1095:A:C6   | 8:AB:1096:A:N6     | 2.78                     | 0.51              |
| 8:AB:1613:G:H3'  | 8:AB:1614:A:H5'    | 1.92                     | 0.51              |
| 8:AB:1710:G:C2   | 8:AB:1749:A:N3     | 2.78                     | 0.51              |
| 8:AB:2574:G:H2'  | 8:AB:2575:C:C6     | 2.44                     | 0.51              |
| 8:AB:2606:C:C2'  | 8:AB:2607:G:H5'    | 2.40                     | 0.51              |
| 8:AB:2684:U:H6   | 8:AB:2684:U:H3'    | 1.75                     | 0.51              |
| 8:AB:2733:A:C2   | 10:AD:209:ALA:O    | 2.62                     | 0.51              |
| 8:AB:2821:A:C8   | 8:AB:2821:A:C3'    | 2.93                     | 0.51              |
| 9:AC:32:LEU:N    | 9:AC:32:LEU:HD12   | 2.26                     | 0.51              |
| 9:AC:140:VAL:C   | 9:AC:193:GLU:HB2   | 2.29                     | 0.51              |
| 11:AE:118:LEU:C  | 11:AE:119:ILE:HD13 | 2.30                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AE:165:HIS:CD2 | 11:AE:165:HIS:O    | 2.64                     | 0.51              |
| 11:AE:193:VAL:C   | 11:AE:195:GLN:H    | 2.12                     | 0.51              |
| 12:AF:35:LEU:HD12 | 12:AF:56:LEU:HD21  | 1.92                     | 0.51              |
| 13:AG:6:ALA:N     | 13:AG:7:PRO:HD2    | 2.25                     | 0.51              |
| 16:AJ:64:VAL:HG12 | 16:AJ:68:LYS:HB2   | 1.92                     | 0.51              |
| 19:AM:7:THR:HG21  | 19:AM:10:ARG:NH1   | 2.25                     | 0.51              |
| 19:AM:50:ARG:CA   | 19:AM:50:ARG:NE    | 2.73                     | 0.51              |
| 19:AM:108:VAL:O   | 19:AM:112:LEU:CG   | 2.53                     | 0.51              |
| 20:AN:103:ARG:HG2 | 20:AN:103:ARG:NH1  | 2.26                     | 0.51              |
| 21:AO:12:THR:C    | 21:AO:14:ALA:H     | 2.13                     | 0.51              |
| 21:AO:98:GLN:CD   | 21:AO:99:TYR:H     | 2.13                     | 0.51              |
| 22:AP:5:LYS:HD2   | 22:AP:5:LYS:N      | 2.25                     | 0.51              |
| 22:AP:24:THR:O    | 22:AP:26:GLU:HG3   | 2.10                     | 0.51              |
| 23:AQ:101:ASP:O   | 23:AQ:104:ALA:HB3  | 2.10                     | 0.51              |
| 27:AU:59:GLU:O    | 27:AU:60:LYS:HB2   | 2.09                     | 0.51              |
| 28:AV:70:ILE:CG1  | 28:AV:71:LYS:N     | 2.72                     | 0.51              |
| 32:AZ:17:SER:HB3  | 32:AZ:20:ASN:C     | 2.30                     | 0.51              |
| 33:BA:511:C:N3    | 33:BA:512:U:C5     | 2.79                     | 0.51              |
| 33:BA:603:U:C5    | 33:BA:604:G:N7     | 2.78                     | 0.51              |
| 33:BA:865:A:N3    | 33:BA:918:A:H1'    | 2.25                     | 0.51              |
| 33:BA:872:A:C4'   | 33:BA:873:A:OP1    | 2.44                     | 0.51              |
| 33:BA:885:G:H8    | 33:BA:885:G:P      | 2.32                     | 0.51              |
| 33:BA:1017:U:H6   | 33:BA:1017:U:H5''  | 1.75                     | 0.51              |
| 33:BA:1072:G:C5   | 33:BA:1073:U:C5    | 2.98                     | 0.51              |
| 33:BA:1205:U:H1'  | 35:BC:194:VAL:HG22 | 1.92                     | 0.51              |
| 33:BA:1372:U:OP1  | 41:BI:72:SER:HB3   | 2.11                     | 0.51              |
| 34:BB:166:ASP:O   | 34:BB:169:HIS:CD2  | 2.63                     | 0.51              |
| 36:BD:120:LYS:O   | 36:BD:145:ARG:NH2  | 2.43                     | 0.51              |
| 37:BE:113:VAL:O   | 37:BE:114:LEU:CG   | 2.56                     | 0.51              |
| 39:BG:90:VAL:HB   | 39:BG:94:ARG:HD2   | 1.93                     | 0.51              |
| 40:BH:39:LEU:HB3  | 40:BH:45:ILE:CG2   | 2.41                     | 0.51              |
| 48:BP:18:GLN:HE21 | 48:BP:35:ARG:CD    | 2.16                     | 0.51              |
| 51:BS:15:LEU:C    | 51:BS:17:LYS:H     | 2.12                     | 0.51              |
| 53:BU:14:ALA:CA   | 53:BU:16:ARG:HE    | 2.23                     | 0.51              |
| 2:C1:37:LYS:HB2   | 8:CB:2344:U:H3'    | 1.90                     | 0.51              |
| 4:C3:12:ARG:O     | 4:C3:13:PHE:CD1    | 2.63                     | 0.51              |
| 7:CA:111:U:O2'    | 7:CA:112:G:H5'     | 2.11                     | 0.51              |
| 8:CB:80:G:C2      | 8:CB:81:G:C8       | 2.98                     | 0.51              |
| 8:CB:217:A:C5     | 8:CB:218:A:C8      | 2.99                     | 0.51              |
| 8:CB:323:C:C1'    | 11:CE:164:LEU:HB2  | 2.34                     | 0.51              |
| 8:CB:345:A:C2     | 8:CB:347:A:N6      | 2.78                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:410:G:H2'     | 8:CB:2407:A:C8     | 2.45                     | 0.51              |
| 8:CB:482:A:N7      | 8:CB:506:G:C6      | 2.79                     | 0.51              |
| 8:CB:518:G:H5''    | 8:CB:518:G:H8      | 1.74                     | 0.51              |
| 8:CB:647:G:O6      | 8:CB:648:G:C6      | 2.63                     | 0.51              |
| 8:CB:687:C:H2'     | 8:CB:688:U:O4'     | 2.10                     | 0.51              |
| 8:CB:841:G:C2      | 8:CB:842:U:C2      | 2.98                     | 0.51              |
| 8:CB:953:G:N2      | 8:CB:964:C:O2      | 2.42                     | 0.51              |
| 8:CB:980:A:N7      | 8:CB:1136:G:C5'    | 2.73                     | 0.51              |
| 8:CB:1116:G:O5'    | 8:CB:1116:G:H8     | 1.94                     | 0.51              |
| 8:CB:1204:A:N1     | 8:CB:1241:A:C2     | 2.79                     | 0.51              |
| 8:CB:1235:G:C5'    | 8:CB:1236:G:OP2    | 2.59                     | 0.51              |
| 8:CB:1567:G:H5''   | 8:CB:1567:G:H8     | 1.74                     | 0.51              |
| 8:CB:1672:A:N1     | 8:CB:1673:G:C5     | 2.78                     | 0.51              |
| 8:CB:1795:C:N3     | 8:CB:1824:G:O6     | 2.43                     | 0.51              |
| 8:CB:1975:G:C5     | 8:CB:1976:U:C5     | 2.98                     | 0.51              |
| 8:CB:2061:G:C2     | 8:CB:2063:C:C4     | 2.99                     | 0.51              |
| 8:CB:2076:U:H3'    | 8:CB:2076:U:C2     | 2.44                     | 0.51              |
| 8:CB:2231:U:P      | 32:CZ:28:VAL:HG23  | 2.50                     | 0.51              |
| 8:CB:2250:G:C6     | 19:CM:82:MET:CG    | 2.91                     | 0.51              |
| 8:CB:2384:U:H3'    | 8:CB:2385:C:H5'    | 1.93                     | 0.51              |
| 8:CB:2603:G:C6     | 8:CB:2604:U:C4     | 2.98                     | 0.51              |
| 8:CB:2840:C:C4     | 8:CB:2841:C:N4     | 2.78                     | 0.51              |
| 9:CC:9:SER:HB2     | 9:CC:22:GLU:OE1    | 2.10                     | 0.51              |
| 9:CC:163:ILE:O     | 9:CC:164:VAL:HG22  | 2.10                     | 0.51              |
| 10:CD:140:HIS:O    | 10:CD:141:ARG:CG   | 2.58                     | 0.51              |
| 11:CE:157:LEU:HG   | 11:CE:157:LEU:O    | 2.09                     | 0.51              |
| 13:CG:151:ARG:O    | 13:CG:161:VAL:HG12 | 2.11                     | 0.51              |
| 16:CJ:41:LYS:CD    | 16:CJ:44:TYR:HB3   | 2.36                     | 0.51              |
| 16:CJ:128:ASN:HD22 | 16:CJ:128:ASN:N    | 2.05                     | 0.51              |
| 17:CK:82:ASN:H     | 17:CK:82:ASN:ND2   | 2.04                     | 0.51              |
| 19:CM:5:LYS:NZ     | 19:CM:8:LYS:CB     | 2.74                     | 0.51              |
| 19:CM:127:LYS:HD3  | 19:CM:128:THR:N    | 2.24                     | 0.51              |
| 20:CN:8:ARG:NH2    | 20:CN:46:ARG:CG    | 2.70                     | 0.51              |
| 21:CO:39:VAL:HG13  | 21:CO:48:LEU:C     | 2.31                     | 0.51              |
| 22:CP:21:PRO:O     | 22:CP:97:TYR:HE2   | 1.93                     | 0.51              |
| 22:CP:62:LYS:HA    | 22:CP:74:GLN:CD    | 2.29                     | 0.51              |
| 26:CT:23:ALA:C     | 26:CT:25:GLU:H     | 2.13                     | 0.51              |
| 31:CY:16:LEU:HB2   | 31:CY:19:HIS:HD2   | 1.75                     | 0.51              |
| 33:DA:98:A:O5'     | 33:DA:98:A:H8      | 1.92                     | 0.51              |
| 33:DA:219:U:C2'    | 33:DA:220:G:H5'    | 2.39                     | 0.51              |
| 33:DA:244:U:C6     | 33:DA:244:U:C5'    | 2.93                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:338:A:C5    | 33:DA:339:C:C5     | 2.99                     | 0.51              |
| 33:DA:389:A:H3'   | 33:DA:390:U:H6     | 1.76                     | 0.51              |
| 33:DA:755:G:H5''  | 33:DA:756:C:OP2    | 2.10                     | 0.51              |
| 33:DA:896:C:C2    | 33:DA:897:C:C5     | 2.97                     | 0.51              |
| 33:DA:904:U:C4    | 33:DA:905:U:O4     | 2.63                     | 0.51              |
| 33:DA:954:G:C2    | 33:DA:955:U:O2     | 2.63                     | 0.51              |
| 33:DA:986:U:H1'   | 51:DS:54:ARG:HA    | 1.91                     | 0.51              |
| 33:DA:1003:G:H21  | 33:DA:1005:A:H5''  | 1.75                     | 0.51              |
| 33:DA:1244:G:C6   | 33:DA:1245:C:C4    | 2.99                     | 0.51              |
| 33:DA:1316:G:N2   | 33:DA:1319:A:C8    | 2.79                     | 0.51              |
| 33:DA:1386:G:C2   | 33:DA:1387:G:N7    | 2.78                     | 0.51              |
| 33:DA:1410:A:C5   | 33:DA:1411:C:C4    | 2.99                     | 0.51              |
| 33:DA:1420:U:O2'  | 33:DA:1421:G:H5'   | 2.10                     | 0.51              |
| 33:DA:1468:A:C6   | 33:DA:1469:C:C4    | 2.98                     | 0.51              |
| 34:DB:79:VAL:HG21 | 34:DB:92:ASN:CB    | 2.40                     | 0.51              |
| 37:DE:37:VAL:CG2  | 37:DE:113:VAL:HG12 | 2.40                     | 0.51              |
| 38:DF:92:THR:C    | 38:DF:94:HIS:N     | 2.61                     | 0.51              |
| 40:DH:81:GLY:O    | 40:DH:82:LEU:HB2   | 2.09                     | 0.51              |
| 40:DH:84:ILE:HG22 | 40:DH:84:ILE:O     | 2.09                     | 0.51              |
| 42:DJ:81:GLU:OE1  | 42:DJ:84:VAL:HG21  | 2.10                     | 0.51              |
| 43:DK:95:THR:HG23 | 43:DK:96:ILE:H     | 1.74                     | 0.51              |
| 3:A2:27:GLY:O     | 3:A2:28:ARG:C      | 2.49                     | 0.51              |
| 7:AA:38:C:H3'     | 7:AA:38:C:H6       | 1.76                     | 0.51              |
| 7:AA:79:G:H2'     | 7:AA:80:U:O4'      | 2.10                     | 0.51              |
| 8:AB:74:A:N7      | 8:AB:88:G:O6       | 2.43                     | 0.51              |
| 8:AB:139:U:OP2    | 8:AB:140:C:C4      | 2.63                     | 0.51              |
| 8:AB:245:G:C8     | 8:AB:245:G:H3'     | 2.45                     | 0.51              |
| 8:AB:329:G:H1     | 27:AU:16:LYS:NZ    | 2.08                     | 0.51              |
| 8:AB:347:A:H2'    | 8:AB:348:A:C5'     | 2.39                     | 0.51              |
| 8:AB:398:C:H5''   | 32:AZ:49:ARG:NH1   | 2.25                     | 0.51              |
| 8:AB:449:A:C3'    | 8:AB:450:G:H5'     | 2.41                     | 0.51              |
| 8:AB:579:G:N2     | 8:AB:1262:A:H1'    | 2.26                     | 0.51              |
| 8:AB:699:A:C2'    | 8:AB:700:G:O5'     | 2.59                     | 0.51              |
| 8:AB:877:A:H5''   | 8:AB:877:A:H8      | 1.75                     | 0.51              |
| 8:AB:993:G:N1     | 8:AB:994:C:H5      | 2.09                     | 0.51              |
| 8:AB:1199:U:N3    | 8:AB:1247:A:H2     | 2.08                     | 0.51              |
| 8:AB:1220:G:C6    | 8:AB:1230:A:C6     | 2.98                     | 0.51              |
| 8:AB:1807:G:H3'   | 8:AB:1807:G:C8     | 2.44                     | 0.51              |
| 8:AB:1821:A:C2    | 8:AB:1822:C:C4     | 2.98                     | 0.51              |
| 8:AB:1855:U:C5    | 8:AB:1856:U:C5     | 2.98                     | 0.51              |
| 8:AB:1960:A:N6    | 8:AB:1961:C:N4     | 2.58                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1970:A:H5''  | 8:AB:1970:A:C8     | 2.44                     | 0.51              |
| 8:AB:2244:U:O2    | 8:AB:2245:U:C6     | 2.64                     | 0.51              |
| 8:AB:2263:C:H2'   | 8:AB:2264:C:C6     | 2.38                     | 0.51              |
| 8:AB:2303:G:N1    | 8:AB:2304:G:C8     | 2.79                     | 0.51              |
| 8:AB:2464:G:C6    | 8:AB:2487:G:C6     | 2.99                     | 0.51              |
| 8:AB:2495:G:C6    | 8:AB:2496:C:C4     | 2.98                     | 0.51              |
| 8:AB:2569:G:C2    | 8:AB:2570:G:N7     | 2.78                     | 0.51              |
| 8:AB:2575:C:H5''  | 8:AB:2576:G:OP2    | 2.10                     | 0.51              |
| 8:AB:2620:C:P     | 10:AD:157:LYS:HG2  | 2.50                     | 0.51              |
| 8:AB:2788:C:C2    | 8:AB:2789:C:C5     | 2.99                     | 0.51              |
| 8:AB:2853:C:O2'   | 8:AB:2854:G:H5'    | 2.10                     | 0.51              |
| 8:AB:2889:C:N4    | 8:AB:2890:G:N1     | 2.58                     | 0.51              |
| 9:AC:86:ARG:HB3   | 9:AC:86:ARG:CZ     | 2.39                     | 0.51              |
| 9:AC:243:PRO:CB   | 9:AC:248:GLY:H     | 2.23                     | 0.51              |
| 11:AE:186:VAL:O   | 11:AE:186:VAL:HG12 | 2.11                     | 0.51              |
| 13:AG:45:ALA:HB3  | 13:AG:48:THR:HG23  | 1.91                     | 0.51              |
| 14:AH:67:ALA:HB3  | 14:AH:71:LYS:HE2   | 1.92                     | 0.51              |
| 17:AK:78:ARG:NH2  | 22:AP:102:ARG:NH1  | 2.54                     | 0.51              |
| 18:AL:118:THR:HA  | 18:AL:137:ALA:O    | 2.10                     | 0.51              |
| 19:AM:9:PHE:HE1   | 19:AM:11:LYS:NZ    | 2.08                     | 0.51              |
| 19:AM:30:SER:O    | 19:AM:31:PHE:CB    | 2.58                     | 0.51              |
| 19:AM:47:GLU:HA   | 19:AM:50:ARG:CB    | 2.40                     | 0.51              |
| 19:AM:47:GLU:HG3  | 19:AM:47:GLU:O     | 2.09                     | 0.51              |
| 22:AP:21:PRO:O    | 22:AP:97:TYR:HE2   | 1.93                     | 0.51              |
| 28:AV:70:ILE:HG12 | 28:AV:71:LYS:N     | 2.24                     | 0.51              |
| 33:BA:13:U:C5     | 33:BA:21:G:N2      | 2.78                     | 0.51              |
| 33:BA:153:C:O2'   | 33:BA:154:U:H5'    | 2.10                     | 0.51              |
| 33:BA:275:G:C2    | 33:BA:276:G:C5     | 2.98                     | 0.51              |
| 33:BA:404:G:C6    | 36:BD:1:ALA:N      | 2.78                     | 0.51              |
| 33:BA:406:G:H5''  | 33:BA:406:G:H8     | 1.75                     | 0.51              |
| 33:BA:575:G:OP1   | 33:BA:575:G:H4'    | 2.09                     | 0.51              |
| 33:BA:790:A:N6    | 33:BA:791:G:N1     | 2.58                     | 0.51              |
| 33:BA:875:U:H3'   | 33:BA:875:U:C6     | 2.45                     | 0.51              |
| 33:BA:905:U:C5    | 33:BA:906:A:C8     | 2.98                     | 0.51              |
| 33:BA:907:A:C2'   | 33:BA:908:A:H5'    | 2.41                     | 0.51              |
| 33:BA:1195:C:C2   | 33:BA:1197:A:C8    | 2.99                     | 0.51              |
| 33:BA:1221:G:H5'  | 51:BS:35:ARG:NH2   | 2.26                     | 0.51              |
| 33:BA:1319:A:OP2  | 51:BS:4:LEU:HG     | 2.10                     | 0.51              |
| 33:BA:1365:G:C6   | 33:BA:1366:C:N3    | 2.79                     | 0.51              |
| 33:BA:1506:U:O2'  | 33:BA:1507:A:H5'   | 2.11                     | 0.51              |
| 33:BA:1526:G:C8   | 33:BA:1526:G:C3'   | 2.93                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:BB:15:PHE:O    | 34:BB:40:ILE:HG13 | 2.11                     | 0.51              |
| 34:BB:40:ILE:HG21 | 34:BB:200:PRO:HB2 | 1.93                     | 0.51              |
| 37:BE:55:VAL:N    | 37:BE:56:PRO:CD   | 2.72                     | 0.51              |
| 37:BE:151:MET:C   | 37:BE:155:LYS:CB  | 2.79                     | 0.51              |
| 38:BF:89:VAL:O    | 38:BF:89:VAL:HG13 | 2.11                     | 0.51              |
| 39:BG:11:ILE:HG21 | 39:BG:27:ASN:HD21 | 1.75                     | 0.51              |
| 42:BJ:16:ARG:O    | 42:BJ:17:LEU:HD22 | 2.09                     | 0.51              |
| 44:BL:55:ARG:C    | 44:BL:56:LEU:HD23 | 2.30                     | 0.51              |
| 50:BR:33:THR:OG1  | 50:BR:34:GLU:N    | 2.42                     | 0.51              |
| 53:BU:11:PHE:O    | 53:BU:12:ASP:C    | 2.49                     | 0.51              |
| 3:C2:42:LEU:HD11  | 8:CB:127:A:N6     | 2.25                     | 0.51              |
| 8:CB:8:C:N4       | 8:CB:9:G:C5       | 2.79                     | 0.51              |
| 8:CB:141:G:N3     | 8:CB:141:G:C5'    | 2.73                     | 0.51              |
| 8:CB:199:A:H1'    | 32:CZ:20:ASN:HB2  | 1.92                     | 0.51              |
| 8:CB:230:G:C2     | 8:CB:231:A:C4     | 2.99                     | 0.51              |
| 8:CB:327:G:N2     | 8:CB:328:U:O2     | 2.42                     | 0.51              |
| 8:CB:540:C:C2     | 8:CB:541:A:N7     | 2.79                     | 0.51              |
| 8:CB:597:G:C2     | 8:CB:661:A:N3     | 2.77                     | 0.51              |
| 8:CB:867:C:C6     | 8:CB:867:C:C3'    | 2.93                     | 0.51              |
| 8:CB:1193:G:N2    | 8:CB:1194:A:N3    | 2.58                     | 0.51              |
| 8:CB:1348:C:H5''  | 8:CB:1348:C:C6    | 2.46                     | 0.51              |
| 8:CB:1486:U:O2    | 8:CB:1504:A:C2    | 2.64                     | 0.51              |
| 8:CB:1509:A:H5''  | 8:CB:1509:A:C8    | 2.46                     | 0.51              |
| 8:CB:1598:A:C2    | 8:CB:1599:U:C6    | 2.98                     | 0.51              |
| 8:CB:2231:U:O2    | 8:CB:2232:C:C6    | 2.64                     | 0.51              |
| 8:CB:2250:G:O6    | 19:CM:82:MET:HG3  | 2.08                     | 0.51              |
| 8:CB:2345:G:C4    | 8:CB:2381:A:N3    | 2.78                     | 0.51              |
| 8:CB:2355:G:O3'   | 29:CW:20:LEU:HD22 | 2.10                     | 0.51              |
| 8:CB:2358:A:C8    | 8:CB:2358:A:C5'   | 2.92                     | 0.51              |
| 8:CB:2396:G:C2'   | 8:CB:2397:G:H5'   | 2.40                     | 0.51              |
| 8:CB:2520:C:H2'   | 8:CB:2521:C:H5'   | 1.92                     | 0.51              |
| 8:CB:2710:C:O2'   | 8:CB:2711:A:H5'   | 2.10                     | 0.51              |
| 9:CC:153:LEU:O    | 9:CC:153:LEU:HD23 | 2.09                     | 0.51              |
| 11:CE:58:LYS:HZ1  | 11:CE:62:GLN:CA   | 2.23                     | 0.51              |
| 16:CJ:44:TYR:O    | 16:CJ:45:THR:HB   | 2.11                     | 0.51              |
| 16:CJ:130:HIS:O   | 16:CJ:132:HIS:N   | 2.44                     | 0.51              |
| 17:CK:7:MET:SD    | 17:CK:20:MET:HB3  | 2.50                     | 0.51              |
| 17:CK:87:LEU:HD23 | 17:CK:87:LEU:N    | 2.26                     | 0.51              |
| 19:CM:2:LEU:HD22  | 19:CM:47:GLU:OE1  | 2.11                     | 0.51              |
| 20:CN:87:PHE:CB   | 20:CN:94:TYR:CZ   | 2.93                     | 0.51              |
| 20:CN:115:LEU:H   | 20:CN:115:LEU:CD2 | 2.18                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:CO:78:VAL:HA   | 21:CO:81:ARG:HB2  | 1.92                     | 0.51              |
| 23:CQ:40:LYS:CD   | 23:CQ:44:TYR:HB2  | 2.41                     | 0.51              |
| 23:CQ:113:LYS:C   | 23:CQ:115:ALA:N   | 2.63                     | 0.51              |
| 24:CR:25:LEU:C    | 24:CR:27:ILE:N    | 2.63                     | 0.51              |
| 24:CR:74:ILE:HG13 | 24:CR:76:LYS:CD   | 2.40                     | 0.51              |
| 27:CU:44:HIS:HB2  | 27:CU:46:LYS:HZ1  | 1.74                     | 0.51              |
| 30:CX:1:MET:H3    | 30:CX:6:LEU:HB3   | 1.75                     | 0.51              |
| 31:CY:19:HIS:O    | 31:CY:22:THR:N    | 2.43                     | 0.51              |
| 32:CZ:58:ASP:C    | 32:CZ:59:ARG:HD3  | 2.30                     | 0.51              |
| 33:DA:33:A:H1'    | 44:DL:28:GLN:HE22 | 1.75                     | 0.51              |
| 33:DA:125:U:O2    | 33:DA:126:G:C8    | 2.63                     | 0.51              |
| 33:DA:275:G:C6    | 33:DA:276:G:C5    | 2.99                     | 0.51              |
| 33:DA:363:A:OP1   | 44:DL:57:THR:HG21 | 2.09                     | 0.51              |
| 33:DA:524:G:C6    | 33:DA:525:C:N4    | 2.78                     | 0.51              |
| 33:DA:725:G:C8    | 33:DA:725:G:H5''  | 2.45                     | 0.51              |
| 33:DA:743:A:C8    | 33:DA:743:A:C3'   | 2.94                     | 0.51              |
| 33:DA:824:G:C2'   | 33:DA:825:A:H5'   | 2.40                     | 0.51              |
| 33:DA:933:G:N2    | 33:DA:935:A:H5''  | 2.24                     | 0.51              |
| 33:DA:981:U:P     | 46:DN:12:ARG:HH12 | 2.34                     | 0.51              |
| 33:DA:1072:G:N1   | 33:DA:1104:G:N3   | 2.58                     | 0.51              |
| 33:DA:1202:U:O2'  | 46:DN:68:ARG:HG3  | 2.11                     | 0.51              |
| 33:DA:1317:C:H5'  | 46:DN:55:SER:OG   | 2.10                     | 0.51              |
| 33:DA:1394:A:N7   | 33:DA:1501:C:H4'  | 2.25                     | 0.51              |
| 33:DA:1502:A:C2   | 33:DA:1504:G:O6   | 2.63                     | 0.51              |
| 34:DB:27:LYS:N    | 34:DB:28:PRO:CD   | 2.73                     | 0.51              |
| 35:DC:35:ASP:O    | 35:DC:38:VAL:HG22 | 2.11                     | 0.51              |
| 36:DD:203:TYR:O   | 36:DD:204:SER:CB  | 2.58                     | 0.51              |
| 38:DF:50:PRO:CD   | 50:DR:73:HIS:CE1  | 2.93                     | 0.51              |
| 41:DI:51:LEU:HB3  | 41:DI:56:MET:HB3  | 1.91                     | 0.51              |
| 53:DU:16:ARG:O    | 53:DU:19:LYS:N    | 2.44                     | 0.51              |
| 4:A3:10:ALA:O     | 18:AL:66:PHE:CE2  | 2.64                     | 0.51              |
| 8:AB:23:G:H5''    | 8:AB:23:G:C8      | 2.45                     | 0.51              |
| 8:AB:187:G:C2     | 8:AB:210:C:O2     | 2.64                     | 0.51              |
| 8:AB:220:G:C6     | 8:AB:427:U:C5     | 2.98                     | 0.51              |
| 8:AB:291:G:C5     | 8:AB:350:G:C6     | 2.98                     | 0.51              |
| 8:AB:325:G:C6     | 8:AB:326:G:N7     | 2.79                     | 0.51              |
| 8:AB:401:A:H2'    | 8:AB:402:A:C8     | 2.46                     | 0.51              |
| 8:AB:571:U:C2     | 8:AB:2030:A:C2    | 2.98                     | 0.51              |
| 8:AB:612:G:N2     | 8:AB:617:G:O6     | 2.43                     | 0.51              |
| 8:AB:756:A:H2'    | 8:AB:757:G:O4'    | 2.10                     | 0.51              |
| 8:AB:797:G:C2     | 8:AB:798:G:H1'    | 2.45                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:819:A:N7     | 8:AB:1189:A:C5     | 2.78                     | 0.51              |
| 8:AB:860:U:H1'    | 8:AB:2268:A:C5'    | 2.39                     | 0.51              |
| 8:AB:861:A:H2'    | 8:AB:862:G:O4'     | 2.10                     | 0.51              |
| 8:AB:872:U:O5'    | 8:AB:872:U:H6      | 1.94                     | 0.51              |
| 8:AB:994:C:H3'    | 23:AQ:53:LYS:HE2   | 1.93                     | 0.51              |
| 8:AB:1265:A:N6    | 8:AB:2013:A:H5''   | 2.24                     | 0.51              |
| 8:AB:1286:A:C6    | 8:AB:1289:C:C4     | 2.98                     | 0.51              |
| 8:AB:1296:G:C4    | 8:AB:1645:G:N2     | 2.78                     | 0.51              |
| 8:AB:1430:G:H2'   | 8:AB:1431:A:C8     | 2.42                     | 0.51              |
| 8:AB:1471:G:H2'   | 8:AB:1472:C:C6     | 2.45                     | 0.51              |
| 8:AB:1581:G:H8    | 8:AB:1581:G:O5'    | 1.93                     | 0.51              |
| 8:AB:1826:G:C6    | 8:AB:1827:U:C4     | 2.98                     | 0.51              |
| 8:AB:1843:C:O3'   | 9:AC:252:LYS:HA    | 2.10                     | 0.51              |
| 8:AB:2242:G:H2'   | 8:AB:2243:U:O4'    | 2.10                     | 0.51              |
| 8:AB:2299:U:H6    | 8:AB:2299:U:H3'    | 1.74                     | 0.51              |
| 8:AB:2367:G:H8    | 8:AB:2367:G:O5'    | 1.94                     | 0.51              |
| 8:AB:2658:C:O3'   | 13:AG:157:LYS:NZ   | 2.39                     | 0.51              |
| 8:AB:2677:G:C6    | 8:AB:2678:C:C4     | 2.98                     | 0.51              |
| 8:AB:2683:C:H6    | 8:AB:2683:C:C5'    | 2.23                     | 0.51              |
| 8:AB:2758:A:N3    | 8:AB:2758:A:H2'    | 2.24                     | 0.51              |
| 8:AB:2849:U:C4    | 8:AB:2867:G:N7     | 2.79                     | 0.51              |
| 9:AC:89:ASN:N     | 9:AC:89:ASN:HD22   | 2.09                     | 0.51              |
| 9:AC:156:SER:CB   | 9:AC:195:GLY:HA3   | 2.40                     | 0.51              |
| 9:AC:180:MET:O    | 9:AC:264:LYS:O     | 2.28                     | 0.51              |
| 11:AE:158:PHE:CE1 | 11:AE:169:VAL:HG12 | 2.45                     | 0.51              |
| 12:AF:111:ARG:HG2 | 45:BM:67:ASP:N     | 2.25                     | 0.51              |
| 14:AH:112:LYS:O   | 14:AH:112:LYS:HD2  | 2.10                     | 0.51              |
| 15:AI:83:ALA:HB2  | 15:AI:100:ILE:CD1  | 2.41                     | 0.51              |
| 15:AI:96:LYS:HE2  | 15:AI:138:VAL:HG21 | 1.92                     | 0.51              |
| 16:AJ:54:ILE:HG22 | 16:AJ:55:ILE:N     | 2.25                     | 0.51              |
| 17:AK:4:GLU:OE2   | 17:AK:23:LYS:HD2   | 2.11                     | 0.51              |
| 20:AN:114:GLU:HG2 | 20:AN:116:VAL:H    | 1.75                     | 0.51              |
| 21:AO:31:THR:HG23 | 21:AO:34:HIS:H     | 1.75                     | 0.51              |
| 23:AQ:47:ARG:HH21 | 23:AQ:54:ARG:NH1   | 2.07                     | 0.51              |
| 24:AR:37:GLU:OE2  | 24:AR:62:GLU:OE2   | 2.29                     | 0.51              |
| 33:BA:114:U:H2'   | 33:BA:115:G:C8     | 2.46                     | 0.51              |
| 33:BA:224:U:H6    | 33:BA:224:U:H3'    | 1.75                     | 0.51              |
| 33:BA:859:G:C8    | 33:BA:869:G:N2     | 2.77                     | 0.51              |
| 33:BA:1093:A:C8   | 33:BA:1095:U:C6    | 2.98                     | 0.51              |
| 33:BA:1121:U:H2'  | 33:BA:1122:U:H6    | 1.75                     | 0.51              |
| 33:BA:1144:G:H2'  | 33:BA:1145:A:H8    | 1.72                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:1162:C:H2'  | 33:BA:1163:A:O4'  | 2.11                     | 0.51              |
| 33:BA:1179:A:H4'  | 41:BI:104:THR:HA  | 1.93                     | 0.51              |
| 33:BA:1315:U:H5'  | 33:BA:1316:G:OP2  | 2.10                     | 0.51              |
| 33:BA:1323:G:O6   | 51:BS:3:SER:HB2   | 2.11                     | 0.51              |
| 33:BA:1378:C:H3'  | 33:BA:1379:G:H5'' | 1.92                     | 0.51              |
| 33:BA:1380:U:H5'  | 33:BA:1381:U:OP1  | 2.11                     | 0.51              |
| 33:BA:1439:G:C6   | 33:BA:1463:U:O2   | 2.63                     | 0.51              |
| 34:BB:45:THR:HB   | 34:BB:49:PHE:HZ   | 1.74                     | 0.51              |
| 39:BG:16:LYS:HD3  | 39:BG:16:LYS:C    | 2.31                     | 0.51              |
| 41:BI:105:ARG:O   | 41:BI:107:ALA:N   | 2.44                     | 0.51              |
| 51:BS:10:ILE:HG22 | 51:BS:38:THR:N    | 2.24                     | 0.51              |
| 51:BS:12:LEU:O    | 51:BS:12:LEU:HD23 | 2.10                     | 0.51              |
| 1:C0:9:ARG:O      | 1:C0:12:ARG:HB2   | 2.11                     | 0.51              |
| 4:C3:29:ARG:CZ    | 8:CB:2419:U:O4    | 2.59                     | 0.51              |
| 8:CB:46:G:C2      | 8:CB:47:C:C6      | 2.99                     | 0.51              |
| 8:CB:111:A:O5'    | 8:CB:111:A:C8     | 2.55                     | 0.51              |
| 8:CB:162:U:C5     | 8:CB:165:A:N1     | 2.79                     | 0.51              |
| 8:CB:265:A:N6     | 8:CB:427:U:O2'    | 2.43                     | 0.51              |
| 8:CB:477:A:H2'    | 8:CB:478:A:N7     | 2.25                     | 0.51              |
| 8:CB:600:G:H1'    | 11:CE:100:MET:HE3 | 1.92                     | 0.51              |
| 8:CB:631:A:H2'    | 18:CL:66:PHE:HD1  | 1.75                     | 0.51              |
| 8:CB:669:G:H3'    | 8:CB:670:A:C8     | 2.46                     | 0.51              |
| 8:CB:736:C:C2     | 8:CB:737:C:H5     | 2.27                     | 0.51              |
| 8:CB:756:A:H2'    | 8:CB:757:G:O4'    | 2.10                     | 0.51              |
| 8:CB:771:G:C2     | 8:CB:772:C:C4     | 2.99                     | 0.51              |
| 8:CB:820:A:O2'    | 8:CB:821:A:H5'    | 2.10                     | 0.51              |
| 8:CB:826:U:C3'    | 8:CB:828:U:H6     | 2.08                     | 0.51              |
| 8:CB:839:U:H2'    | 8:CB:840:C:H6     | 1.72                     | 0.51              |
| 8:CB:968:C:H3'    | 8:CB:968:C:C6     | 2.45                     | 0.51              |
| 8:CB:1162:G:C6    | 8:CB:1163:G:N7    | 2.78                     | 0.51              |
| 8:CB:1265:A:OP1   | 55:CB:5226:HOH:O  | 2.19                     | 0.51              |
| 8:CB:1545:A:H2'   | 8:CB:1546:G:O4'   | 2.11                     | 0.51              |
| 8:CB:1771:C:C4    | 8:CB:1772:A:N7    | 2.79                     | 0.51              |
| 8:CB:1808:A:C3'   | 8:CB:1809:A:H8    | 2.22                     | 0.51              |
| 8:CB:1824:G:C2    | 9:CC:249:VAL:HG12 | 2.45                     | 0.51              |
| 8:CB:1854:A:H2'   | 8:CB:1855:U:H5'   | 1.91                     | 0.51              |
| 8:CB:2079:U:H4'   | 8:CB:2433:A:C2    | 2.45                     | 0.51              |
| 8:CB:2214:C:H5'   | 8:CB:2215:C:OP2   | 2.11                     | 0.51              |
| 8:CB:2230:G:H2'   | 8:CB:2231:U:C5    | 2.46                     | 0.51              |
| 8:CB:2258:C:C5'   | 8:CB:2258:C:C6    | 2.91                     | 0.51              |
| 8:CB:2464:G:C6    | 8:CB:2487:G:C6    | 2.98                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2611:C:O2    | 8:CB:2611:C:H2'    | 2.10                     | 0.51              |
| 8:CB:2719:G:H5''  | 8:CB:2719:G:C8     | 2.45                     | 0.51              |
| 8:CB:2779:U:H5''  | 8:CB:2780:G:H3'    | 1.93                     | 0.51              |
| 8:CB:2810:A:O3'   | 10:CD:61:THR:CG2   | 2.59                     | 0.51              |
| 9:CC:251:THR:O    | 9:CC:253:GLY:N     | 2.43                     | 0.51              |
| 10:CD:54:ALA:HB1  | 10:CD:56:LYS:CB    | 2.41                     | 0.51              |
| 10:CD:111:GLY:CA  | 10:CD:194:PRO:HB2  | 2.40                     | 0.51              |
| 10:CD:155:VAL:O   | 10:CD:156:PHE:C    | 2.48                     | 0.51              |
| 10:CD:182:ALA:C   | 10:CD:184:ARG:H    | 2.14                     | 0.51              |
| 11:CE:151:GLY:C   | 11:CE:152:GLU:HG2  | 2.30                     | 0.51              |
| 11:CE:151:GLY:HA2 | 11:CE:171:ASP:HB3  | 1.91                     | 0.51              |
| 11:CE:190:ALA:N   | 11:CE:194:LYS:HE2  | 2.26                     | 0.51              |
| 11:CE:191:ASP:N   | 11:CE:194:LYS:HZ3  | 2.09                     | 0.51              |
| 12:CF:49:LEU:HA   | 12:CF:52:ALA:HB2   | 1.93                     | 0.51              |
| 14:CH:27:ARG:O    | 14:CH:27:ARG:CG    | 2.58                     | 0.51              |
| 14:CH:148:ALA:O   | 14:CH:149:GLU:O    | 2.28                     | 0.51              |
| 16:CJ:122:LEU:O   | 16:CJ:123:LYS:HB2  | 2.10                     | 0.51              |
| 22:CP:5:LYS:HA    | 22:CP:5:LYS:HZ3    | 1.74                     | 0.51              |
| 22:CP:5:LYS:HD2   | 22:CP:5:LYS:N      | 2.25                     | 0.51              |
| 22:CP:59:THR:O    | 22:CP:60:VAL:CG1   | 2.57                     | 0.51              |
| 24:CR:10:LYS:HD2  | 24:CR:11:GLN:H     | 1.72                     | 0.51              |
| 25:CS:9:HIS:C     | 25:CS:11:ARG:H     | 2.13                     | 0.51              |
| 29:CW:31:LEU:O    | 29:CW:32:ALA:CB    | 2.58                     | 0.51              |
| 33:DA:367:U:H5    | 33:DA:394:G:N1     | 2.09                     | 0.51              |
| 33:DA:405:U:C6    | 36:DD:4:LEU:HD11   | 2.45                     | 0.51              |
| 33:DA:467:U:C6    | 33:DA:467:U:H5''   | 2.45                     | 0.51              |
| 33:DA:518:C:C5    | 33:DA:530:G:N7     | 2.78                     | 0.51              |
| 33:DA:595:A:C2    | 33:DA:641:U:O2     | 2.63                     | 0.51              |
| 33:DA:712:A:H8    | 33:DA:712:A:C5'    | 2.10                     | 0.51              |
| 33:DA:796:C:H5'   | 43:DK:128:VAL:HG22 | 1.93                     | 0.51              |
| 33:DA:812:G:O2'   | 33:DA:813:U:C6     | 2.62                     | 0.51              |
| 33:DA:818:G:O2'   | 33:DA:820:U:H5     | 1.92                     | 0.51              |
| 33:DA:1299:A:C8   | 33:DA:1301:U:H1'   | 2.46                     | 0.51              |
| 33:DA:1415:G:C2   | 33:DA:1416:G:C8    | 2.99                     | 0.51              |
| 33:DA:1417:G:N2   | 33:DA:1482:G:H2'   | 2.26                     | 0.51              |
| 34:DB:95:TRP:CZ2  | 34:DB:171:ALA:HB2  | 2.46                     | 0.51              |
| 34:DB:115:ASP:O   | 34:DB:119:GLN:HG3  | 2.10                     | 0.51              |
| 36:DD:146:GLU:O   | 36:DD:149:LYS:HG3  | 2.09                     | 0.51              |
| 41:DI:125:GLN:HG3 | 41:DI:125:GLN:O    | 2.08                     | 0.51              |
| 45:DM:12:LYS:O    | 45:DM:13:HIS:C     | 2.49                     | 0.51              |
| 49:DQ:43:LEU:HD23 | 49:DQ:72:TRP:NE1   | 2.26                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A0:5:ASN:HD21   | 8:AB:2019:A:N6    | 2.06                     | 0.51              |
| 1:A0:42:ILE:HG22  | 1:A0:47:TYR:H     | 1.76                     | 0.51              |
| 4:A3:25:HIS:O     | 8:AB:2361:G:OP1   | 2.28                     | 0.51              |
| 8:AB:8:C:C4       | 8:AB:9:G:N7       | 2.79                     | 0.51              |
| 8:AB:64:A:C2      | 8:AB:65:U:N3      | 2.76                     | 0.51              |
| 8:AB:390:U:H4'    | 8:AB:391:A:H5''   | 1.93                     | 0.51              |
| 8:AB:571:U:O2'    | 8:AB:572:A:H5''   | 2.11                     | 0.51              |
| 8:AB:785:G:C6     | 8:AB:786:C:C4     | 2.99                     | 0.51              |
| 8:AB:806:C:H2'    | 8:AB:807:U:H5'    | 1.91                     | 0.51              |
| 8:AB:834:G:H1'    | 8:AB:2358:A:H1'   | 1.93                     | 0.51              |
| 8:AB:850:U:H2'    | 8:AB:851:C:H6     | 1.74                     | 0.51              |
| 8:AB:1316:U:C2'   | 8:AB:1317:G:H5'   | 2.39                     | 0.51              |
| 8:AB:1509:A:H5''  | 8:AB:1509:A:C8    | 2.45                     | 0.51              |
| 8:AB:1564:C:C4    | 8:AB:1565:C:N4    | 2.71                     | 0.51              |
| 8:AB:1598:A:C2    | 8:AB:1599:U:C6    | 2.98                     | 0.51              |
| 8:AB:1703:G:H2'   | 8:AB:1704:C:H6    | 1.75                     | 0.51              |
| 8:AB:1786:A:C2    | 8:AB:1938:A:C5    | 2.99                     | 0.51              |
| 8:AB:1801:A:C8    | 8:AB:2203:U:H2'   | 2.45                     | 0.51              |
| 8:AB:1915:U:C2'   | 8:AB:1916:A:H5'   | 2.41                     | 0.51              |
| 8:AB:1987:A:C6    | 8:AB:1988:G:C6    | 2.99                     | 0.51              |
| 8:AB:2026:U:H2'   | 8:AB:2026:U:O2    | 2.11                     | 0.51              |
| 8:AB:2334:U:P     | 21:AO:7:ARG:NE    | 2.83                     | 0.51              |
| 8:AB:2400:G:C6    | 8:AB:2401:U:O4    | 2.63                     | 0.51              |
| 8:AB:2466:C:O5'   | 8:AB:2466:C:H6    | 1.93                     | 0.51              |
| 8:AB:2605:U:C2    | 8:AB:2606:C:C5    | 2.98                     | 0.51              |
| 8:AB:2636:C:H2'   | 8:AB:2637:U:H6    | 1.73                     | 0.51              |
| 8:AB:2645:G:H8    | 8:AB:2645:G:H5''  | 1.75                     | 0.51              |
| 8:AB:2722:G:O2'   | 8:AB:2723:C:H5'   | 2.10                     | 0.51              |
| 9:AC:61:TYR:CD2   | 9:AC:84:PRO:CD    | 2.94                     | 0.51              |
| 10:AD:16:THR:O    | 10:AD:17:GLU:HB2  | 2.11                     | 0.51              |
| 10:AD:33:ARG:HH21 | 10:AD:87:GLY:CA   | 2.21                     | 0.51              |
| 10:AD:160:LYS:HB2 | 10:AD:160:LYS:HZ2 | 1.73                     | 0.51              |
| 12:AF:30:VAL:O    | 12:AF:31:GLU:C    | 2.47                     | 0.51              |
| 12:AF:49:LEU:HA   | 12:AF:52:ALA:HB2  | 1.93                     | 0.51              |
| 12:AF:100:GLU:OE2 | 12:AF:101:ARG:N   | 2.39                     | 0.51              |
| 15:AI:89:SER:HB3  | 15:AI:92:PRO:HG3  | 1.92                     | 0.51              |
| 16:AJ:100:VAL:C   | 16:AJ:102:GLU:N   | 2.62                     | 0.51              |
| 18:AL:126:ARG:HD2 | 18:AL:127:VAL:H   | 1.72                     | 0.51              |
| 20:AN:12:ARG:NH1  | 20:AN:20:MET:SD   | 2.83                     | 0.51              |
| 20:AN:21:PHE:HD1  | 20:AN:21:PHE:N    | 2.09                     | 0.51              |
| 22:AP:26:GLU:HG2  | 22:AP:47:ILE:O    | 2.10                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:AP:77:SER:H    | 22:AP:78:PRO:HD2   | 1.75                     | 0.51              |
| 29:AW:25:PHE:O    | 29:AW:25:PHE:HD2   | 1.93                     | 0.51              |
| 29:AW:30:VAL:HG12 | 29:AW:31:LEU:HB2   | 1.91                     | 0.51              |
| 29:AW:64:GLY:O    | 29:AW:65:LYS:HB3   | 2.11                     | 0.51              |
| 33:BA:93:U:H2'    | 33:BA:95:C:H5      | 1.76                     | 0.51              |
| 33:BA:130:A:N1    | 33:BA:233:C:O2     | 2.43                     | 0.51              |
| 33:BA:390:U:C2    | 33:BA:391:G:N7     | 2.78                     | 0.51              |
| 33:BA:411:A:C6    | 33:BA:429:U:C4     | 2.98                     | 0.51              |
| 33:BA:670:G:N2    | 33:BA:737:C:O2     | 2.44                     | 0.51              |
| 33:BA:775:G:C2    | 33:BA:776:G:C5     | 2.99                     | 0.51              |
| 33:BA:780:A:H5''  | 33:BA:780:A:C8     | 2.33                     | 0.51              |
| 33:BA:780:A:C5'   | 33:BA:780:A:C8     | 2.93                     | 0.51              |
| 33:BA:849:G:N1    | 33:BA:850:U:O2     | 2.43                     | 0.51              |
| 33:BA:899:C:H5''  | 33:BA:900:A:OP2    | 2.10                     | 0.51              |
| 33:BA:920:U:C2    | 33:BA:921:U:H5     | 2.28                     | 0.51              |
| 33:BA:1137:C:H1'  | 33:BA:1138:G:C2    | 2.46                     | 0.51              |
| 33:BA:1190:G:O2'  | 33:BA:1191:A:OP2   | 2.29                     | 0.51              |
| 33:BA:1272:G:C6   | 33:BA:1273:C:N3    | 2.79                     | 0.51              |
| 33:BA:1375:A:H5'  | 33:BA:1375:A:C8    | 2.33                     | 0.51              |
| 33:BA:1437:A:C2   | 33:BA:1438:G:N7    | 2.79                     | 0.51              |
| 33:BA:1458:G:H8   | 33:BA:1458:G:O5'   | 1.94                     | 0.51              |
| 33:BA:1478:U:H2'  | 33:BA:1479:C:H6    | 1.74                     | 0.51              |
| 33:BA:1520:C:H2'  | 33:BA:1521:C:H6    | 1.75                     | 0.51              |
| 34:BB:99:MET:CA   | 34:BB:106:VAL:HG21 | 2.39                     | 0.51              |
| 34:BB:119:GLN:HA  | 34:BB:124:THR:CG2  | 2.41                     | 0.51              |
| 34:BB:186:VAL:HB  | 34:BB:190:SER:HB3  | 1.93                     | 0.51              |
| 35:BC:183:TYR:HA  | 35:BC:199:VAL:O    | 2.10                     | 0.51              |
| 42:BJ:13:PHE:HE1  | 46:BN:93:PRO:O     | 1.94                     | 0.51              |
| 42:BJ:18:ILE:HD13 | 42:BJ:18:ILE:O     | 2.11                     | 0.51              |
| 42:BJ:49:PHE:O    | 42:BJ:50:THR:HG23  | 2.11                     | 0.51              |
| 50:BR:57:ALA:HA   | 50:BR:60:ARG:CG    | 2.40                     | 0.51              |
| 1:C0:41:HIS:NE2   | 1:C0:45:ASP:O      | 2.40                     | 0.51              |
| 8:CB:245:G:C8     | 8:CB:245:G:H3'     | 2.46                     | 0.51              |
| 8:CB:567:U:H2'    | 8:CB:567:U:O2      | 2.10                     | 0.51              |
| 8:CB:578:G:H8     | 8:CB:578:G:O5'     | 1.94                     | 0.51              |
| 8:CB:682:G:C2     | 8:CB:683:U:C5      | 2.99                     | 0.51              |
| 8:CB:871:U:O2     | 8:CB:907:G:C2      | 2.63                     | 0.51              |
| 8:CB:1024:G:C2'   | 8:CB:1025:G:OP1    | 2.57                     | 0.51              |
| 8:CB:1182:G:C2    | 8:CB:1183:U:H1'    | 2.46                     | 0.51              |
| 8:CB:1223:G:C6    | 8:CB:1227:G:N1     | 2.78                     | 0.51              |
| 8:CB:1225:G:OP1   | 24:CR:90:ARG:HB3   | 2.10                     | 0.51              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1341:G:OP2    | 8:CB:1394:U:O2'   | 2.24                     | 0.51              |
| 8:CB:1528:A:C6     | 8:CB:1529:G:H1'   | 2.46                     | 0.51              |
| 8:CB:1642:G:C2     | 8:CB:1643:G:C8    | 2.98                     | 0.51              |
| 8:CB:1741:C:H2'    | 8:CB:1742:U:H6    | 1.73                     | 0.51              |
| 8:CB:1826:G:C6     | 8:CB:1827:U:C4    | 2.99                     | 0.51              |
| 8:CB:1942:C:C5     | 8:CB:1943:U:C5    | 2.99                     | 0.51              |
| 8:CB:1991:U:C2'    | 8:CB:1992:G:H5'   | 2.41                     | 0.51              |
| 8:CB:2011:U:H2'    | 8:CB:2012:G:H8    | 1.76                     | 0.51              |
| 8:CB:2016:U:HO2'   | 8:CB:2017:U:P     | 2.34                     | 0.51              |
| 8:CB:2082:A:C5     | 8:CB:2239:G:N2    | 2.79                     | 0.51              |
| 8:CB:2452:C:N4     | 8:CB:2453:A:H61   | 2.08                     | 0.51              |
| 8:CB:2459:A:H61    | 8:CB:2493:U:H3    | 1.58                     | 0.51              |
| 8:CB:2461:A:H1'    | 8:CB:2492:U:C2    | 2.45                     | 0.51              |
| 8:CB:2578:G:O2'    | 10:CD:138:LEU:CD2 | 2.59                     | 0.51              |
| 8:CB:2597:G:P      | 9:CC:239:PHE:HB2  | 2.51                     | 0.51              |
| 8:CB:2754:U:O5'    | 8:CB:2754:U:H6    | 1.93                     | 0.51              |
| 9:CC:73:ILE:HG22   | 9:CC:95:TYR:HD1   | 1.76                     | 0.51              |
| 9:CC:193:GLU:O     | 9:CC:194:VAL:HG13 | 2.11                     | 0.51              |
| 9:CC:229:HIS:HE1   | 9:CC:231:HIS:NE2  | 2.09                     | 0.51              |
| 10:CD:13:ARG:O     | 10:CD:14:ILE:C    | 2.49                     | 0.51              |
| 10:CD:63:PRO:O     | 10:CD:65:ALA:N    | 2.44                     | 0.51              |
| 11:CE:57:LYS:O     | 11:CE:58:LYS:O    | 2.29                     | 0.51              |
| 11:CE:149:ILE:HD13 | 11:CE:152:GLU:OE2 | 2.11                     | 0.51              |
| 12:CF:35:LEU:HD12  | 12:CF:56:LEU:HD21 | 1.92                     | 0.51              |
| 13:CG:73:SER:HB3   | 13:CG:137:LYS:CE  | 2.35                     | 0.51              |
| 15:CI:126:ARG:HB3  | 15:CI:126:ARG:NH1 | 2.25                     | 0.51              |
| 16:CJ:32:LEU:O     | 16:CJ:36:LEU:HD12 | 2.11                     | 0.51              |
| 19:CM:97:GLN:N     | 19:CM:98:PRO:CD   | 2.72                     | 0.51              |
| 20:CN:114:GLU:HG2  | 20:CN:116:VAL:H   | 1.75                     | 0.51              |
| 21:CO:30:ARG:O     | 21:CO:33:ARG:O    | 2.28                     | 0.51              |
| 22:CP:27:VAL:HG13  | 22:CP:47:ILE:HD12 | 1.91                     | 0.51              |
| 23:CQ:46:TYR:CD1   | 24:CR:79:ARG:HB3  | 2.46                     | 0.51              |
| 23:CQ:52:ARG:HD3   | 23:CQ:53:LYS:NZ   | 2.25                     | 0.51              |
| 24:CR:91:GLN:HG3   | 24:CR:92:TRP:N    | 2.26                     | 0.51              |
| 26:CT:59:ASN:C     | 26:CT:60:THR:HG23 | 2.31                     | 0.51              |
| 27:CU:65:GLN:O     | 27:CU:66:VAL:C    | 2.48                     | 0.51              |
| 29:CW:62:ALA:O     | 29:CW:63:ASP:HB2  | 2.09                     | 0.51              |
| 31:CY:4:ILE:HA     | 31:CY:36:GLU:OE1  | 2.11                     | 0.51              |
| 31:CY:6:ILE:O      | 31:CY:6:ILE:HD13  | 2.11                     | 0.51              |
| 33:DA:81:A:H5''    | 33:DA:81:A:H8     | 1.74                     | 0.51              |
| 33:DA:264:C:O2'    | 49:DQ:64:ARG:HG3  | 2.10                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:601:G:OP1   | 40:DH:88:LYS:NZ    | 2.25                     | 0.51              |
| 33:DA:831:A:C5    | 33:DA:832:G:C8     | 2.99                     | 0.51              |
| 33:DA:838:G:C2    | 33:DA:849:G:C2     | 2.98                     | 0.51              |
| 33:DA:1068:G:C2   | 33:DA:1069:C:O2    | 2.64                     | 0.51              |
| 33:DA:1116:U:O2'  | 33:DA:1117:A:H5'   | 2.10                     | 0.51              |
| 33:DA:1161:C:N3   | 33:DA:1175:G:O6    | 2.44                     | 0.51              |
| 33:DA:1234:C:C4   | 33:DA:1235:U:C5    | 2.99                     | 0.51              |
| 33:DA:1521:C:C4   | 33:DA:1522:U:C5    | 2.98                     | 0.51              |
| 34:DB:49:PHE:HA   | 34:DB:212:TYR:OH   | 2.10                     | 0.51              |
| 34:DB:67:LEU:CD1  | 34:DB:89:PHE:HB2   | 2.41                     | 0.51              |
| 37:DE:96:GLN:HG2  | 37:DE:97:PRO:HD2   | 1.92                     | 0.51              |
| 37:DE:156:ARG:HD2 | 40:DH:42:GLU:O     | 2.10                     | 0.51              |
| 39:DG:147:ASN:C   | 39:DG:149:ALA:H    | 2.14                     | 0.51              |
| 45:DM:93:GLY:HA2  | 45:DM:108:ARG:HH12 | 1.76                     | 0.51              |
| 50:DR:61:ALA:O    | 50:DR:63:TYR:N     | 2.44                     | 0.51              |
| 52:DT:3:ILE:O     | 52:DT:4:LYS:HB3    | 2.09                     | 0.51              |
| 2:A1:26:LYS:HD2   | 2:A1:29:LYS:HG3    | 1.91                     | 0.51              |
| 2:A1:44:GLN:CD    | 2:A1:45:HIS:HB2    | 2.31                     | 0.51              |
| 3:A2:28:ARG:NH2   | 3:A2:31:LEU:HB2    | 2.25                     | 0.51              |
| 7:AA:23:G:H1      | 7:AA:59:A:N6       | 2.09                     | 0.51              |
| 7:AA:39:A:H2'     | 7:AA:40:U:H5'      | 1.93                     | 0.51              |
| 8:AB:8:C:N4       | 8:AB:9:G:C5        | 2.79                     | 0.51              |
| 8:AB:28:A:O2'     | 8:AB:583:G:H5'     | 2.11                     | 0.51              |
| 8:AB:67:U:C2      | 8:AB:68:G:N7       | 2.79                     | 0.51              |
| 8:AB:257:C:H3'    | 8:AB:258:G:C8      | 2.44                     | 0.51              |
| 8:AB:370:G:P      | 8:AB:370:G:C8      | 3.01                     | 0.51              |
| 8:AB:454:A:C3'    | 8:AB:455:C:H5'     | 2.30                     | 0.51              |
| 8:AB:498:G:C6     | 8:AB:499:U:C5      | 2.98                     | 0.51              |
| 8:AB:672:C:N3     | 8:AB:673:C:C5      | 2.78                     | 0.51              |
| 8:AB:856:G:C2     | 8:AB:857:G:O6      | 2.64                     | 0.51              |
| 8:AB:898:C:H2'    | 8:AB:899:A:C8      | 2.46                     | 0.51              |
| 8:AB:1010:A:C8    | 8:AB:1010:A:C3'    | 2.93                     | 0.51              |
| 8:AB:1028:A:H1'   | 8:AB:2487:G:OP1    | 2.11                     | 0.51              |
| 8:AB:1219:U:H2'   | 8:AB:1220:G:H8     | 1.76                     | 0.51              |
| 8:AB:1334:G:H8    | 8:AB:1334:G:O5'    | 1.93                     | 0.51              |
| 8:AB:1368:G:H2'   | 8:AB:1369:G:H8     | 1.76                     | 0.51              |
| 8:AB:1381:G:C6    | 8:AB:1382:G:N2     | 2.79                     | 0.51              |
| 8:AB:1384:A:O2'   | 8:AB:1385:A:H5'    | 2.11                     | 0.51              |
| 8:AB:1430:G:C4    | 8:AB:1431:A:C8     | 2.98                     | 0.51              |
| 8:AB:1717:A:N6    | 8:AB:1743:G:H1'    | 2.24                     | 0.51              |
| 8:AB:1824:G:OP1   | 9:AC:52:HIS:CD2    | 2.64                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1828:G:P      | 55:AB:4541:HOH:O   | 2.69                     | 0.51              |
| 8:AB:1864:U:H2'    | 8:AB:1865:U:H5'    | 1.93                     | 0.51              |
| 8:AB:2282:G:C5     | 8:AB:2425:A:H2     | 2.25                     | 0.51              |
| 8:AB:2459:A:H61    | 8:AB:2493:U:H3     | 1.59                     | 0.51              |
| 8:AB:2712:C:C6     | 8:AB:2715:C:OP1    | 2.64                     | 0.51              |
| 8:AB:2811:G:C6     | 8:AB:2890:G:N2     | 2.79                     | 0.51              |
| 8:AB:2861:U:H2'    | 8:AB:2862:G:C8     | 2.44                     | 0.51              |
| 9:AC:27:LYS:N      | 9:AC:28:PRO:CD     | 2.73                     | 0.51              |
| 9:AC:34:GLU:C      | 9:AC:34:GLU:CD     | 2.68                     | 0.51              |
| 9:AC:153:LEU:O     | 9:AC:153:LEU:HD23  | 2.10                     | 0.51              |
| 11:AE:4:VAL:O      | 11:AE:12:LEU:HD11  | 2.11                     | 0.51              |
| 11:AE:6:LYS:HD3    | 11:AE:12:LEU:HD21  | 1.92                     | 0.51              |
| 11:AE:181:ILE:O    | 11:AE:181:ILE:CG2  | 2.59                     | 0.51              |
| 12:AF:71:LYS:HG2   | 12:AF:72:SER:N     | 2.25                     | 0.51              |
| 13:AG:119:GLY:O    | 13:AG:120:ILE:HG23 | 2.11                     | 0.51              |
| 14:AH:58:LEU:HD12  | 14:AH:62:LEU:HG    | 1.92                     | 0.51              |
| 16:AJ:113:PRO:HA   | 16:AJ:116:ARG:CB   | 2.40                     | 0.51              |
| 18:AL:101:ILE:HG13 | 18:AL:101:ILE:O    | 2.10                     | 0.51              |
| 18:AL:128:THR:O    | 18:AL:129:LYS:C    | 2.49                     | 0.51              |
| 19:AM:77:PRO:O     | 19:AM:78:LEU:HG    | 2.11                     | 0.51              |
| 27:AU:8:ASP:O      | 27:AU:10:VAL:HG13  | 2.11                     | 0.51              |
| 29:AW:31:LEU:O     | 29:AW:32:ALA:CB    | 2.59                     | 0.51              |
| 33:BA:232:G:C5'    | 33:BA:232:G:C8     | 2.92                     | 0.51              |
| 33:BA:504:C:O5'    | 33:BA:504:C:H6     | 1.94                     | 0.51              |
| 33:BA:585:G:H3'    | 33:BA:585:G:C8     | 2.46                     | 0.51              |
| 33:BA:1015:G:H2'   | 33:BA:1016:A:C8    | 2.45                     | 0.51              |
| 33:BA:1078:U:O2    | 37:BE:89:THR:CG2   | 2.58                     | 0.51              |
| 33:BA:1101:A:H62   | 34:BB:173:LYS:HD2  | 1.76                     | 0.51              |
| 33:BA:1115:U:O2    | 33:BA:1186:G:C2    | 2.64                     | 0.51              |
| 33:BA:1152:A:C6    | 33:BA:1153:G:C5    | 2.99                     | 0.51              |
| 33:BA:1279:G:H3'   | 33:BA:1279:G:C8    | 2.46                     | 0.51              |
| 33:BA:1294:G:H2'   | 33:BA:1295:U:O4'   | 2.11                     | 0.51              |
| 33:BA:1399:C:C4'   | 33:BA:1400:C:H5''  | 2.25                     | 0.51              |
| 33:BA:1429:A:C2    | 33:BA:1472:U:C2    | 2.98                     | 0.51              |
| 33:BA:1508:A:C2    | 33:BA:1509:C:C2    | 2.98                     | 0.51              |
| 38:BF:19:PRO:HG2   | 38:BF:20:GLY:H     | 1.76                     | 0.51              |
| 39:BG:11:ILE:HG21  | 39:BG:27:ASN:ND2   | 2.25                     | 0.51              |
| 39:BG:20:GLU:HA    | 39:BG:23:ALA:HB2   | 1.92                     | 0.51              |
| 40:BH:95:MET:C     | 40:BH:97:GLY:H     | 2.14                     | 0.51              |
| 41:BI:16:ALA:HA    | 41:BI:66:VAL:HB    | 1.93                     | 0.51              |
| 42:BJ:57:VAL:HG22  | 42:BJ:58:ASN:N     | 2.19                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:C3:1:PRO:HD3    | 8:CB:591:U:H1'    | 1.93                     | 0.51              |
| 4:C3:33:THR:CG2   | 4:C3:40:LYS:HE2   | 2.41                     | 0.51              |
| 7:CA:6:G:H2'      | 7:CA:7:G:H8       | 1.76                     | 0.51              |
| 7:CA:25:U:C6      | 7:CA:25:U:C5'     | 2.93                     | 0.51              |
| 7:CA:53:A:H3'     | 7:CA:53:A:C8      | 2.46                     | 0.51              |
| 8:CB:260:G:H3'    | 8:CB:260:G:C8     | 2.45                     | 0.51              |
| 8:CB:530:G:HO2'   | 8:CB:531:C:C5'    | 2.24                     | 0.51              |
| 8:CB:608:A:N6     | 8:CB:621:A:C8     | 2.79                     | 0.51              |
| 8:CB:672:C:C3'    | 8:CB:673:C:H5'    | 2.41                     | 0.51              |
| 8:CB:692:C:N4     | 8:CB:770:G:H1     | 2.08                     | 0.51              |
| 8:CB:758:C:O2     | 8:CB:1981:A:H2    | 1.93                     | 0.51              |
| 8:CB:1014:A:H61   | 8:CB:1148:U:H3    | 1.57                     | 0.51              |
| 8:CB:1041:G:C2    | 8:CB:1115:G:N1    | 2.78                     | 0.51              |
| 8:CB:1268:A:N6    | 8:CB:1269:A:N3    | 2.58                     | 0.51              |
| 8:CB:1317:G:C2    | 8:CB:1318:U:O2    | 2.63                     | 0.51              |
| 8:CB:1672:A:N6    | 8:CB:1673:G:O6    | 2.44                     | 0.51              |
| 8:CB:1704:C:H2'   | 8:CB:1704:C:O2    | 2.10                     | 0.51              |
| 8:CB:1890:A:H2    | 8:CB:2234:G:N3    | 2.09                     | 0.51              |
| 8:CB:1970:A:H5''  | 8:CB:1970:A:C8    | 2.43                     | 0.51              |
| 8:CB:1994:C:H2'   | 8:CB:1994:C:O2    | 2.10                     | 0.51              |
| 8:CB:2023:C:O2'   | 8:CB:2618:G:H5''  | 2.10                     | 0.51              |
| 8:CB:2060:A:C2    | 8:CB:2502:G:C6    | 2.98                     | 0.51              |
| 8:CB:2103:C:H3'   | 8:CB:2104:C:C2    | 2.46                     | 0.51              |
| 8:CB:2334:U:C4    | 21:CO:15:ARG:HG3  | 2.45                     | 0.51              |
| 8:CB:2542:A:H4'   | 8:CB:2543:G:H5''  | 1.93                     | 0.51              |
| 8:CB:2543:G:C6    | 8:CB:2544:G:C6    | 2.98                     | 0.51              |
| 8:CB:2657:A:H2'   | 8:CB:2658:C:H5'   | 1.93                     | 0.51              |
| 9:CC:22:GLU:CB    | 9:CC:202:ARG:HE   | 2.24                     | 0.51              |
| 9:CC:155:ARG:CD   | 9:CC:157:ALA:CB   | 2.87                     | 0.51              |
| 10:CD:81:GLU:CG   | 10:CD:82:PHE:H    | 2.20                     | 0.51              |
| 11:CE:90:GLN:CG   | 11:CE:92:HIS:CD2  | 2.94                     | 0.51              |
| 12:CF:100:GLU:OE2 | 12:CF:101:ARG:N   | 2.41                     | 0.51              |
| 12:CF:129:MET:O   | 12:CF:152:ASP:O   | 2.29                     | 0.51              |
| 13:CG:147:LEU:C   | 13:CG:149:ALA:H   | 2.12                     | 0.51              |
| 14:CH:26:ALA:HB2  | 14:CH:30:LEU:CG   | 2.39                     | 0.51              |
| 14:CH:82:SER:HB2  | 14:CH:90:LEU:CD1  | 2.41                     | 0.51              |
| 16:CJ:56:VAL:O    | 16:CJ:57:LEU:HD13 | 2.11                     | 0.51              |
| 16:CJ:65:THR:OG1  | 16:CJ:68:LYS:HB2  | 2.10                     | 0.51              |
| 16:CJ:81:ILE:CA   | 16:CJ:84:ILE:HD11 | 2.31                     | 0.51              |
| 18:CL:89:VAL:HG22 | 18:CL:89:VAL:O    | 2.11                     | 0.51              |
| 18:CL:92:LEU:HD22 | 18:CL:96:LYS:CB   | 2.41                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:CM:2:LEU:HD13   | 19:CM:47:GLU:OE2   | 2.11                     | 0.51              |
| 20:CN:4:ARG:HG2    | 20:CN:5:LYS:N      | 2.26                     | 0.51              |
| 22:CP:55:HIS:O     | 22:CP:58:PHE:CG    | 2.63                     | 0.51              |
| 23:CQ:89:ILE:O     | 23:CQ:91:ARG:HD2   | 2.11                     | 0.51              |
| 24:CR:39:LEU:HB3   | 24:CR:56:GLY:O     | 2.11                     | 0.51              |
| 24:CR:79:ARG:CD    | 24:CR:80:ARG:N     | 2.71                     | 0.51              |
| 33:DA:173:U:H4'    | 33:DA:197:A:C8     | 2.45                     | 0.51              |
| 33:DA:430:A:O2'    | 33:DA:431:A:C8     | 2.63                     | 0.51              |
| 33:DA:435:A:N6     | 33:DA:436:C:C4     | 2.78                     | 0.51              |
| 33:DA:577:G:C2     | 33:DA:578:C:C6     | 2.99                     | 0.51              |
| 33:DA:622:A:C6     | 33:DA:623:C:H1'    | 2.46                     | 0.51              |
| 33:DA:654:G:C4     | 33:DA:753:A:C6     | 2.99                     | 0.51              |
| 33:DA:905:U:C6     | 33:DA:905:U:H5''   | 2.42                     | 0.51              |
| 33:DA:1069:C:H3'   | 33:DA:1069:C:C6    | 2.45                     | 0.51              |
| 33:DA:1081:A:H2'   | 33:DA:1082:A:H5'   | 1.92                     | 0.51              |
| 33:DA:1133:G:C6    | 33:DA:1142:G:N1    | 2.78                     | 0.51              |
| 33:DA:1288:A:H2'   | 33:DA:1289:A:C4'   | 2.40                     | 0.51              |
| 33:DA:1307:U:C4'   | 45:DM:107:THR:HG21 | 2.41                     | 0.51              |
| 33:DA:1492:A:C2    | 33:DA:1493:A:H4'   | 2.46                     | 0.51              |
| 35:DC:181:ILE:HG23 | 35:DC:181:ILE:O    | 2.09                     | 0.51              |
| 40:DH:74:ILE:CB    | 40:DH:128:VAL:HG12 | 2.40                     | 0.51              |
| 42:DJ:8:ILE:HD11   | 42:DJ:74:VAL:CG2   | 2.40                     | 0.51              |
| 43:DK:96:ILE:C     | 43:DK:98:ALA:H     | 2.13                     | 0.51              |
| 52:DT:66:ILE:HG22  | 52:DT:67:HIS:N     | 2.26                     | 0.51              |
| 2:A1:15:GLY:O      | 2:A1:16:THR:CG2    | 2.53                     | 0.51              |
| 4:A3:7:ARG:HA      | 4:A3:10:ALA:CB     | 2.39                     | 0.51              |
| 8:AB:223:A:C2      | 8:AB:408:G:C8      | 2.98                     | 0.51              |
| 8:AB:350:G:H8      | 8:AB:350:G:H5'     | 1.75                     | 0.51              |
| 8:AB:636:G:N7      | 18:AL:109:LYS:NZ   | 2.49                     | 0.51              |
| 8:AB:848:C:O2'     | 8:AB:849:A:H5'     | 2.10                     | 0.51              |
| 8:AB:856:G:C2      | 8:AB:922:C:N4      | 2.79                     | 0.51              |
| 8:AB:974:G:C6      | 8:AB:989:G:C5      | 2.99                     | 0.51              |
| 8:AB:1029:A:H1'    | 8:AB:2486:C:O4'    | 2.10                     | 0.51              |
| 8:AB:1045:C:O4'    | 8:AB:1047:G:C4     | 2.64                     | 0.51              |
| 8:AB:1362:C:O2     | 8:AB:1363:C:C6     | 2.64                     | 0.51              |
| 8:AB:1437:C:O2'    | 8:AB:1516:G:H4'    | 2.10                     | 0.51              |
| 8:AB:1737:G:N1     | 8:AB:1738:G:N2     | 2.59                     | 0.51              |
| 8:AB:1831:G:H2'    | 8:AB:1832:C:H6     | 1.75                     | 0.51              |
| 8:AB:1895:C:O5'    | 8:AB:1895:C:H6     | 1.93                     | 0.51              |
| 8:AB:1947:C:N3     | 8:AB:1948:G:N7     | 2.58                     | 0.51              |
| 8:AB:2090:A:N1     | 8:AB:2091:C:N4     | 2.59                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2259:U:H1'   | 8:AB:2427:C:C2     | 2.46                     | 0.51              |
| 8:AB:2543:G:H3'   | 8:AB:2544:G:H8     | 1.75                     | 0.51              |
| 8:AB:2752:C:H2'   | 8:AB:2752:C:O2     | 2.09                     | 0.51              |
| 9:AC:259:ASN:N    | 9:AC:259:ASN:OD1   | 2.44                     | 0.51              |
| 10:AD:55:LYS:C    | 10:AD:57:ALA:N     | 2.64                     | 0.51              |
| 10:AD:195:GLY:HA3 | 10:AD:199:SER:OG   | 2.10                     | 0.51              |
| 11:AE:98:LYS:HE2  | 11:AE:99:LYS:HD3   | 1.92                     | 0.51              |
| 13:AG:63:GLN:O    | 13:AG:67:ALA:N     | 2.44                     | 0.51              |
| 13:AG:63:GLN:O    | 13:AG:67:ALA:CB    | 2.58                     | 0.51              |
| 16:AJ:57:LEU:O    | 16:AJ:59:ALA:N     | 2.44                     | 0.51              |
| 18:AL:60:ARG:HB2  | 18:AL:60:ARG:HH11  | 1.76                     | 0.51              |
| 18:AL:70:LYS:HD3  | 18:AL:71:ALA:N     | 2.26                     | 0.51              |
| 19:AM:71:LYS:HE2  | 19:AM:93:VAL:CB    | 2.40                     | 0.51              |
| 21:AO:10:ARG:HD2  | 21:AO:97:PHE:CE1   | 2.46                     | 0.51              |
| 21:AO:49:VAL:HG22 | 21:AO:50:ALA:H     | 1.75                     | 0.51              |
| 24:AR:22:LEU:O    | 24:AR:96:VAL:HG22  | 2.10                     | 0.51              |
| 28:AV:8:VAL:HA    | 28:AV:39:ALA:O     | 2.10                     | 0.51              |
| 32:AZ:6:HIS:CE1   | 32:AZ:7:PRO:HD2    | 2.45                     | 0.51              |
| 33:BA:132:C:O5'   | 33:BA:132:C:H6     | 1.94                     | 0.51              |
| 33:BA:349:A:H8    | 33:BA:349:A:O5'    | 1.93                     | 0.51              |
| 33:BA:577:G:H1'   | 33:BA:816:A:N3     | 2.25                     | 0.51              |
| 33:BA:652:U:O2'   | 33:BA:653:U:P      | 2.69                     | 0.51              |
| 33:BA:681:A:O5'   | 33:BA:681:A:H8     | 1.93                     | 0.51              |
| 33:BA:959:A:O2'   | 33:BA:961:U:H5'    | 2.11                     | 0.51              |
| 33:BA:987:G:H2'   | 33:BA:988:G:C8     | 2.46                     | 0.51              |
| 33:BA:1126:U:O2   | 33:BA:1280:A:C2'   | 2.58                     | 0.51              |
| 33:BA:1256:A:C4   | 33:BA:1278:G:C2    | 2.98                     | 0.51              |
| 33:BA:1349:A:OP1  | 41:BI:122:ARG:HB2  | 2.10                     | 0.51              |
| 33:BA:1378:C:H2'  | 33:BA:1378:C:O2    | 2.10                     | 0.51              |
| 33:BA:1497:G:H8   | 33:BA:1497:G:C5'   | 2.24                     | 0.51              |
| 33:BA:1526:G:P    | 53:BU:38:GLU:HB3   | 2.50                     | 0.51              |
| 37:BE:91:SER:OG   | 37:BE:135:VAL:HG12 | 2.11                     | 0.51              |
| 41:BI:55:ASP:O    | 41:BI:59:LYS:HB2   | 2.11                     | 0.51              |
| 44:BL:41:PRO:HA   | 44:BL:89:LEU:HD13  | 1.93                     | 0.51              |
| 52:BT:49:ALA:O    | 52:BT:52:GLU:HB3   | 2.11                     | 0.51              |
| 1:C0:8:THR:HG21   | 8:CB:2021:C:P      | 2.51                     | 0.51              |
| 1:C0:21:LEU:HB2   | 25:CS:23:LEU:HD23  | 1.92                     | 0.51              |
| 3:C2:10:LEU:HD12  | 8:CB:125:A:C2      | 2.46                     | 0.51              |
| 4:C3:41:ARG:NE    | 4:C3:41:ARG:HA     | 2.25                     | 0.51              |
| 5:C4:26:ILE:CD1   | 5:C4:35:GLN:HG2    | 2.40                     | 0.51              |
| 7:CA:20:G:H1'     | 7:CA:64:G:N2       | 2.25                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:CA:50:A:C6      | 7:CA:51:G:C8       | 2.98                     | 0.51              |
| 7:CA:75:G:C5      | 7:CA:76:G:N7       | 2.79                     | 0.51              |
| 8:CB:65:U:O4'     | 26:CT:74:ILE:HD12  | 2.11                     | 0.51              |
| 8:CB:463:G:N1     | 8:CB:467:G:C6      | 2.78                     | 0.51              |
| 8:CB:545:U:C6     | 8:CB:545:U:C3'     | 2.94                     | 0.51              |
| 8:CB:666:A:H2'    | 8:CB:667:U:C5'     | 2.39                     | 0.51              |
| 8:CB:748:G:N7     | 25:CS:90:LYS:HE2   | 2.26                     | 0.51              |
| 8:CB:834:G:N2     | 8:CB:835:C:O2      | 2.43                     | 0.51              |
| 8:CB:980:A:N7     | 8:CB:1136:G:H5'    | 2.26                     | 0.51              |
| 8:CB:988:A:H2     | 8:CB:989:G:N2      | 2.08                     | 0.51              |
| 8:CB:1203:U:C5    | 8:CB:1204:A:N6     | 2.79                     | 0.51              |
| 8:CB:1378:A:C5    | 8:CB:1380:G:C5     | 2.99                     | 0.51              |
| 8:CB:1534:U:H2'   | 8:CB:1536:C:N3     | 2.26                     | 0.51              |
| 8:CB:1562:U:H2'   | 8:CB:1563:U:C6     | 2.39                     | 0.51              |
| 8:CB:1571:A:C2    | 8:CB:1572:A:C4     | 2.99                     | 0.51              |
| 8:CB:1761:C:C2'   | 8:CB:1762:A:H5'    | 2.40                     | 0.51              |
| 8:CB:1833:C:H6    | 8:CB:1833:C:H5''   | 1.75                     | 0.51              |
| 8:CB:1856:U:H2'   | 8:CB:1857:G:O4'    | 2.11                     | 0.51              |
| 8:CB:2092:U:O4    | 8:CB:2226:C:OP2    | 2.29                     | 0.51              |
| 8:CB:2233:U:H6    | 8:CB:2233:U:H3'    | 1.75                     | 0.51              |
| 8:CB:2250:G:N1    | 19:CM:81:ARG:HG2   | 2.26                     | 0.51              |
| 8:CB:2270:A:H4'   | 29:CW:18:LYS:HB3   | 1.92                     | 0.51              |
| 8:CB:2291:U:OP1   | 8:CB:2380:C:O2'    | 2.29                     | 0.51              |
| 8:CB:2435:A:C2    | 8:CB:2436:G:C1'    | 2.94                     | 0.51              |
| 8:CB:2618:G:O2'   | 10:CD:154:LYS:O    | 2.26                     | 0.51              |
| 8:CB:2701:U:H5    | 8:CB:2703:C:OP2    | 1.93                     | 0.51              |
| 8:CB:2739:U:C2'   | 8:CB:2740:A:H5'    | 2.41                     | 0.51              |
| 8:CB:2754:U:O2    | 8:CB:2756:U:OP1    | 2.29                     | 0.51              |
| 8:CB:2756:U:C2    | 8:CB:2759:G:O6     | 2.63                     | 0.51              |
| 9:CC:21:PRO:O     | 9:CC:22:GLU:CB     | 2.58                     | 0.51              |
| 9:CC:61:TYR:CD2   | 9:CC:63:ILE:HD12   | 2.45                     | 0.51              |
| 9:CC:120:ASP:H    | 9:CC:133:ASN:ND2   | 2.09                     | 0.51              |
| 10:CD:29:VAL:HG23 | 10:CD:51:THR:HG22  | 1.93                     | 0.51              |
| 10:CD:77:ARG:NH2  | 10:CD:79:LEU:CB    | 2.72                     | 0.51              |
| 11:CE:85:PHE:O    | 11:CE:86:ALA:HB3   | 2.11                     | 0.51              |
| 11:CE:132:LYS:C   | 11:CE:134:LEU:N    | 2.65                     | 0.51              |
| 12:CF:41:GLU:H    | 12:CF:45:ASP:HB3   | 1.76                     | 0.51              |
| 12:CF:75:GLY:C    | 12:CF:77:LYS:H     | 2.15                     | 0.51              |
| 13:CG:124:CYS:HB3 | 13:CG:130:ILE:HD13 | 1.92                     | 0.51              |
| 14:CH:94:ILE:O    | 14:CH:122:LEU:HG   | 2.11                     | 0.51              |
| 17:CK:98:ARG:NH2  | 33:DA:339:C:OP2    | 2.43                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 18:CL:76:GLU:O    | 18:CL:77:ILE:HG23 | 2.10                     | 0.51              |
| 20:CN:25:ALA:HB1  | 20:CN:48:VAL:HG22 | 1.93                     | 0.51              |
| 21:CO:77:ALA:O    | 21:CO:81:ARG:N    | 2.39                     | 0.51              |
| 23:CQ:40:LYS:HB2  | 23:CQ:40:LYS:HZ3  | 1.73                     | 0.51              |
| 25:CS:37:THR:HA   | 25:CS:48:LYS:HE2  | 1.93                     | 0.51              |
| 26:CT:11:LEU:HD21 | 26:CT:47:VAL:HG23 | 1.92                     | 0.51              |
| 33:DA:65:A:H2     | 33:DA:382:A:C5    | 2.29                     | 0.51              |
| 33:DA:93:U:H2'    | 33:DA:95:C:H5     | 1.76                     | 0.51              |
| 33:DA:130:A:N1    | 33:DA:233:C:O2    | 2.44                     | 0.51              |
| 33:DA:317:U:O2'   | 33:DA:318:G:H5'   | 2.11                     | 0.51              |
| 33:DA:570:G:O4'   | 33:DA:820:U:C2    | 2.64                     | 0.51              |
| 33:DA:600:A:N3    | 33:DA:639:G:C2    | 2.78                     | 0.51              |
| 33:DA:728:A:N3    | 33:DA:729:A:C5    | 2.79                     | 0.51              |
| 33:DA:944:G:C2'   | 33:DA:945:G:H5'   | 2.40                     | 0.51              |
| 33:DA:1049:U:H1'  | 33:DA:1201:A:N7   | 2.25                     | 0.51              |
| 33:DA:1249:C:C6   | 33:DA:1249:C:H5'' | 2.45                     | 0.51              |
| 33:DA:1260:G:H2'  | 33:DA:1275:A:H61  | 1.76                     | 0.51              |
| 33:DA:1277:C:O5'  | 33:DA:1277:C:H6   | 1.94                     | 0.51              |
| 33:DA:1511:G:C2'  | 33:DA:1512:U:H5'  | 2.40                     | 0.51              |
| 35:DC:5:HIS:ND1   | 46:DN:88:MET:HB3  | 2.25                     | 0.51              |
| 37:DE:81:GLN:O    | 37:DE:82:HIS:CB   | 2.58                     | 0.51              |
| 42:DJ:15:HIS:C    | 42:DJ:17:LEU:H    | 2.13                     | 0.51              |
| 53:DU:16:ARG:HA   | 53:DU:19:LYS:CG   | 2.40                     | 0.51              |
| 1:A0:15:ARG:NH1   | 1:A0:16:ARG:NH1   | 2.59                     | 0.51              |
| 3:A2:36:ALA:O     | 3:A2:37:LYS:C     | 2.48                     | 0.51              |
| 7:AA:29:A:C6      | 7:AA:56:G:O6      | 2.64                     | 0.51              |
| 7:AA:38:C:H4'     | 21:AO:100:HIS:NE2 | 2.26                     | 0.51              |
| 7:AA:64:G:C5      | 7:AA:65:U:C5      | 2.99                     | 0.51              |
| 8:AB:128:C:H2'    | 8:AB:129:C:C6     | 2.46                     | 0.51              |
| 8:AB:141:G:H1     | 26:AT:1:MET:HE2   | 1.74                     | 0.51              |
| 8:AB:223:A:C8     | 8:AB:422:A:H1'    | 2.46                     | 0.51              |
| 8:AB:368:A:C4     | 8:AB:369:U:C5     | 2.98                     | 0.51              |
| 8:AB:387:U:C5     | 8:AB:388:G:O6     | 2.63                     | 0.51              |
| 8:AB:442:G:C4     | 8:AB:444:C:C5     | 2.99                     | 0.51              |
| 8:AB:462:C:H3'    | 8:AB:462:C:C6     | 2.46                     | 0.51              |
| 8:AB:463:G:N2     | 8:AB:467:G:C4     | 2.78                     | 0.51              |
| 8:AB:622:G:C2     | 8:AB:623:C:C2     | 2.98                     | 0.51              |
| 8:AB:682:G:C2     | 8:AB:683:U:C5     | 2.99                     | 0.51              |
| 8:AB:688:U:HO2'   | 8:AB:786:C:HO2'   | 1.55                     | 0.51              |
| 8:AB:692:C:O2'    | 8:AB:693:A:H5'    | 2.11                     | 0.51              |
| 8:AB:779:U:O2'    | 8:AB:780:G:H5'    | 2.11                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:992:C:O2'    | 8:AB:993:G:H5'     | 2.11                     | 0.51              |
| 8:AB:1134:A:O5'   | 8:AB:1134:A:C2'    | 2.58                     | 0.51              |
| 8:AB:1304:A:H2'   | 8:AB:1305:C:O4'    | 2.11                     | 0.51              |
| 8:AB:1359:A:H2'   | 8:AB:1360:G:O4'    | 2.11                     | 0.51              |
| 8:AB:1639:C:H2'   | 8:AB:1640:A:H5'    | 1.93                     | 0.51              |
| 8:AB:1772:A:H5'   | 55:AB:4524:HOH:O   | 2.11                     | 0.51              |
| 8:AB:2053:G:H2'   | 8:AB:2054:A:O4'    | 2.11                     | 0.51              |
| 8:AB:2571:U:HO2'  | 8:AB:2572:A:P      | 2.34                     | 0.51              |
| 8:AB:2595:G:O6    | 9:AC:237:ARG:NH2   | 2.44                     | 0.51              |
| 8:AB:2648:G:C2    | 8:AB:2649:C:O2     | 2.63                     | 0.51              |
| 10:AD:58:ASN:N    | 10:AD:58:ASN:ND2   | 2.58                     | 0.51              |
| 10:AD:182:ALA:C   | 10:AD:184:ARG:H    | 2.14                     | 0.51              |
| 11:AE:37:ALA:CA   | 11:AE:40:ARG:HH21  | 2.19                     | 0.51              |
| 11:AE:48:THR:HG22 | 11:AE:49:ARG:N     | 2.26                     | 0.51              |
| 12:AF:103:ILE:HA  | 12:AF:107:VAL:HG21 | 1.93                     | 0.51              |
| 13:AG:172:GLU:O   | 13:AG:173:ALA:HB2  | 2.11                     | 0.51              |
| 14:AH:50:ARG:O    | 14:AH:51:ARG:HG3   | 2.10                     | 0.51              |
| 18:AL:79:LEU:H    | 18:AL:99:ASN:HD21  | 1.59                     | 0.51              |
| 18:AL:105:ILE:H   | 18:AL:105:ILE:CD1  | 2.22                     | 0.51              |
| 19:AM:43:ALA:HB2  | 19:AM:91:TYR:O     | 2.10                     | 0.51              |
| 21:AO:56:LYS:HE3  | 21:AO:59:ALA:O     | 2.11                     | 0.51              |
| 23:AQ:73:ILE:HG13 | 23:AQ:77:LYS:NZ    | 2.26                     | 0.51              |
| 24:AR:41:ILE:O    | 24:AR:41:ILE:HD12  | 2.10                     | 0.51              |
| 27:AU:48:VAL:O    | 27:AU:50:ALA:N     | 2.44                     | 0.51              |
| 28:AV:28:ALA:HB3  | 28:AV:40:ILE:CD1   | 2.40                     | 0.51              |
| 33:BA:507:C:OP2   | 33:BA:508:U:H3'    | 2.10                     | 0.51              |
| 33:BA:577:G:C8    | 33:BA:816:A:C6     | 2.99                     | 0.51              |
| 33:BA:588:G:O6    | 33:BA:589:U:C4     | 2.64                     | 0.51              |
| 33:BA:624:C:C2    | 33:BA:625:U:C6     | 2.98                     | 0.51              |
| 33:BA:908:A:C5    | 33:BA:909:A:N7     | 2.79                     | 0.51              |
| 33:BA:975:A:H4'   | 33:BA:976:G:OP2    | 2.09                     | 0.51              |
| 33:BA:1035:A:H3'  | 33:BA:1035:A:C8    | 2.46                     | 0.51              |
| 33:BA:1038:C:H2'  | 33:BA:1039:G:H8    | 1.75                     | 0.51              |
| 33:BA:1421:G:C6   | 33:BA:1480:A:C6    | 2.99                     | 0.51              |
| 33:BA:1466:C:N3   | 33:BA:1467:C:C5    | 2.78                     | 0.51              |
| 35:BC:75:VAL:HG12 | 35:BC:76:ILE:HD13  | 1.93                     | 0.51              |
| 36:BD:12:ARG:O    | 36:BD:37:PRO:HG3   | 2.11                     | 0.51              |
| 36:BD:57:LYS:HG3  | 36:BD:58:GLN:H     | 1.76                     | 0.51              |
| 38:BF:6:ILE:HD12  | 38:BF:7:VAL:O      | 2.10                     | 0.51              |
| 38:BF:98:GLU:O    | 38:BF:99:ALA:HB2   | 2.11                     | 0.51              |
| 40:BH:9:MET:HE1   | 40:BH:32:LYS:HB3   | 1.92                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BI:56:MET:HA   | 41:BI:59:LYS:HZ2   | 1.76                     | 0.51              |
| 49:BQ:58:VAL:HA   | 49:BQ:78:VAL:HG23  | 1.92                     | 0.51              |
| 4:C3:41:ARG:C     | 4:C3:43:LEU:N      | 2.64                     | 0.51              |
| 8:CB:23:G:C2      | 8:CB:518:G:C2      | 2.99                     | 0.51              |
| 8:CB:138:U:H3'    | 8:CB:138:U:C6      | 2.46                     | 0.51              |
| 8:CB:262:A:C8     | 8:CB:262:A:C3'     | 2.93                     | 0.51              |
| 8:CB:319:G:N2     | 8:CB:320:A:C4      | 2.79                     | 0.51              |
| 8:CB:332:A:N7     | 8:CB:335:C:C4      | 2.79                     | 0.51              |
| 8:CB:362:A:H2'    | 8:CB:363:G:C8      | 2.28                     | 0.51              |
| 8:CB:460:A:C2     | 8:CB:470:A:C4      | 2.99                     | 0.51              |
| 8:CB:579:G:H4'    | 8:CB:2017:U:H2'    | 1.93                     | 0.51              |
| 8:CB:735:A:H3'    | 8:CB:736:C:H6      | 1.75                     | 0.51              |
| 8:CB:953:G:O2'    | 8:CB:2266:A:OP1    | 2.28                     | 0.51              |
| 8:CB:1047:G:N2    | 8:CB:1110:G:C4     | 2.78                     | 0.51              |
| 8:CB:1064:C:H2'   | 8:CB:1065:U:O4'    | 2.10                     | 0.51              |
| 8:CB:1286:A:C6    | 8:CB:1289:C:C4     | 2.99                     | 0.51              |
| 8:CB:1351:C:HO2'  | 8:CB:1571:A:H1'    | 1.75                     | 0.51              |
| 8:CB:1685:C:O2'   | 8:CB:1686:C:H5'    | 2.11                     | 0.51              |
| 8:CB:2230:G:N3    | 8:CB:2231:U:C6     | 2.79                     | 0.51              |
| 8:CB:2250:G:C5    | 19:CM:82:MET:HG3   | 2.46                     | 0.51              |
| 8:CB:2490:G:H4'   | 8:CB:2491:U:H5'    | 1.91                     | 0.51              |
| 8:CB:2587:A:C8    | 8:CB:2587:A:C5'    | 2.94                     | 0.51              |
| 8:CB:2679:A:C2    | 8:CB:2680:U:C5     | 2.99                     | 0.51              |
| 9:CC:124:LYS:CB   | 9:CC:125:PRO:CD    | 2.88                     | 0.51              |
| 9:CC:204:LEU:CB   | 9:CC:210:ALA:HB1   | 2.40                     | 0.51              |
| 10:CD:2:ILE:O     | 10:CD:3:GLY:O      | 2.29                     | 0.51              |
| 10:CD:117:GLY:O   | 10:CD:165:MET:HB2  | 2.09                     | 0.51              |
| 12:CF:7:TYR:HA    | 12:CF:11:VAL:HB    | 1.92                     | 0.51              |
| 12:CF:46:LYS:C    | 12:CF:48:LEU:N     | 2.64                     | 0.51              |
| 13:CG:3:VAL:HG22  | 13:CG:4:ALA:N      | 2.19                     | 0.51              |
| 13:CG:14:VAL:HG12 | 13:CG:16:VAL:HG22  | 1.92                     | 0.51              |
| 15:CI:101:SER:O   | 15:CI:139:VAL:HG13 | 2.11                     | 0.51              |
| 18:CL:71:ALA:O    | 18:CL:72:ALA:C     | 2.49                     | 0.51              |
| 19:CM:16:ARG:NH1  | 19:CM:72:PRO:CG    | 2.62                     | 0.51              |
| 20:CN:20:MET:O    | 20:CN:23:ASN:HB2   | 2.10                     | 0.51              |
| 20:CN:21:PHE:O    | 20:CN:25:ALA:HB3   | 2.11                     | 0.51              |
| 20:CN:42:LYS:HE3  | 20:CN:45:ARG:HH11  | 1.75                     | 0.51              |
| 20:CN:103:ARG:HG2 | 20:CN:103:ARG:NH1  | 2.26                     | 0.51              |
| 24:CR:10:LYS:HD2  | 24:CR:11:GLN:CA    | 2.40                     | 0.51              |
| 24:CR:23:GLU:HA   | 24:CR:96:VAL:HB    | 1.93                     | 0.51              |
| 27:CU:85:ARG:HB2  | 27:CU:86:PHE:HD1   | 1.74                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 27:CU:91:LYS:HB3  | 27:CU:93:ARG:HG2  | 1.92                     | 0.51              |
| 28:CV:70:ILE:CD1  | 28:CV:70:ILE:N    | 2.74                     | 0.51              |
| 28:CV:80:HIS:CD2  | 28:CV:83:LYS:HB2  | 2.45                     | 0.51              |
| 32:CZ:3:LYS:NZ    | 32:CZ:29:GLY:HA3  | 2.26                     | 0.51              |
| 33:DA:71:A:H2'    | 33:DA:71:A:P      | 2.50                     | 0.51              |
| 33:DA:148:G:N3    | 33:DA:1446:A:C2   | 2.79                     | 0.51              |
| 33:DA:479:U:C5    | 33:DA:480:U:H5    | 2.29                     | 0.51              |
| 33:DA:656:G:N2    | 33:DA:751:U:O2    | 2.44                     | 0.51              |
| 33:DA:683:G:H2'   | 33:DA:684:U:C6    | 2.46                     | 0.51              |
| 33:DA:745:G:H4'   | 33:DA:851:G:N3    | 2.26                     | 0.51              |
| 33:DA:800:G:H8    | 33:DA:800:G:O5'   | 1.93                     | 0.51              |
| 33:DA:800:G:O2'   | 33:DA:801:U:H5'   | 2.11                     | 0.51              |
| 33:DA:887:G:H21   | 33:DA:1489:G:H4'  | 1.75                     | 0.51              |
| 33:DA:889:A:H5'   | 33:DA:891:U:C2    | 2.46                     | 0.51              |
| 33:DA:1303:C:H2'  | 33:DA:1304:G:H5'  | 1.91                     | 0.51              |
| 33:DA:1413:A:H2   | 33:DA:1414:U:H1'  | 1.73                     | 0.51              |
| 33:DA:1488:G:C6   | 33:DA:1489:G:C5   | 2.98                     | 0.51              |
| 35:DC:156:LEU:H   | 35:DC:163:ARG:HD3 | 1.76                     | 0.51              |
| 38:DF:53:LYS:HD3  | 38:DF:53:LYS:C    | 2.31                     | 0.51              |
| 39:DG:145:GLU:N   | 39:DG:148:LYS:H   | 2.09                     | 0.51              |
| 40:DH:6:ILE:O     | 40:DH:6:ILE:CG2   | 2.58                     | 0.51              |
| 40:DH:83:ARG:O    | 40:DH:84:ILE:HG13 | 2.10                     | 0.51              |
| 42:DJ:64:GLN:CB   | 46:DN:98:ALA:HB3  | 2.40                     | 0.51              |
| 45:DM:47:LEU:HD11 | 45:DM:52:ILE:CB   | 2.34                     | 0.51              |
| 45:DM:68:LEU:HD13 | 45:DM:69:ARG:NH1  | 2.26                     | 0.51              |
| 46:DN:50:LEU:N    | 46:DN:51:PRO:CD   | 2.72                     | 0.51              |
| 49:DQ:59:GLU:O    | 49:DQ:75:VAL:HG22 | 2.10                     | 0.51              |
| 49:DQ:76:ARG:HG2  | 49:DQ:77:VAL:N    | 2.26                     | 0.51              |
| 1:A0:15:ARG:HA    | 8:AB:2046:G:H4'   | 1.93                     | 0.51              |
| 1:A0:42:ILE:CG1   | 1:A0:44:ALA:HB3   | 2.41                     | 0.51              |
| 2:A1:11:VAL:HG13  | 2:A1:12:SER:N     | 2.26                     | 0.51              |
| 4:A3:26:ALA:O     | 4:A3:27:ASN:CB    | 2.57                     | 0.51              |
| 7:AA:6:G:C4       | 7:AA:7:G:N7       | 2.78                     | 0.51              |
| 8:AB:223:A:C8     | 8:AB:422:A:C1'    | 2.94                     | 0.51              |
| 8:AB:568:U:H4'    | 8:AB:945:A:N6     | 2.25                     | 0.51              |
| 8:AB:639:U:H2'    | 8:AB:640:C:C6     | 2.46                     | 0.51              |
| 8:AB:736:C:H2'    | 8:AB:737:C:C6     | 2.45                     | 0.51              |
| 8:AB:772:C:N3     | 8:AB:773:U:C5     | 2.79                     | 0.51              |
| 8:AB:915:C:H3'    | 8:AB:916:G:C8     | 2.46                     | 0.51              |
| 8:AB:993:G:H2'    | 8:AB:994:C:H5'    | 1.93                     | 0.51              |
| 8:AB:1034:G:N1    | 8:AB:1122:G:C5    | 2.79                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1298:C:O4'    | 8:AB:1302:A:C2     | 2.64                     | 0.51              |
| 8:AB:1354:A:H2'    | 8:AB:1355:G:O4'    | 2.11                     | 0.51              |
| 8:AB:1420:A:C4     | 8:AB:2211:A:C8     | 2.99                     | 0.51              |
| 8:AB:1569:A:C6     | 8:AB:1570:A:C5     | 2.99                     | 0.51              |
| 8:AB:1809:A:C2     | 8:AB:1810:A:C4     | 2.99                     | 0.51              |
| 8:AB:1829:A:N7     | 8:AB:1830:C:C5     | 2.79                     | 0.51              |
| 8:AB:1873:G:C2'    | 8:AB:1874:C:H5'    | 2.41                     | 0.51              |
| 8:AB:2003:A:C2'    | 8:AB:2004:G:O5'    | 2.59                     | 0.51              |
| 8:AB:2071:A:C2     | 8:AB:2072:C:N3     | 2.79                     | 0.51              |
| 8:AB:2150:C:H2'    | 8:AB:2151:U:O4'    | 2.11                     | 0.51              |
| 8:AB:2427:C:H41    | 29:AW:3:LYS:HE3    | 1.76                     | 0.51              |
| 8:AB:2515:C:C2'    | 8:AB:2516:A:O5'    | 2.58                     | 0.51              |
| 8:AB:2543:G:C6     | 8:AB:2544:G:C6     | 2.99                     | 0.51              |
| 9:AC:11:GLY:O      | 9:AC:12:ARG:CB     | 2.59                     | 0.51              |
| 9:AC:52:HIS:C      | 9:AC:53:ILE:HD12   | 2.31                     | 0.51              |
| 9:AC:158:GLY:N     | 9:AC:197:ALA:HB2   | 2.26                     | 0.51              |
| 9:AC:184:GLU:O     | 9:AC:187:CYS:SG    | 2.69                     | 0.51              |
| 10:AD:1:MET:H2     | 10:AD:81:GLU:CB    | 2.23                     | 0.51              |
| 10:AD:45:TYR:O     | 10:AD:46:ARG:HB2   | 2.11                     | 0.51              |
| 11:AE:133:LEU:HD12 | 11:AE:136:GLN:HG3  | 1.93                     | 0.51              |
| 16:AJ:3:THR:O      | 16:AJ:4:PHE:HB3    | 2.09                     | 0.51              |
| 17:AK:2:ILE:HA     | 17:AK:33:ALA:H     | 1.74                     | 0.51              |
| 18:AL:110:VAL:O    | 18:AL:111:ILE:HD13 | 2.11                     | 0.51              |
| 24:AR:28:ALA:CB    | 24:AR:69:GLY:HA3   | 2.41                     | 0.51              |
| 24:AR:74:ILE:HA    | 24:AR:90:ARG:CZ    | 2.41                     | 0.51              |
| 26:AT:10:VAL:HG23  | 26:AT:11:LEU:N     | 2.25                     | 0.51              |
| 29:AW:48:ALA:O     | 29:AW:49:ASN:CB    | 2.56                     | 0.51              |
| 33:BA:15:G:C2      | 33:BA:16:A:C8      | 2.99                     | 0.51              |
| 33:BA:397:A:N6     | 33:BA:548:G:C4     | 2.79                     | 0.51              |
| 33:BA:481:G:H3'    | 33:BA:481:G:C8     | 2.46                     | 0.51              |
| 33:BA:577:G:C5     | 33:BA:816:A:N1     | 2.79                     | 0.51              |
| 33:BA:585:G:C2'    | 33:BA:586:C:H5'    | 2.41                     | 0.51              |
| 33:BA:671:G:N2     | 33:BA:736:C:C2     | 2.79                     | 0.51              |
| 33:BA:827:U:O2     | 33:BA:874:G:C2     | 2.64                     | 0.51              |
| 33:BA:886:G:N2     | 33:BA:912:C:O2     | 2.44                     | 0.51              |
| 33:BA:1120:C:H5''  | 33:BA:1121:U:OP2   | 2.11                     | 0.51              |
| 33:BA:1226:C:C4'   | 33:BA:1227:A:OP1   | 2.59                     | 0.51              |
| 33:BA:1251:A:C5    | 33:BA:1252:A:N7    | 2.79                     | 0.51              |
| 33:BA:1255:G:N2    | 33:BA:1276:G:H22   | 2.08                     | 0.51              |
| 33:BA:1329:A:OP1   | 45:BM:28:ARG:CB    | 2.59                     | 0.51              |
| 33:BA:1360:A:H61   | 33:BA:1361:G:N2    | 2.09                     | 0.51              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1477:U:N3    | 33:BA:1478:U:C4    | 2.78                     | 0.51              |
| 36:BD:97:LEU:CD2   | 36:BD:129:VAL:HG11 | 2.41                     | 0.51              |
| 36:BD:101:VAL:CG1  | 36:BD:113:ALA:HB1  | 2.40                     | 0.51              |
| 36:BD:200:VAL:HG22 | 36:BD:201:GLU:N    | 2.26                     | 0.51              |
| 37:BE:12:GLU:HG2   | 37:BE:38:VAL:HG22  | 1.92                     | 0.51              |
| 41:BI:80:HIS:HD2   | 41:BI:84:ARG:NH1   | 2.07                     | 0.51              |
| 1:C0:5:ASN:HD22    | 8:CB:2019:A:H62    | 1.57                     | 0.51              |
| 5:C4:28:SER:OG     | 5:C4:29:ALA:N      | 2.44                     | 0.51              |
| 8:CB:107:G:C8      | 8:CB:107:G:H3'     | 2.46                     | 0.51              |
| 8:CB:147:C:O5'     | 8:CB:147:C:H6      | 1.94                     | 0.51              |
| 8:CB:382:A:C2      | 8:CB:383:C:C1'     | 2.93                     | 0.51              |
| 8:CB:565:C:C2      | 8:CB:577:G:C2      | 2.99                     | 0.51              |
| 8:CB:805:G:O6      | 8:CB:2068:U:H5''   | 2.09                     | 0.51              |
| 8:CB:993:G:H5''    | 24:CR:77:PHE:HE2   | 1.75                     | 0.51              |
| 8:CB:1355:G:O2'    | 8:CB:1356:G:H5'    | 2.10                     | 0.51              |
| 8:CB:1394:U:H3     | 8:CB:1395:A:N6     | 2.09                     | 0.51              |
| 8:CB:1566:A:C5     | 9:CC:213:ARG:NH1   | 2.79                     | 0.51              |
| 8:CB:1797:G:C2     | 8:CB:1823:G:C2     | 2.98                     | 0.51              |
| 8:CB:1810:A:H2'    | 8:CB:1811:G:O4'    | 2.11                     | 0.51              |
| 8:CB:1947:C:N3     | 8:CB:1960:A:C2     | 2.79                     | 0.51              |
| 8:CB:2025:C:C3'    | 8:CB:2026:U:H6     | 2.24                     | 0.51              |
| 8:CB:2088:A:H3'    | 8:CB:2088:A:C8     | 2.45                     | 0.51              |
| 8:CB:2328:A:O5'    | 8:CB:2328:A:H8     | 1.94                     | 0.51              |
| 8:CB:2387:U:H5     | 55:CB:5409:HOH:O   | 1.93                     | 0.51              |
| 8:CB:2439:A:H4'    | 8:CB:2440:C:H5''   | 1.92                     | 0.51              |
| 8:CB:2443:C:H2'    | 8:CB:2444:G:C8     | 2.46                     | 0.51              |
| 8:CB:2766:A:H5''   | 8:CB:2767:C:OP2    | 2.11                     | 0.51              |
| 8:CB:2774:C:H2'    | 8:CB:2775:G:O4'    | 2.10                     | 0.51              |
| 8:CB:2811:G:C6     | 8:CB:2890:G:N2     | 2.79                     | 0.51              |
| 10:CD:54:ALA:HB1   | 10:CD:56:LYS:HB2   | 1.93                     | 0.51              |
| 10:CD:88:GLU:O     | 10:CD:89:GLU:C     | 2.49                     | 0.51              |
| 13:CG:37:ASN:OD1   | 13:CG:63:GLN:CG    | 2.59                     | 0.51              |
| 13:CG:120:ILE:HG12 | 13:CG:134:GLY:HA3  | 1.92                     | 0.51              |
| 15:CI:27:LEU:CB    | 15:CI:58:ILE:HD13  | 2.40                     | 0.51              |
| 18:CL:83:ALA:O     | 18:CL:84:LYS:HB2   | 2.10                     | 0.51              |
| 19:CM:61:GLY:N     | 19:CM:105:MET:SD   | 2.84                     | 0.51              |
| 21:CO:14:ALA:O     | 21:CO:15:ARG:C     | 2.49                     | 0.51              |
| 21:CO:40:ILE:HG22  | 21:CO:46:GLU:CB    | 2.40                     | 0.51              |
| 23:CQ:97:ILE:CD1   | 24:CR:13:ARG:HG2   | 2.41                     | 0.51              |
| 25:CS:4:ILE:HG12   | 25:CS:106:VAL:CG1  | 2.41                     | 0.51              |
| 29:CW:23:LYS:HB2   | 29:CW:23:LYS:HZ1   | 1.74                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 32:CZ:33:ASN:HB3  | 32:CZ:46:GLY:HA2  | 1.93                     | 0.51              |
| 32:CZ:56:ARG:CG   | 32:CZ:56:ARG:NH1  | 2.71                     | 0.51              |
| 33:DA:39:G:O6     | 33:DA:404:G:C6    | 2.64                     | 0.51              |
| 33:DA:72:A:O2'    | 33:DA:73:C:H5'    | 2.11                     | 0.51              |
| 33:DA:77:A:C8     | 33:DA:77:A:C3'    | 2.93                     | 0.51              |
| 33:DA:327:A:C6    | 33:DA:329:A:C5    | 2.99                     | 0.51              |
| 33:DA:376:G:C6    | 33:DA:389:A:C2    | 2.99                     | 0.51              |
| 33:DA:397:A:C6    | 33:DA:548:G:N7    | 2.79                     | 0.51              |
| 33:DA:582:C:H3'   | 33:DA:582:C:C6    | 2.46                     | 0.51              |
| 33:DA:851:G:H2'   | 33:DA:852:G:H5'   | 1.93                     | 0.51              |
| 33:DA:859:G:C2'   | 33:DA:860:A:C8    | 2.93                     | 0.51              |
| 33:DA:1256:A:C6   | 33:DA:1278:G:C4   | 2.99                     | 0.51              |
| 33:DA:1404:C:H42  | 33:DA:1497:G:H1   | 1.58                     | 0.51              |
| 33:DA:1425:U:H3'  | 33:DA:1425:U:H6   | 1.67                     | 0.51              |
| 33:DA:1465:A:H2'  | 33:DA:1466:C:C6   | 2.46                     | 0.51              |
| 34:DB:30:ILE:HG21 | 34:DB:38:HIS:HB3  | 1.92                     | 0.51              |
| 36:DD:32:LYS:O    | 36:DD:32:LYS:HG3  | 2.09                     | 0.51              |
| 39:DG:121:ASN:O   | 39:DG:124:SER:HB2 | 2.10                     | 0.51              |
| 39:DG:144:ALA:HA  | 39:DG:147:ASN:CB  | 2.41                     | 0.51              |
| 44:DL:66:ILE:HD11 | 44:DL:73:LEU:CD1  | 2.38                     | 0.51              |
| 7:AA:6:G:C8       | 7:AA:6:G:C3'      | 2.94                     | 0.50              |
| 7:AA:114:C:O2'    | 21:AO:49:VAL:HG11 | 2.11                     | 0.50              |
| 8:AB:121:G:H5'    | 8:AB:148:U:H3'    | 1.92                     | 0.50              |
| 8:AB:167:A:N6     | 8:AB:168:G:C2     | 2.79                     | 0.50              |
| 8:AB:308:G:N2     | 8:AB:477:A:C8     | 2.80                     | 0.50              |
| 8:AB:535:G:O2'    | 23:AQ:52:ARG:HG2  | 2.11                     | 0.50              |
| 8:AB:608:A:C8     | 8:AB:621:A:N6     | 2.78                     | 0.50              |
| 8:AB:729:G:H5''   | 8:AB:763:G:OP2    | 2.11                     | 0.50              |
| 8:AB:1031:G:N2    | 8:AB:1124:G:C4    | 2.79                     | 0.50              |
| 8:AB:1104:C:H2'   | 8:AB:1105:U:C6    | 2.45                     | 0.50              |
| 8:AB:1265:A:O4'   | 8:AB:1267:U:C6    | 2.64                     | 0.50              |
| 8:AB:1350:C:N4    | 8:AB:1382:G:C6    | 2.79                     | 0.50              |
| 8:AB:1351:C:O4'   | 8:AB:1572:A:H1'   | 2.11                     | 0.50              |
| 8:AB:1394:U:N3    | 8:AB:1395:A:C6    | 2.79                     | 0.50              |
| 8:AB:1564:C:N3    | 8:AB:1565:C:N4    | 2.59                     | 0.50              |
| 8:AB:1899:A:C8    | 8:AB:1899:A:H3'   | 2.46                     | 0.50              |
| 8:AB:1947:C:C2    | 8:AB:1948:G:C8    | 2.99                     | 0.50              |
| 8:AB:1977:A:N1    | 8:AB:1978:A:N3    | 2.59                     | 0.50              |
| 8:AB:2079:U:H3    | 8:AB:2241:A:H61   | 1.59                     | 0.50              |
| 8:AB:2303:G:C6    | 8:AB:2304:G:C8    | 3.00                     | 0.50              |
| 8:AB:2365:G:H4'   | 29:AW:65:LYS:CE   | 2.41                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2386:A:H2'   | 8:AB:2387:U:C6     | 2.47                     | 0.50              |
| 8:AB:2589:A:H2    | 8:AB:2590:A:C4     | 2.29                     | 0.50              |
| 8:AB:2722:G:C4    | 8:AB:2723:C:C6     | 2.99                     | 0.50              |
| 8:AB:2738:A:N1    | 8:AB:2739:U:C2     | 2.78                     | 0.50              |
| 9:AC:140:VAL:O    | 9:AC:141:HIS:CB    | 2.53                     | 0.50              |
| 10:AD:20:VAL:O    | 10:AD:22:ILE:HB    | 2.11                     | 0.50              |
| 10:AD:37:VAL:HG22 | 10:AD:42:ASN:CB    | 2.41                     | 0.50              |
| 10:AD:112:THR:O   | 10:AD:113:SER:C    | 2.50                     | 0.50              |
| 11:AE:38:GLY:C    | 11:AE:40:ARG:H     | 2.15                     | 0.50              |
| 11:AE:42:GLY:O    | 11:AE:43:THR:HB    | 2.10                     | 0.50              |
| 11:AE:144:GLU:C   | 11:AE:146:VAL:N    | 2.64                     | 0.50              |
| 12:AF:46:LYS:C    | 12:AF:48:LEU:N     | 2.63                     | 0.50              |
| 12:AF:64:PRO:HA   | 12:AF:88:VAL:CG2   | 2.40                     | 0.50              |
| 13:AG:107:GLY:O   | 13:AG:108:PHE:C    | 2.49                     | 0.50              |
| 14:AH:8:LYS:HB2   | 14:AH:13:GLY:O     | 2.11                     | 0.50              |
| 18:AL:93:ASN:O    | 18:AL:94:THR:HG22  | 2.10                     | 0.50              |
| 20:AN:17:ARG:O    | 20:AN:18:GLN:C     | 2.49                     | 0.50              |
| 20:AN:65:LEU:HD23 | 20:AN:69:ARG:CZ    | 2.41                     | 0.50              |
| 21:AO:65:THR:HG23 | 21:AO:68:LYS:HE2   | 1.93                     | 0.50              |
| 21:AO:98:GLN:NE2  | 21:AO:99:TYR:N     | 2.54                     | 0.50              |
| 23:AQ:16:ILE:O    | 23:AQ:17:LEU:C     | 2.49                     | 0.50              |
| 25:AS:19:LEU:O    | 25:AS:20:VAL:C     | 2.49                     | 0.50              |
| 30:AX:28:LEU:HB3  | 30:AX:34:SER:CB    | 2.35                     | 0.50              |
| 31:AY:6:ILE:O     | 31:AY:6:ILE:HD13   | 2.11                     | 0.50              |
| 31:AY:7:THR:OG1   | 31:AY:55:LYS:O     | 2.28                     | 0.50              |
| 33:BA:41:G:O6     | 33:BA:402:G:C6     | 2.65                     | 0.50              |
| 33:BA:378:G:C2    | 33:BA:386:C:N3     | 2.79                     | 0.50              |
| 33:BA:644:U:H3'   | 33:BA:644:U:C6     | 2.46                     | 0.50              |
| 33:BA:774:G:C5    | 33:BA:775:G:C6     | 2.99                     | 0.50              |
| 33:BA:825:A:H61   | 33:BA:876:C:N4     | 2.09                     | 0.50              |
| 33:BA:865:A:C5    | 33:BA:866:C:C5     | 2.99                     | 0.50              |
| 33:BA:876:C:H1'   | 40:BH:11:THR:OG1   | 2.11                     | 0.50              |
| 33:BA:1143:G:O5'  | 33:BA:1143:G:C8    | 2.63                     | 0.50              |
| 33:BA:1162:C:H3'  | 33:BA:1162:C:C6    | 2.46                     | 0.50              |
| 33:BA:1163:A:C6   | 33:BA:1164:G:C6    | 2.99                     | 0.50              |
| 35:BC:21:TRP:HZ3  | 35:BC:31:ASN:HD22  | 1.58                     | 0.50              |
| 36:BD:84:ASN:ND2  | 36:BD:87:GLU:N     | 2.43                     | 0.50              |
| 36:BD:151:GLN:HB3 | 36:BD:154:VAL:HG12 | 1.93                     | 0.50              |
| 38:BF:7:VAL:CG2   | 38:BF:8:PHE:N      | 2.73                     | 0.50              |
| 42:BJ:18:ILE:HD12 | 42:BJ:72:ARG:HG3   | 1.93                     | 0.50              |
| 46:BN:12:ARG:NH1  | 46:BN:60:ARG:NH1   | 2.57                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:BS:35:ARG:CG   | 51:BS:50:VAL:HG13 | 2.41                     | 0.50              |
| 53:BU:28:LEU:O    | 53:BU:32:ARG:N    | 2.36                     | 0.50              |
| 3:C2:26:ASN:ND2   | 3:C2:26:ASN:H     | 2.09                     | 0.50              |
| 3:C2:36:ALA:O     | 3:C2:37:LYS:C     | 2.50                     | 0.50              |
| 3:C2:44:VAL:O     | 3:C2:45:SER:O     | 2.30                     | 0.50              |
| 7:CA:46:A:N1      | 7:CA:47:C:C2      | 2.79                     | 0.50              |
| 7:CA:76:G:N3      | 7:CA:77:U:C6      | 2.79                     | 0.50              |
| 8:CB:237:C:C2     | 8:CB:261:G:C2     | 2.99                     | 0.50              |
| 8:CB:336:C:O2'    | 8:CB:337:C:H5'    | 2.10                     | 0.50              |
| 8:CB:370:G:O2'    | 8:CB:424:G:OP1    | 2.29                     | 0.50              |
| 8:CB:387:U:C5     | 8:CB:388:G:O6     | 2.65                     | 0.50              |
| 8:CB:585:G:C4     | 8:CB:1251:C:C4    | 3.00                     | 0.50              |
| 8:CB:638:G:C2     | 8:CB:639:U:C2     | 2.99                     | 0.50              |
| 8:CB:665:U:O2'    | 8:CB:666:A:H5'    | 2.11                     | 0.50              |
| 8:CB:822:G:C6     | 8:CB:836:G:C2     | 3.00                     | 0.50              |
| 8:CB:861:A:C5'    | 8:CB:862:G:OP2    | 2.53                     | 0.50              |
| 8:CB:863:A:O5'    | 8:CB:863:A:C8     | 2.61                     | 0.50              |
| 8:CB:945:A:C4     | 8:CB:2448:A:C2    | 2.99                     | 0.50              |
| 8:CB:1017:G:H2'   | 8:CB:1018:U:C6    | 2.46                     | 0.50              |
| 8:CB:1063:G:N2    | 8:CB:1074:G:H1    | 2.09                     | 0.50              |
| 8:CB:1392:A:C5    | 8:CB:1393:A:C6    | 2.99                     | 0.50              |
| 8:CB:1408:G:N7    | 8:CB:1409:U:C5    | 2.79                     | 0.50              |
| 8:CB:1679:A:C2'   | 8:CB:1680:U:H5'   | 2.41                     | 0.50              |
| 8:CB:1956:U:H1'   | 8:CB:2552:U:OP1   | 2.12                     | 0.50              |
| 8:CB:2255:G:C4    | 8:CB:2256:G:C8    | 3.00                     | 0.50              |
| 8:CB:2455:G:N2    | 8:CB:2456:C:C2    | 2.80                     | 0.50              |
| 8:CB:2471:A:N6    | 8:CB:2479:U:H3    | 2.08                     | 0.50              |
| 8:CB:2719:G:H8    | 8:CB:2719:G:C5'   | 2.24                     | 0.50              |
| 8:CB:2747:G:H21   | 8:CB:2757:A:N6    | 2.09                     | 0.50              |
| 8:CB:2800:A:C2    | 8:CB:2801:G:C4    | 2.99                     | 0.50              |
| 9:CC:119:VAL:HG13 | 9:CC:133:ASN:ND2  | 2.27                     | 0.50              |
| 9:CC:244:VAL:H    | 9:CC:249:VAL:CG2  | 2.24                     | 0.50              |
| 10:CD:22:ILE:O    | 10:CD:22:ILE:CG2  | 2.59                     | 0.50              |
| 10:CD:137:SER:O   | 10:CD:138:LEU:CB  | 2.58                     | 0.50              |
| 11:CE:134:LEU:CD2 | 11:CE:135:ALA:N   | 2.74                     | 0.50              |
| 11:CE:144:GLU:CG  | 11:CE:166:LYS:HE2 | 2.37                     | 0.50              |
| 12:CF:2:LYS:HA    | 12:CF:2:LYS:CE    | 2.38                     | 0.50              |
| 12:CF:30:VAL:O    | 12:CF:31:GLU:C    | 2.50                     | 0.50              |
| 13:CG:6:ALA:CB    | 13:CG:7:PRO:HD3   | 2.35                     | 0.50              |
| 14:CH:44:ILE:O    | 14:CH:48:GLU:HB3  | 2.11                     | 0.50              |
| 18:CL:128:THR:O   | 18:CL:129:LYS:C   | 2.49                     | 0.50              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 19:CM:40:ARG:HG3 | 19:CM:92:TRP:CD2   | 2.46                     | 0.50              |
| 22:CP:26:GLU:HA  | 22:CP:47:ILE:CB    | 2.39                     | 0.50              |
| 23:CQ:112:ALA:C  | 23:CQ:114:ALA:N    | 2.63                     | 0.50              |
| 25:CS:60:HIS:O   | 25:CS:60:HIS:CG    | 2.64                     | 0.50              |
| 28:CV:51:GLN:HB2 | 28:CV:57:TYR:OH    | 2.10                     | 0.50              |
| 29:CW:53:GLY:O   | 29:CW:54:ARG:HB2   | 2.10                     | 0.50              |
| 31:CY:40:THR:CG2 | 31:CY:43:ILE:HG22  | 2.41                     | 0.50              |
| 31:CY:58:GLU:HG3 | 31:CY:58:GLU:OXT   | 2.11                     | 0.50              |
| 33:DA:15:G:N1    | 33:DA:16:A:C5      | 2.78                     | 0.50              |
| 33:DA:16:A:N1    | 33:DA:919:A:C2     | 2.79                     | 0.50              |
| 33:DA:125:U:C2   | 33:DA:126:G:N7     | 2.79                     | 0.50              |
| 33:DA:189:A:C5'  | 33:DA:189:A:C8     | 2.94                     | 0.50              |
| 33:DA:403:C:C2   | 33:DA:404:G:C8     | 2.98                     | 0.50              |
| 33:DA:414:A:C5   | 33:DA:415:A:C2     | 2.99                     | 0.50              |
| 33:DA:514:C:H5'' | 33:DA:514:C:C6     | 2.43                     | 0.50              |
| 33:DA:600:A:H1'  | 33:DA:639:G:H22    | 1.75                     | 0.50              |
| 33:DA:720:C:H5'' | 33:DA:721:G:O2'    | 2.11                     | 0.50              |
| 33:DA:1105:A:C2  | 33:DA:1106:G:C8    | 3.00                     | 0.50              |
| 33:DA:1179:A:O2' | 41:DI:104:THR:HG23 | 2.11                     | 0.50              |
| 33:DA:1319:A:C5  | 33:DA:1323:G:N3    | 2.79                     | 0.50              |
| 35:DC:17:TRP:C   | 35:DC:19:SER:H     | 2.14                     | 0.50              |
| 36:DD:102:TYR:C  | 36:DD:104:MET:N    | 2.64                     | 0.50              |
| 38:DF:98:GLU:O   | 38:DF:99:ALA:HB3   | 2.10                     | 0.50              |
| 39:DG:60:ALA:O   | 39:DG:64:ALA:HB3   | 2.10                     | 0.50              |
| 40:DH:38:VAL:C   | 40:DH:39:LEU:HD13  | 2.32                     | 0.50              |
| 42:DJ:65:TYR:OH  | 46:DN:84:ARG:NH1   | 2.45                     | 0.50              |
| 48:DP:39:PHE:CE1 | 48:DP:74:LEU:HD22  | 2.45                     | 0.50              |
| 1:A0:9:ARG:O     | 1:A0:12:ARG:N      | 2.43                     | 0.50              |
| 6:A5:157:LYS:CD  | 6:A5:157:LYS:N     | 2.75                     | 0.50              |
| 7:AA:78:A:H2'    | 7:AA:79:G:H8       | 1.76                     | 0.50              |
| 8:AB:49:A:H1'    | 8:AB:51:G:C5       | 2.46                     | 0.50              |
| 8:AB:84:A:OP1    | 27:AU:2:ALA:CB     | 2.58                     | 0.50              |
| 8:AB:116:C:H3'   | 8:AB:117:G:H8      | 1.76                     | 0.50              |
| 8:AB:124:G:H8    | 8:AB:124:G:C5'     | 2.20                     | 0.50              |
| 8:AB:129:C:O2'   | 8:AB:130:C:O4'     | 2.30                     | 0.50              |
| 8:AB:324:A:N7    | 8:AB:325:G:C8      | 2.80                     | 0.50              |
| 8:AB:486:C:C2    | 8:AB:495:G:N2      | 2.79                     | 0.50              |
| 8:AB:630:G:C5    | 8:AB:632:A:OP2     | 2.65                     | 0.50              |
| 8:AB:953:G:N2    | 8:AB:964:C:O2      | 2.44                     | 0.50              |
| 8:AB:1157:G:N2   | 31:AY:10:ARG:HH12  | 2.09                     | 0.50              |
| 8:AB:1162:G:C8   | 8:AB:1162:G:C3'    | 2.95                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1285:A:C6     | 8:AB:1329:U:C5     | 3.00                     | 0.50              |
| 8:AB:1321:A:H8     | 8:AB:1321:A:H5''   | 1.76                     | 0.50              |
| 8:AB:1584:U:H5''   | 8:AB:1585:C:C5     | 2.47                     | 0.50              |
| 8:AB:1694:C:C6     | 8:AB:1694:C:H5''   | 2.46                     | 0.50              |
| 8:AB:1796:U:N3     | 8:AB:1797:G:N7     | 2.59                     | 0.50              |
| 8:AB:1907:G:C2     | 8:AB:1924:C:O2     | 2.64                     | 0.50              |
| 8:AB:2001:C:N3     | 8:AB:2002:G:C8     | 2.79                     | 0.50              |
| 8:AB:2010:G:H3'    | 8:AB:2010:G:C8     | 2.46                     | 0.50              |
| 8:AB:2207:C:N3     | 8:AB:2218:G:C2     | 2.80                     | 0.50              |
| 8:AB:2524:G:N2     | 8:AB:2525:G:H1'    | 2.26                     | 0.50              |
| 8:AB:2714:G:H2'    | 8:AB:2715:C:C6     | 2.46                     | 0.50              |
| 9:AC:137:GLY:HA3   | 9:AC:163:ILE:HG13  | 1.94                     | 0.50              |
| 9:AC:156:SER:O     | 9:AC:194:VAL:O     | 2.28                     | 0.50              |
| 9:AC:163:ILE:HG22  | 9:AC:172:THR:CG2   | 2.40                     | 0.50              |
| 10:AD:11:MET:CE    | 22:AP:57:ALA:HB2   | 2.42                     | 0.50              |
| 10:AD:40:LEU:O     | 10:AD:41:ALA:HB3   | 2.11                     | 0.50              |
| 10:AD:191:GLY:O    | 10:AD:192:ALA:CB   | 2.60                     | 0.50              |
| 11:AE:175:ILE:HG23 | 11:AE:176:ASP:H    | 1.76                     | 0.50              |
| 13:AG:100:ASN:HA   | 13:AG:116:LEU:CB   | 2.41                     | 0.50              |
| 16:AJ:39:LYS:O     | 16:AJ:41:LYS:O     | 2.29                     | 0.50              |
| 16:AJ:77:HIS:HB2   | 16:AJ:85:LYS:CE    | 2.41                     | 0.50              |
| 17:AK:71:ARG:CB    | 17:AK:72:PRO:CD    | 2.75                     | 0.50              |
| 18:AL:79:LEU:HD12  | 18:AL:79:LEU:H     | 1.75                     | 0.50              |
| 18:AL:85:VAL:HG12  | 18:AL:86:GLU:OE2   | 2.11                     | 0.50              |
| 18:AL:86:GLU:HA    | 18:AL:96:LYS:HG2   | 1.94                     | 0.50              |
| 20:AN:69:ARG:NH1   | 20:AN:69:ARG:CG    | 2.73                     | 0.50              |
| 21:AO:76:LYS:HE2   | 21:AO:110:ALA:HA   | 1.93                     | 0.50              |
| 21:AO:95:SER:O     | 21:AO:97:PHE:N     | 2.43                     | 0.50              |
| 23:AQ:35:PHE:HA    | 23:AQ:38:VAL:HG13  | 1.92                     | 0.50              |
| 26:AT:58:VAL:HG12  | 26:AT:59:ASN:H     | 1.76                     | 0.50              |
| 33:BA:19:A:H5''    | 33:BA:19:A:C8      | 2.47                     | 0.50              |
| 33:BA:44:A:OP2     | 48:BP:12:LYS:HG3   | 2.10                     | 0.50              |
| 33:BA:684:U:O2'    | 33:BA:685:G:H5'    | 2.11                     | 0.50              |
| 33:BA:688:G:C5     | 33:BA:700:G:N2     | 2.79                     | 0.50              |
| 33:BA:973:G:H3'    | 33:BA:974:A:C5'    | 2.41                     | 0.50              |
| 33:BA:1226:C:H6    | 33:BA:1226:C:O5'   | 1.93                     | 0.50              |
| 34:BB:23:ASN:HD22  | 34:BB:24:PRO:N     | 2.09                     | 0.50              |
| 37:BE:137:ARG:HA   | 37:BE:140:ILE:HD12 | 1.93                     | 0.50              |
| 38:BF:25:TYR:CD2   | 38:BF:74:LEU:HD11  | 2.46                     | 0.50              |
| 40:BH:58:LEU:HD23  | 40:BH:59:GLU:N     | 2.26                     | 0.50              |
| 41:BI:29:ILE:CG2   | 41:BI:64:ILE:HB    | 2.41                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BJ:44:THR:HG23 | 42:BJ:69:THR:O    | 2.11                     | 0.50              |
| 2:C1:53:ILE:HG22  | 2:C1:54:LYS:H     | 1.76                     | 0.50              |
| 4:C3:53:ASP:O     | 4:C3:57:VAL:HG12  | 2.11                     | 0.50              |
| 7:CA:38:C:C2      | 7:CA:44:G:N2      | 2.75                     | 0.50              |
| 7:CA:42:C:O2      | 7:CA:43:C:H1'     | 2.10                     | 0.50              |
| 7:CA:59:A:C5      | 7:CA:60:C:C4      | 3.00                     | 0.50              |
| 7:CA:71:C:C2      | 7:CA:72:G:C8      | 2.99                     | 0.50              |
| 7:CA:73:A:N7      | 7:CA:74:U:C5      | 2.79                     | 0.50              |
| 8:CB:41:C:H6      | 8:CB:41:C:O5'     | 1.94                     | 0.50              |
| 8:CB:458:G:N2     | 8:CB:469:G:H2'    | 2.18                     | 0.50              |
| 8:CB:524:G:C6     | 8:CB:525:U:C5     | 3.00                     | 0.50              |
| 8:CB:577:G:O2'    | 8:CB:1254:A:OP1   | 2.28                     | 0.50              |
| 8:CB:630:G:C5     | 8:CB:632:A:OP2    | 2.65                     | 0.50              |
| 8:CB:671:C:H42    | 8:CB:809:G:H1     | 1.57                     | 0.50              |
| 8:CB:755:U:H2'    | 8:CB:756:A:C8     | 2.45                     | 0.50              |
| 8:CB:799:G:C5     | 8:CB:800:A:C6     | 2.99                     | 0.50              |
| 8:CB:1164:C:N4    | 8:CB:1165:A:N6    | 2.59                     | 0.50              |
| 8:CB:1227:G:H2'   | 8:CB:1228:G:O4'   | 2.10                     | 0.50              |
| 8:CB:1275:A:C2'   | 8:CB:1276:A:O5'   | 2.59                     | 0.50              |
| 8:CB:1413:A:O5'   | 8:CB:1413:A:C8    | 2.60                     | 0.50              |
| 8:CB:1541:C:H2'   | 8:CB:1542:U:O4'   | 2.11                     | 0.50              |
| 8:CB:1581:G:H8    | 8:CB:1581:G:O5'   | 1.95                     | 0.50              |
| 8:CB:1601:G:OP1   | 26:CT:62:VAL:HG11 | 2.11                     | 0.50              |
| 8:CB:1608:A:C5    | 8:CB:1611:C:C5    | 2.99                     | 0.50              |
| 8:CB:1737:G:N1    | 8:CB:1738:G:N2    | 2.60                     | 0.50              |
| 8:CB:1840:G:C4    | 8:CB:1841:U:C6    | 2.99                     | 0.50              |
| 8:CB:2044:C:N4    | 8:CB:2045:C:H41   | 2.09                     | 0.50              |
| 8:CB:2104:C:C6    | 8:CB:2104:C:C3'   | 2.89                     | 0.50              |
| 8:CB:2225:A:H5''  | 8:CB:2226:C:H5'   | 1.93                     | 0.50              |
| 8:CB:2496:C:OP1   | 19:CM:81:ARG:HB3  | 2.11                     | 0.50              |
| 8:CB:2610:C:O2'   | 8:CB:2611:C:OP2   | 2.28                     | 0.50              |
| 8:CB:2641:G:H5'   | 8:CB:2641:G:C8    | 2.46                     | 0.50              |
| 8:CB:2668:G:C2    | 8:CB:2669:G:C8    | 3.00                     | 0.50              |
| 8:CB:2685:G:H2'   | 8:CB:2686:G:H8    | 1.75                     | 0.50              |
| 8:CB:2755:C:O5'   | 8:CB:2755:C:C6    | 2.53                     | 0.50              |
| 9:CC:52:HIS:C     | 9:CC:53:ILE:HD12  | 2.31                     | 0.50              |
| 10:CD:27:ILE:HG12 | 10:CD:28:GLU:N    | 2.26                     | 0.50              |
| 10:CD:31:ALA:HB3  | 10:CD:95:SER:CA   | 2.41                     | 0.50              |
| 12:CF:133:GLU:CA  | 12:CF:150:GLY:HA2 | 2.41                     | 0.50              |
| 13:CG:14:VAL:HG12 | 13:CG:14:VAL:O    | 2.09                     | 0.50              |
| 14:CH:3:VAL:HG22  | 14:CH:21:VAL:HG21 | 1.93                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:CJ:25:LEU:HG    | 16:CJ:64:VAL:CA    | 2.40                     | 0.50              |
| 16:CJ:26:GLY:O     | 16:CJ:29:ALA:N     | 2.44                     | 0.50              |
| 16:CJ:103:ILE:HG22 | 16:CJ:104:ALA:N    | 2.26                     | 0.50              |
| 17:CK:19:VAL:HG12  | 17:CK:43:ILE:HA    | 1.93                     | 0.50              |
| 24:CR:32:THR:OG1   | 24:CR:33:VAL:N     | 2.45                     | 0.50              |
| 25:CS:80:PRO:O     | 25:CS:100:THR:HG22 | 2.11                     | 0.50              |
| 28:CV:40:ILE:HG12  | 28:CV:40:ILE:O     | 2.10                     | 0.50              |
| 29:CW:13:ARG:HD2   | 29:CW:14:ASP:H     | 1.74                     | 0.50              |
| 29:CW:19:ARG:CA    | 29:CW:33:GLY:HA2   | 2.39                     | 0.50              |
| 30:CX:9:LYS:HB3    | 30:CX:9:LYS:HZ3    | 1.75                     | 0.50              |
| 33:DA:15:G:C2      | 33:DA:16:A:C4      | 2.99                     | 0.50              |
| 33:DA:16:A:C2      | 33:DA:17:U:C6      | 2.99                     | 0.50              |
| 33:DA:36:C:C4      | 33:DA:37:U:C5      | 2.99                     | 0.50              |
| 33:DA:53:A:N1      | 33:DA:359:G:C6     | 2.80                     | 0.50              |
| 33:DA:141:G:C2     | 33:DA:223:A:C2     | 2.99                     | 0.50              |
| 33:DA:232:G:H1'    | 33:DA:262:A:N1     | 2.26                     | 0.50              |
| 33:DA:401:C:C2     | 33:DA:402:G:N7     | 2.79                     | 0.50              |
| 33:DA:403:C:H2'    | 33:DA:404:G:C8     | 2.44                     | 0.50              |
| 33:DA:430:A:O2'    | 33:DA:431:A:H8     | 1.94                     | 0.50              |
| 33:DA:432:A:C2'    | 33:DA:433:G:H5'    | 2.29                     | 0.50              |
| 33:DA:561:U:O2'    | 33:DA:562:U:P      | 2.70                     | 0.50              |
| 33:DA:601:G:O6     | 33:DA:602:A:C6     | 2.65                     | 0.50              |
| 33:DA:734:G:H4'    | 50:DR:59:LYS:NZ    | 2.26                     | 0.50              |
| 33:DA:905:U:H5     | 33:DA:906:A:N7     | 2.08                     | 0.50              |
| 33:DA:917:G:N2     | 33:DA:918:A:N9     | 2.60                     | 0.50              |
| 37:DE:131:ASN:O    | 37:DE:132:PRO:C    | 2.50                     | 0.50              |
| 38:DF:97:THR:O     | 38:DF:98:GLU:HB3   | 2.11                     | 0.50              |
| 39:DG:59:GLU:HA    | 39:DG:62:GLU:CD    | 2.31                     | 0.50              |
| 39:DG:83:THR:O     | 39:DG:84:TYR:C     | 2.48                     | 0.50              |
| 40:DH:119:GLY:O    | 40:DH:120:LEU:HD13 | 2.11                     | 0.50              |
| 46:DN:41:TRP:HD1   | 46:DN:43:ALA:HB3   | 1.77                     | 0.50              |
| 47:DO:17:ASP:N     | 47:DO:17:ASP:OD1   | 2.44                     | 0.50              |
| 48:DP:28:ARG:HB2   | 48:DP:29:ASN:ND2   | 2.26                     | 0.50              |
| 51:DS:10:ILE:HG12  | 51:DS:40:PHE:CE2   | 2.45                     | 0.50              |
| 51:DS:66:VAL:HG23  | 51:DS:67:GLY:H     | 1.76                     | 0.50              |
| 53:DU:27:VAL:HG12  | 53:DU:27:VAL:O     | 2.10                     | 0.50              |
| 1:A0:42:ILE:HG22   | 1:A0:47:TYR:N      | 2.26                     | 0.50              |
| 1:A0:47:TYR:HA     | 1:A0:52:LYS:CG     | 2.41                     | 0.50              |
| 3:A2:17:GLY:O      | 3:A2:18:PHE:C      | 2.49                     | 0.50              |
| 7:AA:6:G:C2        | 7:AA:7:G:N7        | 2.79                     | 0.50              |
| 7:AA:13:G:C8       | 7:AA:13:G:H3'      | 2.46                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:AA:59:A:C5       | 7:AA:60:C:C4       | 3.00                     | 0.50              |
| 7:AA:94:A:C5       | 7:AA:95:U:C2       | 2.99                     | 0.50              |
| 7:AA:99:A:H2'      | 7:AA:100:G:H5'     | 1.94                     | 0.50              |
| 8:AB:160:A:N1      | 8:AB:161:A:C6      | 2.79                     | 0.50              |
| 8:AB:324:A:H2'     | 8:AB:325:G:O4'     | 2.10                     | 0.50              |
| 8:AB:328:U:H4'     | 27:AU:65:GLN:CD    | 2.31                     | 0.50              |
| 8:AB:409:G:O5'     | 8:AB:409:G:H8      | 1.93                     | 0.50              |
| 8:AB:464:U:H2'     | 8:AB:465:G:O4'     | 2.11                     | 0.50              |
| 8:AB:464:U:H3'     | 8:AB:465:G:H5''    | 1.92                     | 0.50              |
| 8:AB:492:A:H3'     | 8:AB:493:G:O4'     | 2.11                     | 0.50              |
| 8:AB:638:G:C2      | 8:AB:639:U:C2      | 2.99                     | 0.50              |
| 8:AB:945:A:C2      | 8:AB:2448:A:N9     | 2.78                     | 0.50              |
| 8:AB:984:A:H8      | 8:AB:984:A:O5'     | 1.94                     | 0.50              |
| 8:AB:1021:A:H8     | 8:AB:1022:G:C4'    | 2.25                     | 0.50              |
| 8:AB:1136:G:H5'    | 8:AB:1136:G:C8     | 2.45                     | 0.50              |
| 8:AB:1364:G:C1'    | 8:AB:1368:G:N2     | 2.69                     | 0.50              |
| 8:AB:1432:G:C2'    | 8:AB:1433:A:H5'    | 2.41                     | 0.50              |
| 8:AB:1487:U:H3'    | 8:AB:1487:U:C6     | 2.47                     | 0.50              |
| 8:AB:1591:A:H2'    | 8:AB:1592:C:C6     | 2.46                     | 0.50              |
| 8:AB:1642:G:C6     | 8:AB:1643:G:N7     | 2.80                     | 0.50              |
| 8:AB:1702:G:C8     | 8:AB:1702:G:H3'    | 2.46                     | 0.50              |
| 8:AB:1817:G:OP1    | 9:AC:62:ARG:NH2    | 2.42                     | 0.50              |
| 8:AB:2335:A:C5     | 8:AB:2337:G:C5     | 2.99                     | 0.50              |
| 8:AB:2360:G:C2'    | 8:AB:2361:G:O5'    | 2.60                     | 0.50              |
| 8:AB:2415:G:C4     | 8:AB:2416:C:C5     | 3.00                     | 0.50              |
| 8:AB:2570:G:C6     | 8:AB:2571:U:C5     | 2.99                     | 0.50              |
| 8:AB:2579:C:H4'    | 10:AD:137:SER:O    | 2.10                     | 0.50              |
| 8:AB:2648:G:H8     | 8:AB:2648:G:O5'    | 1.95                     | 0.50              |
| 8:AB:2673:G:C2'    | 8:AB:2674:G:H5'    | 2.41                     | 0.50              |
| 8:AB:2840:C:C4     | 8:AB:2841:C:N4     | 2.79                     | 0.50              |
| 9:AC:177:SER:C     | 9:AC:179:GLU:H     | 2.14                     | 0.50              |
| 9:AC:179:GLU:HG3   | 9:AC:267:VAL:N     | 2.22                     | 0.50              |
| 10:AD:135:GLY:HA2  | 10:AD:138:LEU:HD21 | 1.94                     | 0.50              |
| 10:AD:135:GLY:HA3  | 10:AD:138:LEU:HG   | 1.91                     | 0.50              |
| 11:AE:118:LEU:HD12 | 11:AE:187:VAL:HG11 | 1.94                     | 0.50              |
| 11:AE:163:ASN:OD1  | 11:AE:166:LYS:HB2  | 2.11                     | 0.50              |
| 11:AE:190:ALA:H    | 11:AE:194:LYS:HE2  | 1.76                     | 0.50              |
| 12:AF:41:GLU:H     | 12:AF:45:ASP:HB3   | 1.75                     | 0.50              |
| 16:AJ:110:PRO:O    | 16:AJ:111:LYS:HB2  | 2.10                     | 0.50              |
| 17:AK:35:VAL:HG13  | 17:AK:65:THR:CG2   | 2.27                     | 0.50              |
| 18:AL:56:PRO:CG    | 18:AL:60:ARG:HH22  | 2.24                     | 0.50              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 18:AL:76:GLU:O     | 18:AL:77:ILE:C    | 2.49                     | 0.50              |
| 19:AM:101:VAL:HG11 | 19:AM:113:ALA:HB1 | 1.93                     | 0.50              |
| 21:AO:68:LYS:HD3   | 21:AO:68:LYS:H    | 1.76                     | 0.50              |
| 23:AQ:24:TYR:CD1   | 23:AQ:24:TYR:C    | 2.83                     | 0.50              |
| 23:AQ:61:ILE:HG21  | 23:AQ:75:TYR:OH   | 2.11                     | 0.50              |
| 23:AQ:79:ILE:HD13  | 23:AQ:79:ILE:N    | 2.26                     | 0.50              |
| 24:AR:80:ARG:CZ    | 24:AR:80:ARG:HB2  | 2.40                     | 0.50              |
| 25:AS:11:ARG:HG3   | 25:AS:11:ARG:O    | 2.11                     | 0.50              |
| 30:AX:7:ARG:HH11   | 30:AX:56:LEU:HD21 | 1.76                     | 0.50              |
| 33:BA:24:U:O2'     | 33:BA:25:C:H5'    | 2.11                     | 0.50              |
| 33:BA:39:G:C5      | 33:BA:404:G:C2    | 2.99                     | 0.50              |
| 33:BA:499:A:N6     | 33:BA:546:A:O2'   | 2.34                     | 0.50              |
| 33:BA:604:G:H3'    | 33:BA:605:U:H6    | 1.76                     | 0.50              |
| 33:BA:785:G:C2'    | 33:BA:786:G:H5'   | 2.42                     | 0.50              |
| 33:BA:813:U:O2'    | 33:BA:814:A:H5'   | 2.11                     | 0.50              |
| 33:BA:1068:G:O2'   | 33:BA:1069:C:H5'  | 2.11                     | 0.50              |
| 33:BA:1317:C:OP1   | 46:BN:56:PRO:HD2  | 2.11                     | 0.50              |
| 33:BA:1360:A:N6    | 33:BA:1361:G:C2   | 2.79                     | 0.50              |
| 33:BA:1467:C:O2'   | 33:BA:1468:A:C5'  | 2.58                     | 0.50              |
| 33:BA:1487:G:H2'   | 33:BA:1488:G:O5'  | 2.11                     | 0.50              |
| 33:BA:1527:U:H2'   | 33:BA:1528:U:C4   | 2.46                     | 0.50              |
| 34:BB:22:TRP:CE3   | 34:BB:38:HIS:CD2  | 3.00                     | 0.50              |
| 34:BB:130:LYS:O    | 34:BB:133:ALA:HB3 | 2.10                     | 0.50              |
| 50:BR:48:ALA:HA    | 50:BR:51:GLN:HB3  | 1.94                     | 0.50              |
| 52:BT:46:ALA:HB1   | 52:BT:82:ILE:HG21 | 1.93                     | 0.50              |
| 3:C2:25:LYS:O      | 3:C2:29:GLN:HB2   | 2.11                     | 0.50              |
| 4:C3:30:HIS:O      | 4:C3:31:ILE:CG2   | 2.60                     | 0.50              |
| 8:CB:66:C:H2'      | 8:CB:67:U:H5'     | 1.93                     | 0.50              |
| 8:CB:93:G:H2'      | 8:CB:94:A:H8      | 1.76                     | 0.50              |
| 8:CB:194:G:C5'     | 8:CB:195:A:OP2    | 2.58                     | 0.50              |
| 8:CB:200:U:C2'     | 8:CB:201:C:H5'    | 2.42                     | 0.50              |
| 8:CB:323:C:H5      | 11:CE:165:HIS:CD2 | 2.29                     | 0.50              |
| 8:CB:607:U:H2'     | 8:CB:608:A:H5'    | 1.92                     | 0.50              |
| 8:CB:662:G:C2'     | 8:CB:663:G:H5'    | 2.41                     | 0.50              |
| 8:CB:751:A:H3'     | 8:CB:789:A:H2     | 1.75                     | 0.50              |
| 8:CB:824:U:O4      | 8:CB:833:A:N1     | 2.43                     | 0.50              |
| 8:CB:989:G:O2'     | 8:CB:990:A:C5'    | 2.59                     | 0.50              |
| 8:CB:992:C:O2'     | 8:CB:993:G:H5'    | 2.11                     | 0.50              |
| 8:CB:1041:G:C2     | 8:CB:1042:G:C5    | 2.99                     | 0.50              |
| 8:CB:1050:A:O2'    | 8:CB:1051:G:H5'   | 2.11                     | 0.50              |
| 8:CB:1153:C:H5'    | 23:CQ:75:TYR:HE2  | 1.77                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1265:A:N6    | 8:CB:2013:A:H5''   | 2.27                     | 0.50              |
| 8:CB:1431:A:C2'   | 8:CB:1432:G:H5'    | 2.42                     | 0.50              |
| 8:CB:1912:A:C8    | 8:CB:1918:A:H2     | 2.28                     | 0.50              |
| 8:CB:1921:G:O2'   | 8:CB:1922:G:H5'    | 2.12                     | 0.50              |
| 8:CB:2059:A:C5    | 8:CB:2503:A:C2     | 3.00                     | 0.50              |
| 8:CB:2070:A:C2    | 8:CB:2442:C:O2     | 2.65                     | 0.50              |
| 8:CB:2148:G:H8    | 8:CB:2148:G:O5'    | 1.95                     | 0.50              |
| 8:CB:2230:G:H1'   | 32:CZ:30:HIS:NE2   | 2.26                     | 0.50              |
| 8:CB:2312:U:H5'   | 12:CF:68:LYS:O     | 2.11                     | 0.50              |
| 8:CB:2378:A:H3'   | 8:CB:2378:A:H8     | 1.76                     | 0.50              |
| 8:CB:2562:U:H2'   | 8:CB:2563:U:C5'    | 2.41                     | 0.50              |
| 8:CB:2569:G:C2    | 8:CB:2570:G:C8     | 3.00                     | 0.50              |
| 8:CB:2605:U:C2    | 8:CB:2606:C:C5     | 3.00                     | 0.50              |
| 8:CB:2694:G:H8    | 8:CB:2694:G:H5'    | 1.74                     | 0.50              |
| 11:CE:127:GLU:CA  | 11:CE:157:LEU:HD22 | 2.32                     | 0.50              |
| 17:CK:66:LYS:HG3  | 17:CK:81:GLY:H     | 1.76                     | 0.50              |
| 19:CM:6:ARG:O     | 19:CM:8:LYS:HB2    | 2.11                     | 0.50              |
| 19:CM:77:PRO:HG3  | 19:CM:86:LYS:HZ3   | 1.77                     | 0.50              |
| 19:CM:86:LYS:CG   | 19:CM:87:GLY:N     | 2.71                     | 0.50              |
| 20:CN:10:LEU:HB3  | 20:CN:17:ARG:HH22  | 1.77                     | 0.50              |
| 23:CQ:4:LYS:HB2   | 23:CQ:4:LYS:HZ3    | 1.74                     | 0.50              |
| 23:CQ:75:TYR:CD1  | 23:CQ:79:ILE:HD11  | 2.46                     | 0.50              |
| 25:CS:9:HIS:H     | 25:CS:102:HIS:CD2  | 2.30                     | 0.50              |
| 25:CS:21:ALA:HA   | 25:CS:24:ILE:CG1   | 2.41                     | 0.50              |
| 26:CT:58:VAL:HA   | 26:CT:85:VAL:HA    | 1.93                     | 0.50              |
| 33:DA:16:A:O2'    | 33:DA:17:U:H5'     | 2.10                     | 0.50              |
| 33:DA:305:G:H4'   | 33:DA:306:A:H5'    | 1.93                     | 0.50              |
| 33:DA:362:G:H3'   | 33:DA:362:G:H8     | 1.74                     | 0.50              |
| 33:DA:519:C:N4    | 33:DA:520:A:N1     | 2.60                     | 0.50              |
| 33:DA:713:G:C5'   | 33:DA:713:G:C8     | 2.94                     | 0.50              |
| 33:DA:831:A:C5    | 33:DA:832:G:H8     | 2.30                     | 0.50              |
| 33:DA:957:U:H1'   | 33:DA:960:U:C4     | 2.45                     | 0.50              |
| 33:DA:1261:A:C5   | 33:DA:1262:C:C5    | 3.00                     | 0.50              |
| 34:DB:184:ALA:HB3 | 34:DB:195:VAL:CG1  | 2.41                     | 0.50              |
| 35:DC:72:PRO:HB2  | 35:DC:76:ILE:HG12  | 1.94                     | 0.50              |
| 40:DH:104:SER:HB3 | 40:DH:123:GLU:HB3  | 1.93                     | 0.50              |
| 45:DM:106:ARG:CG  | 45:DM:106:ARG:NH1  | 2.61                     | 0.50              |
| 48:DP:39:PHE:CD1  | 48:DP:50:THR:HG21  | 2.46                     | 0.50              |
| 51:DS:31:ARG:HG3  | 51:DS:49:ALA:CB    | 2.33                     | 0.50              |
| 3:A2:12:ARG:C     | 3:A2:18:PHE:CE1    | 2.85                     | 0.50              |
| 3:A2:26:ASN:HB3   | 8:AB:682:G:H4'     | 1.94                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:A3:54:LEU:O      | 4:A3:57:VAL:N      | 2.38                     | 0.50              |
| 8:AB:56:A:H61      | 8:AB:114:U:H3      | 1.59                     | 0.50              |
| 8:AB:118:A:N7      | 8:AB:119:A:C8      | 2.78                     | 0.50              |
| 8:AB:303:G:N2      | 8:AB:315:G:C2      | 2.80                     | 0.50              |
| 8:AB:743:A:H2'     | 8:AB:744:U:H5'     | 1.92                     | 0.50              |
| 8:AB:798:G:H2'     | 8:AB:798:G:N3      | 2.26                     | 0.50              |
| 8:AB:1204:A:N1     | 8:AB:1241:A:C2     | 2.79                     | 0.50              |
| 8:AB:1309:G:H1'    | 8:AB:1611:C:O2'    | 2.12                     | 0.50              |
| 8:AB:1439:A:C2     | 8:AB:1553:A:C6     | 2.99                     | 0.50              |
| 8:AB:1670:C:OP1    | 55:AB:4514:HOH:O   | 2.19                     | 0.50              |
| 8:AB:1853:A:O2'    | 8:AB:1854:A:H5'    | 2.10                     | 0.50              |
| 8:AB:2090:A:C8     | 8:AB:2090:A:H5''   | 2.46                     | 0.50              |
| 8:AB:2152:G:N2     | 8:AB:2153:C:H1'    | 2.27                     | 0.50              |
| 8:AB:2187:U:H3'    | 8:AB:2188:U:C6     | 2.47                     | 0.50              |
| 8:AB:2195:U:C2     | 8:AB:2196:C:C5     | 3.00                     | 0.50              |
| 8:AB:2255:G:C4     | 8:AB:2256:G:C8     | 3.00                     | 0.50              |
| 8:AB:2800:A:C2     | 8:AB:2801:G:C4     | 2.99                     | 0.50              |
| 9:AC:125:PRO:O     | 9:AC:192:GLY:CA    | 2.59                     | 0.50              |
| 11:AE:106:LYS:NZ   | 11:AE:106:LYS:CB   | 2.74                     | 0.50              |
| 18:AL:33:ARG:HH22  | 18:AL:36:LYS:NZ    | 2.09                     | 0.50              |
| 18:AL:74:THR:CG2   | 18:AL:107:PHE:H    | 2.25                     | 0.50              |
| 18:AL:105:ILE:HG12 | 18:AL:106:GLU:N    | 2.27                     | 0.50              |
| 19:AM:11:LYS:CG    | 19:AM:12:MET:N     | 2.75                     | 0.50              |
| 19:AM:76:LYS:HE3   | 19:AM:83:GLY:O     | 2.11                     | 0.50              |
| 22:AP:23:ASP:CG    | 22:AP:93:LYS:NZ    | 2.65                     | 0.50              |
| 22:AP:61:ARG:NH2   | 22:AP:75:THR:OG1   | 2.43                     | 0.50              |
| 24:AR:17:GLY:C     | 24:AR:18:GLN:HG2   | 2.32                     | 0.50              |
| 25:AS:20:VAL:HG22  | 25:AS:21:ALA:N     | 2.25                     | 0.50              |
| 25:AS:86:MET:HB3   | 25:AS:94:ASP:HB3   | 1.92                     | 0.50              |
| 26:AT:20:ALA:HA    | 26:AT:23:ALA:HB2   | 1.93                     | 0.50              |
| 28:AV:56:PHE:C     | 28:AV:56:PHE:HD2   | 2.15                     | 0.50              |
| 29:AW:62:ALA:O     | 29:AW:63:ASP:HB2   | 2.11                     | 0.50              |
| 30:AX:19:LEU:HA    | 30:AX:22:LEU:HB2   | 1.93                     | 0.50              |
| 33:BA:390:U:H5''   | 48:BP:28:ARG:HH11  | 1.77                     | 0.50              |
| 33:BA:408:A:P      | 36:BD:109:THR:HG21 | 2.51                     | 0.50              |
| 33:BA:492:C:O2'    | 33:BA:493:A:H5'    | 2.12                     | 0.50              |
| 33:BA:546:A:O2'    | 33:BA:547:A:O4'    | 2.28                     | 0.50              |
| 33:BA:586:C:H6     | 33:BA:586:C:H3'    | 1.77                     | 0.50              |
| 33:BA:659:U:H1'    | 33:BA:748:G:H22    | 1.76                     | 0.50              |
| 33:BA:705:G:C4     | 33:BA:706:A:C8     | 2.99                     | 0.50              |
| 33:BA:770:C:C6     | 33:BA:770:C:C3'    | 2.94                     | 0.50              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:BA:857:C:C6   | 33:BA:858:G:C8     | 2.99                     | 0.50              |
| 33:BA:878:A:C6   | 33:BA:879:C:C5     | 2.99                     | 0.50              |
| 33:BA:1253:G:H2' | 33:BA:1254:A:H8    | 1.75                     | 0.50              |
| 33:BA:1343:G:C4  | 33:BA:1344:C:C5    | 3.00                     | 0.50              |
| 37:BE:11:GLN:HG2 | 37:BE:116:VAL:HG12 | 1.92                     | 0.50              |
| 40:BH:79:ARG:O   | 40:BH:83:ARG:HD2   | 2.12                     | 0.50              |
| 1:C0:9:ARG:O     | 1:C0:12:ARG:N      | 2.44                     | 0.50              |
| 4:C3:34:LYS:HD2  | 4:C3:34:LYS:N      | 2.27                     | 0.50              |
| 7:CA:43:C:O2     | 12:CF:91:ARG:HD2   | 2.12                     | 0.50              |
| 7:CA:79:G:H2'    | 7:CA:80:U:O4'      | 2.11                     | 0.50              |
| 8:CB:49:A:H1'    | 8:CB:51:G:C5       | 2.47                     | 0.50              |
| 8:CB:55:G:C2     | 8:CB:116:C:C2      | 3.00                     | 0.50              |
| 8:CB:143:C:H2'   | 26:CT:3:ARG:NH1    | 2.27                     | 0.50              |
| 8:CB:305:C:C4    | 8:CB:306:U:C5      | 2.99                     | 0.50              |
| 8:CB:465:G:C2    | 8:CB:466:A:N1      | 2.80                     | 0.50              |
| 8:CB:617:G:OP1   | 11:CE:102:ARG:HD3  | 2.10                     | 0.50              |
| 8:CB:625:G:N2    | 8:CB:626:A:C2      | 2.80                     | 0.50              |
| 8:CB:656:G:H2'   | 8:CB:657:U:C6      | 2.47                     | 0.50              |
| 8:CB:848:C:O2'   | 8:CB:849:A:H5'     | 2.11                     | 0.50              |
| 8:CB:906:U:C6    | 8:CB:906:U:H3'     | 2.46                     | 0.50              |
| 8:CB:953:G:HO2'  | 8:CB:2266:A:P      | 2.34                     | 0.50              |
| 8:CB:994:C:H3'   | 23:CQ:50:ARG:HH22  | 1.76                     | 0.50              |
| 8:CB:1040:A:N1   | 8:CB:1041:G:C8     | 2.79                     | 0.50              |
| 8:CB:1275:A:C6   | 20:CN:16:HIS:CE1   | 2.99                     | 0.50              |
| 8:CB:1897:G:N1   | 8:CB:1898:U:O2     | 2.45                     | 0.50              |
| 8:CB:1984:G:C6   | 8:CB:1985:C:C4     | 3.00                     | 0.50              |
| 8:CB:2027:G:C2   | 8:CB:2028:U:C2     | 2.99                     | 0.50              |
| 8:CB:2348:U:H3'  | 8:CB:2348:U:C6     | 2.45                     | 0.50              |
| 8:CB:2574:G:H21  | 10:CD:147:GLY:CA   | 2.25                     | 0.50              |
| 8:CB:2633:G:H2'  | 8:CB:2634:A:O4'    | 2.10                     | 0.50              |
| 8:CB:2666:C:H41  | 13:CG:108:PHE:HA   | 1.76                     | 0.50              |
| 8:CB:2697:G:C8   | 8:CB:2698:U:C5     | 2.99                     | 0.50              |
| 8:CB:2810:A:O3'  | 10:CD:61:THR:HG22  | 2.11                     | 0.50              |
| 8:CB:2892:G:H3'  | 8:CB:2892:G:H8     | 1.75                     | 0.50              |
| 9:CC:140:VAL:C   | 9:CC:193:GLU:HB2   | 2.31                     | 0.50              |
| 9:CC:208:GLY:C   | 9:CC:210:ALA:H     | 2.15                     | 0.50              |
| 9:CC:229:HIS:ND1 | 9:CC:231:HIS:CD2   | 2.80                     | 0.50              |
| 10:CD:77:ARG:HB2 | 10:CD:77:ARG:CZ    | 2.40                     | 0.50              |
| 10:CD:122:VAL:CA | 10:CD:128:ARG:HE   | 2.24                     | 0.50              |
| 11:CE:3:LEU:HD11 | 11:CE:194:LYS:O    | 2.10                     | 0.50              |
| 12:CF:7:TYR:O    | 12:CF:12:VAL:HG23  | 2.10                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:CG:93:TYR:N     | 13:CG:93:TYR:CD1   | 2.78                     | 0.50              |
| 13:CG:148:ARG:HH21 | 13:CG:153:PRO:CG   | 2.18                     | 0.50              |
| 16:CJ:11:VAL:HG12  | 16:CJ:43:GLU:OE2   | 2.12                     | 0.50              |
| 17:CK:2:ILE:HG21   | 17:CK:67:LYS:CD    | 2.41                     | 0.50              |
| 20:CN:4:ARG:NE     | 20:CN:4:ARG:CA     | 2.75                     | 0.50              |
| 24:CR:32:THR:HA    | 24:CR:66:HIS:CD2   | 2.47                     | 0.50              |
| 26:CT:59:ASN:HB2   | 26:CT:84:TYR:HB2   | 1.92                     | 0.50              |
| 30:CX:16:THR:HG23  | 30:CX:16:THR:O     | 2.10                     | 0.50              |
| 30:CX:22:LEU:HD22  | 30:CX:25:GLN:HE22  | 1.76                     | 0.50              |
| 33:DA:39:G:C6      | 33:DA:404:G:C2     | 2.99                     | 0.50              |
| 33:DA:293:G:N1     | 33:DA:305:G:C2     | 2.80                     | 0.50              |
| 33:DA:376:G:C5     | 33:DA:389:A:C2     | 2.99                     | 0.50              |
| 33:DA:391:G:N2     | 33:DA:392:C:H1'    | 2.26                     | 0.50              |
| 33:DA:407:U:O2     | 33:DA:407:U:H2'    | 2.10                     | 0.50              |
| 33:DA:461:A:H5'    | 33:DA:462:G:O4'    | 2.11                     | 0.50              |
| 33:DA:512:U:C2     | 33:DA:540:G:N2     | 2.78                     | 0.50              |
| 33:DA:645:G:N3     | 33:DA:645:G:H2'    | 2.25                     | 0.50              |
| 33:DA:654:G:H3'    | 33:DA:655:A:H8     | 1.75                     | 0.50              |
| 33:DA:828:U:H5     | 33:DA:829:G:N9     | 2.10                     | 0.50              |
| 33:DA:1073:U:H5''  | 33:DA:1074:G:OP2   | 2.11                     | 0.50              |
| 33:DA:1202:U:H1'   | 46:DN:68:ARG:HG3   | 1.92                     | 0.50              |
| 33:DA:1221:G:H4'   | 51:DS:76:THR:HG21  | 1.91                     | 0.50              |
| 33:DA:1361:G:H2'   | 33:DA:1362:A:O4'   | 2.10                     | 0.50              |
| 33:DA:1451:U:C6    | 33:DA:1451:U:H5'   | 2.46                     | 0.50              |
| 35:DC:70:ALA:HB1   | 35:DC:105:VAL:HG13 | 1.91                     | 0.50              |
| 35:DC:116:ALA:O    | 35:DC:119:ILE:HG22 | 2.12                     | 0.50              |
| 36:DD:26:ALA:C     | 36:DD:27:ILE:HD12  | 2.31                     | 0.50              |
| 36:DD:32:LYS:O     | 36:DD:32:LYS:CG    | 2.59                     | 0.50              |
| 40:DH:36:ALA:HA    | 40:DH:39:LEU:HD23  | 1.93                     | 0.50              |
| 41:DI:123:ARG:HD3  | 41:DI:124:PRO:HD2  | 1.92                     | 0.50              |
| 52:DT:64:GLY:HA2   | 52:DT:67:HIS:CD2   | 2.47                     | 0.50              |
| 5:A4:3:VAL:HG11    | 5:A4:35:GLN:HG2    | 1.93                     | 0.50              |
| 7:AA:15:A:H5''     | 7:AA:15:A:N3       | 2.26                     | 0.50              |
| 8:AB:12:U:O2       | 8:AB:12:U:H2'      | 2.12                     | 0.50              |
| 8:AB:361:G:HO2'    | 8:AB:362:A:H8      | 1.57                     | 0.50              |
| 8:AB:379:G:C8      | 8:AB:379:G:H3'     | 2.47                     | 0.50              |
| 8:AB:451:U:O2      | 8:AB:453:A:N6      | 2.44                     | 0.50              |
| 8:AB:621:A:H2'     | 8:AB:622:G:O4'     | 2.12                     | 0.50              |
| 8:AB:741:U:C2      | 8:AB:757:G:C2      | 2.99                     | 0.50              |
| 8:AB:1296:G:C2     | 8:AB:1297:C:C5     | 2.99                     | 0.50              |
| 8:AB:1380:G:C8     | 8:AB:1380:G:O5'    | 2.65                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1575:C:H2'   | 8:AB:1576:U:H6    | 1.75                     | 0.50              |
| 8:AB:1779:U:C6    | 8:AB:1783:A:N7    | 2.79                     | 0.50              |
| 8:AB:1787:A:H5'   | 8:AB:1787:A:C8    | 2.46                     | 0.50              |
| 8:AB:1824:G:N3    | 9:AC:249:VAL:HG12 | 2.26                     | 0.50              |
| 8:AB:1988:G:C2'   | 8:AB:1989:G:H5'   | 2.36                     | 0.50              |
| 8:AB:2027:G:C5    | 8:AB:2028:U:C5    | 3.00                     | 0.50              |
| 8:AB:2080:A:N6    | 8:AB:2241:A:N6    | 2.60                     | 0.50              |
| 8:AB:2259:U:C2    | 8:AB:2260:C:C6    | 3.00                     | 0.50              |
| 8:AB:2345:G:C5    | 8:AB:2381:A:C2    | 2.99                     | 0.50              |
| 8:AB:2376:A:H2'   | 8:AB:2377:A:O4'   | 2.12                     | 0.50              |
| 8:AB:2536:G:C6    | 8:AB:2537:U:N3    | 2.79                     | 0.50              |
| 8:AB:2592:G:N1    | 8:AB:2593:U:C2    | 2.79                     | 0.50              |
| 8:AB:2650:U:O2    | 8:AB:2671:G:N2    | 2.44                     | 0.50              |
| 8:AB:2726:A:O2'   | 8:AB:2727:A:H5'   | 2.11                     | 0.50              |
| 8:AB:2798:U:H3'   | 8:AB:2798:U:P     | 2.51                     | 0.50              |
| 8:AB:2890:G:H8    | 8:AB:2890:G:O5'   | 1.95                     | 0.50              |
| 9:AC:80:LEU:HA    | 9:AC:91:ALA:CA    | 2.40                     | 0.50              |
| 11:AE:163:ASN:O   | 11:AE:166:LYS:N   | 2.36                     | 0.50              |
| 12:AF:45:ASP:OD1  | 12:AF:45:ASP:O    | 2.29                     | 0.50              |
| 12:AF:56:LEU:HA   | 12:AF:59:ILE:HB   | 1.94                     | 0.50              |
| 13:AG:63:GLN:HG3  | 13:AG:64:ALA:N    | 2.26                     | 0.50              |
| 14:AH:26:ALA:HA   | 14:AH:30:LEU:CB   | 2.37                     | 0.50              |
| 16:AJ:17:VAL:HG22 | 16:AJ:55:ILE:HB   | 1.94                     | 0.50              |
| 17:AK:21:CYS:SG   | 17:AK:22:ILE:N    | 2.84                     | 0.50              |
| 17:AK:86:LEU:C    | 17:AK:87:LEU:HD23 | 2.32                     | 0.50              |
| 18:AL:56:PRO:O    | 18:AL:60:ARG:HB3  | 2.12                     | 0.50              |
| 18:AL:90:VAL:O    | 18:AL:91:ASP:CB   | 2.59                     | 0.50              |
| 19:AM:58:LYS:O    | 19:AM:60:GLN:HG2  | 2.12                     | 0.50              |
| 24:AR:7:SER:OG    | 24:AR:21:ARG:NH2  | 2.45                     | 0.50              |
| 28:AV:40:ILE:HG12 | 28:AV:40:ILE:O    | 2.11                     | 0.50              |
| 33:BA:64:G:C4     | 33:BA:99:C:N4     | 2.80                     | 0.50              |
| 33:BA:135:C:O5'   | 33:BA:135:C:H6    | 1.94                     | 0.50              |
| 33:BA:269:C:H2'   | 33:BA:270:A:H8    | 1.75                     | 0.50              |
| 33:BA:367:U:O2    | 33:BA:369:G:C8    | 2.65                     | 0.50              |
| 33:BA:393:A:C2    | 33:BA:394:G:H8    | 2.24                     | 0.50              |
| 33:BA:475:C:O2'   | 33:BA:476:U:H5'   | 2.11                     | 0.50              |
| 33:BA:515:G:H2'   | 33:BA:516:U:H5'   | 1.92                     | 0.50              |
| 33:BA:707:U:H5''  | 43:BK:21:HIS:CG   | 2.47                     | 0.50              |
| 33:BA:819:A:C8    | 33:BA:1529:G:N1   | 2.80                     | 0.50              |
| 33:BA:908:A:H3'   | 33:BA:908:A:C8    | 2.47                     | 0.50              |
| 33:BA:963:G:N3    | 33:BA:963:G:H2'   | 2.26                     | 0.50              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:1077:G:C6    | 33:BA:1081:A:N1   | 2.80                     | 0.50              |
| 33:BA:1092:A:C6    | 33:BA:1093:A:N1   | 2.80                     | 0.50              |
| 33:BA:1304:G:C2    | 33:BA:1334:G:C6   | 2.99                     | 0.50              |
| 33:BA:1306:A:C2    | 33:BA:1332:A:C4   | 2.99                     | 0.50              |
| 33:BA:1371:G:OP1   | 41:BI:12:LYS:HD2  | 2.11                     | 0.50              |
| 33:BA:1408:A:C2    | 33:BA:1494:G:C4   | 3.00                     | 0.50              |
| 33:BA:1483:A:H8    | 33:BA:1483:A:H3'  | 1.76                     | 0.50              |
| 33:BA:1518:A:C2    | 33:BA:1519:A:N1   | 2.79                     | 0.50              |
| 33:BA:1530:G:N3    | 33:BA:1531:A:N7   | 2.60                     | 0.50              |
| 36:BD:61:ARG:HD2   | 36:BD:71:PHE:HB2  | 1.94                     | 0.50              |
| 37:BE:145:ASN:O    | 37:BE:146:MET:C   | 2.50                     | 0.50              |
| 38:BF:4:TYR:CD1    | 38:BF:91:ARG:HA   | 2.45                     | 0.50              |
| 40:BH:125:ILE:HG22 | 40:BH:126:CYS:SG  | 2.52                     | 0.50              |
| 41:BI:18:VAL:HG11  | 41:BI:82:ILE:HG23 | 1.94                     | 0.50              |
| 43:BK:105:ARG:HH22 | 53:BU:10:PRO:HG3  | 1.76                     | 0.50              |
| 44:BL:27:PRO:HB2   | 44:BL:28:GLN:CD   | 2.31                     | 0.50              |
| 44:BL:49:ARG:HG2   | 44:BL:89:LEU:HD21 | 1.93                     | 0.50              |
| 46:BN:5:MET:HE2    | 46:BN:62:ARG:HH22 | 1.76                     | 0.50              |
| 47:BO:49:HIS:HA    | 47:BO:52:ARG:HG2  | 1.93                     | 0.50              |
| 52:BT:42:ASP:HB3   | 52:BT:45:ALA:HB3  | 1.94                     | 0.50              |
| 52:BT:68:LYS:HG3   | 52:BT:69:ASN:HD22 | 1.75                     | 0.50              |
| 3:C2:9:VAL:O       | 3:C2:12:ARG:N     | 2.45                     | 0.50              |
| 4:C3:39:ARG:NH2    | 8:CB:2363:G:H5''  | 2.27                     | 0.50              |
| 5:C4:7:VAL:HG13    | 8:CB:2467:C:OP1   | 2.11                     | 0.50              |
| 7:CA:113:C:C5      | 7:CA:114:C:H5     | 2.29                     | 0.50              |
| 8:CB:187:G:C2      | 8:CB:210:C:O2     | 2.64                     | 0.50              |
| 8:CB:321:U:H1'     | 11:CE:159:LEU:CD1 | 2.42                     | 0.50              |
| 8:CB:321:U:C4      | 8:CB:341:C:H4'    | 2.46                     | 0.50              |
| 8:CB:326:G:H2'     | 8:CB:327:G:H8     | 1.75                     | 0.50              |
| 8:CB:356:G:H3'     | 8:CB:356:G:C8     | 2.47                     | 0.50              |
| 8:CB:390:U:O5'     | 8:CB:390:U:H6     | 1.94                     | 0.50              |
| 8:CB:638:G:N1      | 8:CB:639:U:C2     | 2.80                     | 0.50              |
| 8:CB:741:U:N3      | 8:CB:757:G:C2     | 2.80                     | 0.50              |
| 8:CB:919:U:C4      | 8:CB:920:A:C5     | 3.00                     | 0.50              |
| 8:CB:1350:C:C5     | 8:CB:1351:C:H5    | 2.29                     | 0.50              |
| 8:CB:1359:A:N7     | 8:CB:1373:A:N1    | 2.59                     | 0.50              |
| 8:CB:1361:G:H2'    | 8:CB:1362:C:C6    | 2.46                     | 0.50              |
| 8:CB:1368:G:O2'    | 8:CB:1369:G:H5'   | 2.11                     | 0.50              |
| 8:CB:1788:C:H5''   | 55:CB:5310:HOH:O  | 2.10                     | 0.50              |
| 8:CB:2023:C:H2'    | 8:CB:2024:G:C8    | 2.46                     | 0.50              |
| 8:CB:2295:C:H2'    | 8:CB:2295:C:O2    | 2.10                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2810:A:H2'   | 8:CB:2811:G:O4'    | 2.11                     | 0.50              |
| 9:CC:68:ARG:NH1   | 9:CC:127:ASN:HA    | 2.26                     | 0.50              |
| 10:CD:16:THR:O    | 10:CD:17:GLU:HB2   | 2.12                     | 0.50              |
| 10:CD:202:ILE:O   | 10:CD:202:ILE:HG22 | 2.10                     | 0.50              |
| 14:CH:36:ALA:O    | 14:CH:37:VAL:CG2   | 2.59                     | 0.50              |
| 14:CH:84:ALA:O    | 14:CH:91:PHE:CE1   | 2.64                     | 0.50              |
| 14:CH:86:ASP:N    | 14:CH:86:ASP:OD1   | 2.42                     | 0.50              |
| 15:CI:24:GLY:O    | 15:CI:27:LEU:HD23  | 2.12                     | 0.50              |
| 17:CK:39:ILE:HD12 | 17:CK:40:LYS:N     | 2.24                     | 0.50              |
| 18:CL:85:VAL:CG1  | 18:CL:86:GLU:H     | 2.20                     | 0.50              |
| 21:CO:16:ARG:NE   | 21:CO:16:ARG:CA    | 2.73                     | 0.50              |
| 21:CO:17:LYS:C    | 21:CO:20:GLU:HG2   | 2.31                     | 0.50              |
| 21:CO:86:GLY:C    | 21:CO:87:ILE:HG23  | 2.32                     | 0.50              |
| 23:CQ:39:ILE:HG13 | 23:CQ:40:LYS:H     | 1.76                     | 0.50              |
| 23:CQ:71:ASN:O    | 23:CQ:72:GLY:C     | 2.50                     | 0.50              |
| 24:CR:21:ARG:O    | 24:CR:22:LEU:C     | 2.49                     | 0.50              |
| 24:CR:58:VAL:O    | 24:CR:59:ILE:HB    | 2.10                     | 0.50              |
| 25:CS:11:ARG:NH1  | 25:CS:11:ARG:CG    | 2.70                     | 0.50              |
| 26:CT:18:GLU:O    | 26:CT:20:ALA:O     | 2.30                     | 0.50              |
| 27:CU:21:ARG:CG   | 27:CU:21:ARG:NH1   | 2.73                     | 0.50              |
| 27:CU:51:LEU:O    | 27:CU:53:GLN:N     | 2.45                     | 0.50              |
| 30:CX:40:SER:OG   | 30:CX:42:LEU:HD23  | 2.12                     | 0.50              |
| 32:CZ:3:LYS:CE    | 32:CZ:29:GLY:HA3   | 2.42                     | 0.50              |
| 32:CZ:48:GLN:O    | 32:CZ:52:ALA:N     | 2.45                     | 0.50              |
| 32:CZ:63:ARG:O    | 32:CZ:67:PRO:HD2   | 2.12                     | 0.50              |
| 33:DA:15:G:H5'    | 33:DA:1396:A:O2'   | 2.11                     | 0.50              |
| 33:DA:188:C:H6    | 33:DA:188:C:O5'    | 1.93                     | 0.50              |
| 33:DA:431:A:H2'   | 33:DA:432:A:O4'    | 2.12                     | 0.50              |
| 33:DA:534:U:H3'   | 33:DA:534:U:H6     | 1.77                     | 0.50              |
| 33:DA:562:U:N3    | 33:DA:884:U:C5     | 2.78                     | 0.50              |
| 33:DA:579:A:C2    | 33:DA:763:G:C6     | 3.00                     | 0.50              |
| 33:DA:592:G:N2    | 33:DA:648:A:C4     | 2.80                     | 0.50              |
| 33:DA:618:C:C5'   | 33:DA:619:U:H5''   | 2.38                     | 0.50              |
| 33:DA:689:C:H2'   | 33:DA:690:G:H5'    | 1.94                     | 0.50              |
| 33:DA:704:A:C3'   | 33:DA:705:G:H5''   | 2.40                     | 0.50              |
| 33:DA:729:A:O5'   | 33:DA:729:A:H8     | 1.94                     | 0.50              |
| 33:DA:765:G:C4    | 33:DA:812:G:C2     | 3.00                     | 0.50              |
| 33:DA:938:A:C2    | 33:DA:1345:U:O4    | 2.65                     | 0.50              |
| 33:DA:961:U:C5    | 33:DA:983:A:C6     | 2.99                     | 0.50              |
| 33:DA:978:A:N6    | 33:DA:1316:G:H21   | 2.05                     | 0.50              |
| 33:DA:985:C:H2'   | 33:DA:986:U:C6     | 2.46                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:1105:A:H3'   | 33:DA:1106:G:C5'   | 2.41                     | 0.50              |
| 33:DA:1144:G:H22   | 33:DA:1146:A:N6    | 2.09                     | 0.50              |
| 33:DA:1488:G:C2'   | 33:DA:1489:G:H5'   | 2.41                     | 0.50              |
| 34:DB:141:GLU:HG3  | 34:DB:142:LYS:N    | 2.27                     | 0.50              |
| 1:A0:28:SER:O      | 1:A0:29:VAL:CB     | 2.59                     | 0.50              |
| 1:A0:52:LYS:HZ3    | 1:A0:52:LYS:HA     | 1.75                     | 0.50              |
| 5:A4:15:LYS:NZ     | 5:A4:24:ARG:HG2    | 2.21                     | 0.50              |
| 8:AB:30:G:H8       | 8:AB:30:G:O5'      | 1.95                     | 0.50              |
| 8:AB:201:C:O2'     | 8:AB:202:U:H5'     | 2.11                     | 0.50              |
| 8:AB:226:A:C2'     | 8:AB:227:A:H5'     | 2.41                     | 0.50              |
| 8:AB:383:C:N4      | 8:AB:385:C:H2'     | 2.27                     | 0.50              |
| 8:AB:449:A:N6      | 8:AB:450:G:C6      | 2.79                     | 0.50              |
| 8:AB:486:C:C2      | 8:AB:495:G:C2      | 2.99                     | 0.50              |
| 8:AB:635:C:C2      | 8:AB:636:G:C8      | 2.99                     | 0.50              |
| 8:AB:733:G:C8      | 8:AB:733:G:C3'     | 2.95                     | 0.50              |
| 8:AB:797:G:N2      | 8:AB:798:G:H1'     | 2.26                     | 0.50              |
| 8:AB:856:G:N2      | 8:AB:921:C:O2      | 2.45                     | 0.50              |
| 8:AB:873:C:H6      | 8:AB:873:C:O5'     | 1.95                     | 0.50              |
| 8:AB:927:A:O2'     | 31:AY:38:GLU:OE1   | 2.28                     | 0.50              |
| 8:AB:1009:A:H5'    | 23:AQ:58:GLN:OE1   | 2.11                     | 0.50              |
| 8:AB:1018:U:H2'    | 8:AB:1019:U:C6     | 2.46                     | 0.50              |
| 8:AB:1034:G:N1     | 8:AB:1122:G:C6     | 2.80                     | 0.50              |
| 8:AB:1130:U:O5'    | 8:AB:1130:U:C2'    | 2.60                     | 0.50              |
| 8:AB:1353:A:O4'    | 8:AB:1569:A:H2     | 1.93                     | 0.50              |
| 8:AB:1624:U:O2'    | 8:AB:1625:C:H5'    | 2.12                     | 0.50              |
| 8:AB:1974:C:C4     | 8:AB:1975:G:N7     | 2.80                     | 0.50              |
| 8:AB:2105:U:H3'    | 8:AB:2105:U:C6     | 2.47                     | 0.50              |
| 8:AB:2204:G:C2     | 8:AB:2205:A:C8     | 2.98                     | 0.50              |
| 8:AB:2337:G:N3     | 8:AB:2337:G:C2'    | 2.73                     | 0.50              |
| 8:AB:2557:G:O5'    | 8:AB:2557:G:H8     | 1.94                     | 0.50              |
| 8:AB:2606:C:H2'    | 8:AB:2607:G:H5'    | 1.93                     | 0.50              |
| 8:AB:2614:A:H5''   | 55:AB:4685:HOH:O   | 2.12                     | 0.50              |
| 8:AB:2764:A:N6     | 8:AB:2766:A:N1     | 2.60                     | 0.50              |
| 8:AB:2824:C:C5     | 8:AB:2825:G:C5     | 2.99                     | 0.50              |
| 8:AB:2873:A:C2     | 20:AN:6:SER:HB3    | 2.47                     | 0.50              |
| 10:AD:124:ARG:HB3  | 10:AD:160:LYS:HD3  | 1.92                     | 0.50              |
| 11:AE:121:VAL:HG12 | 11:AE:122:GLU:N    | 2.26                     | 0.50              |
| 16:AJ:32:LEU:HD22  | 16:AJ:122:LEU:HD21 | 1.93                     | 0.50              |
| 17:AK:43:ILE:O     | 17:AK:54:LYS:HA    | 2.11                     | 0.50              |
| 17:AK:113:MET:HA   | 17:AK:116:ILE:CG1  | 2.41                     | 0.50              |
| 20:AN:115:LEU:HD23 | 20:AN:115:LEU:N    | 2.16                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 21:AO:88:LYS:C    | 21:AO:90:VAL:N     | 2.65                     | 0.50              |
| 23:AQ:33:VAL:O    | 23:AQ:35:PHE:N     | 2.45                     | 0.50              |
| 23:AQ:75:TYR:CD1  | 23:AQ:79:ILE:HD11  | 2.47                     | 0.50              |
| 23:AQ:97:ILE:C    | 23:AQ:99:VAL:H     | 2.14                     | 0.50              |
| 24:AR:46:GLU:O    | 24:AR:47:VAL:HG12  | 2.12                     | 0.50              |
| 24:AR:72:VAL:O    | 24:AR:73:LYS:HB2   | 2.10                     | 0.50              |
| 27:AU:72:PHE:HA   | 27:AU:96:LYS:HZ2   | 1.72                     | 0.50              |
| 27:AU:95:PHE:CG   | 27:AU:96:LYS:N     | 2.80                     | 0.50              |
| 29:AW:36:ILE:HG21 | 29:AW:69:GLU:OE2   | 2.12                     | 0.50              |
| 30:AX:18:LEU:O    | 30:AX:22:LEU:N     | 2.45                     | 0.50              |
| 33:BA:293:G:N1    | 33:BA:305:G:C2     | 2.80                     | 0.50              |
| 33:BA:428:G:C8    | 33:BA:430:A:N9     | 2.80                     | 0.50              |
| 33:BA:592:G:C5    | 33:BA:593:U:C5     | 3.00                     | 0.50              |
| 33:BA:597:G:H2'   | 33:BA:598:U:O4'    | 2.11                     | 0.50              |
| 33:BA:670:G:H1    | 33:BA:736:C:H42    | 1.60                     | 0.50              |
| 33:BA:683:G:O6    | 33:BA:708:C:C4     | 2.64                     | 0.50              |
| 33:BA:722:G:H3'   | 33:BA:722:G:N3     | 2.26                     | 0.50              |
| 33:BA:782:A:N1    | 33:BA:783:C:C2     | 2.79                     | 0.50              |
| 33:BA:831:A:C2    | 33:BA:856:C:N3     | 2.80                     | 0.50              |
| 33:BA:1466:C:N3   | 33:BA:1467:C:C4    | 2.80                     | 0.50              |
| 36:BD:104:MET:SD  | 36:BD:142:VAL:HG22 | 2.52                     | 0.50              |
| 36:BD:149:LYS:O   | 36:BD:154:VAL:HG11 | 2.12                     | 0.50              |
| 43:BK:126:ARG:O   | 53:BU:33:ARG:NH2   | 2.44                     | 0.50              |
| 44:BL:74:GLN:OE1  | 44:BL:75:GLU:HG3   | 2.12                     | 0.50              |
| 44:BL:103:CYS:SG  | 44:BL:104:SER:N    | 2.82                     | 0.50              |
| 47:BO:48:ASP:O    | 47:BO:51:SER:HB2   | 2.12                     | 0.50              |
| 7:CA:69:G:H3'     | 7:CA:70:C:C6       | 2.46                     | 0.50              |
| 8:CB:10:A:H2'     | 8:CB:11:C:C6       | 2.47                     | 0.50              |
| 8:CB:20:C:H2'     | 8:CB:21:A:C8       | 2.44                     | 0.50              |
| 8:CB:62:U:H3'     | 8:CB:63:A:C8       | 2.47                     | 0.50              |
| 8:CB:179:C:H5'    | 8:CB:180:G:OP2     | 2.12                     | 0.50              |
| 8:CB:405:U:OP2    | 8:CB:405:U:H4'     | 2.11                     | 0.50              |
| 8:CB:637:A:H4'    | 8:CB:638:G:C4'     | 2.42                     | 0.50              |
| 8:CB:743:A:C5     | 8:CB:744:U:C5      | 2.99                     | 0.50              |
| 8:CB:769:U:H2'    | 8:CB:770:G:C8      | 2.45                     | 0.50              |
| 8:CB:837:C:O5'    | 8:CB:837:C:H6      | 1.95                     | 0.50              |
| 8:CB:872:U:O2     | 8:CB:872:U:H3'     | 2.12                     | 0.50              |
| 8:CB:1153:C:N4    | 8:CB:1154:G:C6     | 2.79                     | 0.50              |
| 8:CB:1193:G:N1    | 8:CB:1194:A:C4     | 2.80                     | 0.50              |
| 8:CB:1338:G:C2'   | 8:CB:1339:G:H5'    | 2.42                     | 0.50              |
| 8:CB:1359:A:H2'   | 8:CB:1360:G:O4'    | 2.11                     | 0.50              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 8:CB:1461:C:H2'  | 8:CB:1462:C:C6     | 2.47                     | 0.50              |
| 8:CB:1675:C:C5   | 8:CB:1676:A:C5     | 3.00                     | 0.50              |
| 8:CB:1824:G:O2'  | 9:CC:249:VAL:HG11  | 2.12                     | 0.50              |
| 8:CB:2039:U:C5'  | 8:CB:2039:U:H6     | 2.25                     | 0.50              |
| 8:CB:2282:G:C4   | 8:CB:2425:A:N1     | 2.80                     | 0.50              |
| 8:CB:2476:A:H2   | 8:CB:2481:G:O6     | 1.95                     | 0.50              |
| 8:CB:2697:G:N2   | 8:CB:2711:A:C4     | 2.79                     | 0.50              |
| 8:CB:2736:A:C2   | 8:CB:2769:U:O2     | 2.65                     | 0.50              |
| 8:CB:2751:G:C2'  | 8:CB:2752:C:H6     | 2.25                     | 0.50              |
| 8:CB:2884:U:C6   | 8:CB:2884:U:C3'    | 2.89                     | 0.50              |
| 9:CC:11:GLY:O    | 9:CC:12:ARG:CB     | 2.59                     | 0.50              |
| 9:CC:34:GLU:OE1  | 9:CC:35:LYS:N      | 2.45                     | 0.50              |
| 12:CF:45:ASP:OD1 | 12:CF:45:ASP:O     | 2.29                     | 0.50              |
| 12:CF:63:LYS:O   | 12:CF:88:VAL:HG22  | 2.12                     | 0.50              |
| 14:CH:32:PRO:CD  | 14:CH:33:GLN:H     | 2.22                     | 0.50              |
| 18:CL:77:ILE:O   | 18:CL:77:ILE:HD12  | 2.11                     | 0.50              |
| 18:CL:98:ALA:CB  | 18:CL:101:ILE:HD11 | 2.42                     | 0.50              |
| 19:CM:124:LEU:N  | 19:CM:124:LEU:CD2  | 2.75                     | 0.50              |
| 25:CS:17:VAL:HA  | 25:CS:20:VAL:HG12  | 1.94                     | 0.50              |
| 25:CS:50:VAL:O   | 25:CS:50:VAL:HG23  | 2.10                     | 0.50              |
| 30:CX:41:HIS:O   | 30:CX:42:LEU:C     | 2.48                     | 0.50              |
| 33:DA:20:U:H2'   | 33:DA:21:G:O4'     | 2.11                     | 0.50              |
| 33:DA:64:G:C4    | 33:DA:99:C:N4      | 2.80                     | 0.50              |
| 33:DA:65:A:C2    | 33:DA:382:A:N7     | 2.79                     | 0.50              |
| 33:DA:126:G:OP1  | 33:DA:605:U:O2'    | 2.30                     | 0.50              |
| 33:DA:145:G:C2   | 33:DA:146:G:C5     | 3.00                     | 0.50              |
| 33:DA:150:U:H2'  | 33:DA:151:A:H8     | 1.76                     | 0.50              |
| 33:DA:378:G:H1   | 33:DA:385:C:N4     | 2.10                     | 0.50              |
| 33:DA:575:G:H1'  | 55:DA:5138:HOH:O   | 2.11                     | 0.50              |
| 33:DA:737:C:O2'  | 33:DA:738:C:H5'    | 2.11                     | 0.50              |
| 33:DA:750:C:C6   | 33:DA:750:C:C3'    | 2.94                     | 0.50              |
| 33:DA:945:G:N7   | 33:DA:946:A:N7     | 2.60                     | 0.50              |
| 33:DA:978:A:N6   | 33:DA:1318:A:N6    | 2.60                     | 0.50              |
| 33:DA:1057:G:H8  | 33:DA:1057:G:O5'   | 1.94                     | 0.50              |
| 33:DA:1179:A:O2' | 41:DI:104:THR:HA   | 2.11                     | 0.50              |
| 33:DA:1425:U:H6  | 33:DA:1426:G:OP2   | 1.94                     | 0.50              |
| 33:DA:1438:G:C6  | 33:DA:1439:G:C6    | 2.99                     | 0.50              |
| 33:DA:1442:G:H8  | 33:DA:1442:G:O5'   | 1.94                     | 0.50              |
| 33:DA:1456:A:O2' | 33:DA:1457:G:H5'   | 2.12                     | 0.50              |
| 34:DB:46:VAL:HA  | 34:DB:49:PHE:CZ    | 2.46                     | 0.50              |
| 34:DB:142:LYS:O  | 34:DB:143:LEU:C    | 2.50                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DC:116:ALA:HB2 | 35:DC:199:VAL:CG2  | 2.42                     | 0.50              |
| 37:DE:143:LEU:O   | 37:DE:144:GLU:HB3  | 2.11                     | 0.50              |
| 42:DJ:65:TYR:CD1  | 46:DN:95:LEU:HD11  | 2.46                     | 0.50              |
| 43:DK:34:THR:OG1  | 43:DK:35:ASP:N     | 2.45                     | 0.50              |
| 46:DN:20:PHE:CE1  | 46:DN:51:PRO:HG2   | 2.47                     | 0.50              |
| 49:DQ:75:VAL:O    | 49:DQ:76:ARG:HB2   | 2.12                     | 0.50              |
| 51:DS:70:LEU:C    | 51:DS:72:GLU:H     | 2.15                     | 0.50              |
| 52:DT:3:ILE:O     | 52:DT:3:ILE:HG22   | 2.11                     | 0.50              |
| 3:A2:35:ARG:HH12  | 3:A2:42:LEU:CD2    | 2.23                     | 0.50              |
| 8:AB:53:A:H5''    | 8:AB:54:G:OP2      | 2.12                     | 0.50              |
| 8:AB:68:G:N2      | 8:AB:74:A:O5'      | 2.45                     | 0.50              |
| 8:AB:190:A:H2'    | 8:AB:191:A:C8      | 2.46                     | 0.50              |
| 8:AB:197:A:H2'    | 8:AB:197:A:N3      | 2.26                     | 0.50              |
| 8:AB:370:G:O2'    | 8:AB:424:G:OP1     | 2.28                     | 0.50              |
| 8:AB:721:A:H2'    | 8:AB:722:A:C8      | 2.47                     | 0.50              |
| 8:AB:868:U:N3     | 8:AB:869:G:N7      | 2.60                     | 0.50              |
| 8:AB:1024:G:OP2   | 8:AB:1025:G:H3'    | 2.12                     | 0.50              |
| 8:AB:1052:C:C6    | 8:AB:1052:C:C3'    | 2.95                     | 0.50              |
| 8:AB:1218:G:C2    | 8:AB:1219:U:C2     | 3.00                     | 0.50              |
| 8:AB:1677:A:C2    | 8:AB:1678:A:N3     | 2.80                     | 0.50              |
| 8:AB:1684:G:C5    | 8:AB:1685:C:C4     | 3.00                     | 0.50              |
| 8:AB:1709:U:C6    | 8:AB:1750:G:N2     | 2.80                     | 0.50              |
| 8:AB:1754:A:H2'   | 8:AB:1755:A:C8     | 2.46                     | 0.50              |
| 8:AB:1804:C:P     | 9:AC:254:LYS:HD2   | 2.51                     | 0.50              |
| 8:AB:1987:A:H2'   | 8:AB:1988:G:C8     | 2.46                     | 0.50              |
| 8:AB:2013:A:H2'   | 8:AB:2014:A:H5'    | 1.94                     | 0.50              |
| 8:AB:2056:G:H5'   | 8:AB:2056:G:C8     | 2.46                     | 0.50              |
| 8:AB:2195:U:O2'   | 8:AB:2196:C:H5'    | 2.11                     | 0.50              |
| 8:AB:2676:C:H3'   | 8:AB:2676:C:H6     | 1.76                     | 0.50              |
| 8:AB:2837:A:H2'   | 8:AB:2838:G:H5''   | 1.94                     | 0.50              |
| 10:AD:4:LEU:N     | 10:AD:4:LEU:CD2    | 2.75                     | 0.50              |
| 10:AD:117:GLY:O   | 10:AD:165:MET:HB2  | 2.12                     | 0.50              |
| 10:AD:130:GLN:HG2 | 10:AD:138:LEU:HD12 | 1.93                     | 0.50              |
| 10:AD:138:LEU:O   | 10:AD:139:SER:HB2  | 2.11                     | 0.50              |
| 11:AE:123:LYS:HB3 | 11:AE:126:VAL:CG2  | 2.42                     | 0.50              |
| 12:AF:107:VAL:HB  | 12:AF:108:PRO:HD3  | 1.94                     | 0.50              |
| 12:AF:177:ARG:HG2 | 12:AF:178:LYS:N    | 2.27                     | 0.50              |
| 13:AG:158:GLY:O   | 13:AG:160:GLY:N    | 2.36                     | 0.50              |
| 14:AH:4:ILE:O     | 14:AH:4:ILE:HG22   | 2.12                     | 0.50              |
| 16:AJ:32:LEU:CD2  | 16:AJ:122:LEU:HD21 | 2.41                     | 0.50              |
| 17:AK:80:ASP:N    | 17:AK:80:ASP:OD1   | 2.45                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:AL:70:LYS:HB2   | 18:AL:70:LYS:NZ    | 2.27                     | 0.50              |
| 18:AL:77:ILE:HG22  | 18:AL:110:VAL:HA   | 1.93                     | 0.50              |
| 18:AL:78:ARG:NE    | 18:AL:81:ASP:N     | 2.60                     | 0.50              |
| 18:AL:103:ILE:O    | 18:AL:104:GLN:OE1  | 2.30                     | 0.50              |
| 19:AM:16:ARG:HB3   | 19:AM:18:ARG:HH21  | 1.77                     | 0.50              |
| 20:AN:21:PHE:N     | 20:AN:21:PHE:CD1   | 2.79                     | 0.50              |
| 20:AN:113:ILE:O    | 20:AN:113:ILE:HG22 | 2.12                     | 0.50              |
| 22:AP:103:THR:HG22 | 22:AP:105:LYS:HD3  | 1.94                     | 0.50              |
| 23:AQ:13:HIS:ND1   | 23:AQ:31:TYR:CE1   | 2.79                     | 0.50              |
| 26:AT:68:LYS:HA    | 26:AT:75:GLY:CA    | 2.41                     | 0.50              |
| 29:AW:40:ARG:HH22  | 29:AW:73:PRO:HA    | 1.77                     | 0.50              |
| 33:BA:199:A:C2     | 33:BA:219:U:C2     | 3.00                     | 0.50              |
| 33:BA:328:C:O2     | 33:BA:328:C:O4'    | 2.28                     | 0.50              |
| 33:BA:373:A:O4'    | 33:BA:481:G:H1'    | 2.12                     | 0.50              |
| 33:BA:506:G:H8     | 33:BA:506:G:O5'    | 1.95                     | 0.50              |
| 33:BA:510:A:N3     | 33:BA:543:U:H1'    | 2.26                     | 0.50              |
| 33:BA:601:G:P      | 40:BH:88:LYS:HD3   | 2.51                     | 0.50              |
| 33:BA:609:A:C8     | 33:BA:609:A:O5'    | 2.64                     | 0.50              |
| 33:BA:626:G:H2'    | 33:BA:627:G:H8     | 1.74                     | 0.50              |
| 33:BA:665:A:C2     | 33:BA:732:C:C2     | 3.00                     | 0.50              |
| 33:BA:819:A:H4'    | 33:BA:820:U:OP2    | 2.12                     | 0.50              |
| 33:BA:993:G:H4'    | 33:BA:994:A:OP2    | 2.11                     | 0.50              |
| 33:BA:1175:G:C2'   | 33:BA:1176:A:H5'   | 2.42                     | 0.50              |
| 33:BA:1306:A:C5    | 33:BA:1332:A:C5    | 3.00                     | 0.50              |
| 33:BA:1431:A:N6    | 33:BA:1432:G:H1    | 2.09                     | 0.50              |
| 33:BA:1483:A:N7    | 33:BA:1484:C:N1    | 2.60                     | 0.50              |
| 35:BC:115:VAL:HG11 | 35:BC:137:VAL:CG1  | 2.41                     | 0.50              |
| 41:BI:20:ILE:HG21  | 41:BI:86:LEU:HD11  | 1.94                     | 0.50              |
| 41:BI:54:VAL:O     | 41:BI:59:LYS:HE3   | 2.11                     | 0.50              |
| 45:BM:78:ARG:NH1   | 45:BM:78:ARG:CG    | 2.73                     | 0.50              |
| 47:BO:72:LYS:O     | 47:BO:73:ASP:HB3   | 2.12                     | 0.50              |
| 48:BP:18:GLN:NE2   | 48:BP:35:ARG:HH11  | 2.10                     | 0.50              |
| 52:BT:70:LYS:HZ2   | 52:BT:70:LYS:CB    | 2.25                     | 0.50              |
| 2:C1:14:ALA:HA     | 2:C1:48:TYR:CG     | 2.47                     | 0.50              |
| 4:C3:25:HIS:ND1    | 4:C3:42:HIS:O      | 2.45                     | 0.50              |
| 8:CB:250:G:H5'     | 18:CL:60:ARG:NE    | 2.27                     | 0.50              |
| 8:CB:322:A:O5'     | 8:CB:322:A:H2'     | 2.11                     | 0.50              |
| 8:CB:528:A:H2      | 8:CB:2043:C:H4'    | 1.73                     | 0.50              |
| 8:CB:784:G:OP1     | 8:CB:2588:G:H5''   | 2.12                     | 0.50              |
| 8:CB:826:U:OP1     | 8:CB:2428:G:H3'    | 2.12                     | 0.50              |
| 8:CB:855:G:C4      | 8:CB:923:G:N2      | 2.80                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1234:U:C2'   | 8:CB:1235:G:O5'    | 2.60                     | 0.50              |
| 8:CB:1307:A:C5    | 8:CB:1308:A:C8     | 3.00                     | 0.50              |
| 8:CB:1332:G:O6    | 8:CB:1609:A:C8     | 2.65                     | 0.50              |
| 8:CB:1368:G:H2'   | 8:CB:1369:G:C8     | 2.46                     | 0.50              |
| 8:CB:1452:G:O2'   | 8:CB:1453:A:OP2    | 2.28                     | 0.50              |
| 8:CB:1677:A:C2    | 8:CB:1678:A:N3     | 2.80                     | 0.50              |
| 8:CB:2052:A:O5'   | 8:CB:2052:A:H8     | 1.95                     | 0.50              |
| 8:CB:2243:U:C2    | 8:CB:2244:U:C5     | 3.00                     | 0.50              |
| 8:CB:2254:C:C5    | 8:CB:2255:G:N7     | 2.80                     | 0.50              |
| 8:CB:2269:G:OP1   | 55:CB:5393:HOH:O   | 2.20                     | 0.50              |
| 8:CB:2360:G:C2'   | 8:CB:2361:G:O5'    | 2.60                     | 0.50              |
| 8:CB:2708:G:C4    | 8:CB:2709:G:C8     | 2.99                     | 0.50              |
| 8:CB:2759:G:C2    | 8:CB:2760:C:C6     | 2.99                     | 0.50              |
| 8:CB:2892:G:H5''  | 8:CB:2894:G:N2     | 2.27                     | 0.50              |
| 9:CC:22:GLU:CA    | 9:CC:202:ARG:HE    | 2.24                     | 0.50              |
| 9:CC:32:LEU:N     | 9:CC:32:LEU:HD12   | 2.26                     | 0.50              |
| 10:CD:7:LYS:CB    | 10:CD:201:LEU:HD21 | 2.32                     | 0.50              |
| 10:CD:12:THR:OG1  | 10:CD:19:GLY:O     | 2.30                     | 0.50              |
| 11:CE:17:THR:HG23 | 11:CE:18:THR:N     | 2.26                     | 0.50              |
| 11:CE:191:ASP:C   | 11:CE:194:LYS:HZ3  | 2.14                     | 0.50              |
| 15:CI:16:MET:O    | 15:CI:17:ALA:HB2   | 2.11                     | 0.50              |
| 16:CJ:36:LEU:O    | 16:CJ:51:GLY:CA    | 2.58                     | 0.50              |
| 17:CK:88:ASN:OD1  | 17:CK:91:SER:HB2   | 2.12                     | 0.50              |
| 19:CM:4:PRO:HG2   | 19:CM:43:ALA:O     | 2.12                     | 0.50              |
| 19:CM:61:GLY:HA3  | 19:CM:105:MET:SD   | 2.52                     | 0.50              |
| 21:CO:25:ARG:HH21 | 21:CO:40:ILE:CD1   | 2.24                     | 0.50              |
| 22:CP:106:ALA:N   | 33:DA:1432:G:OP1   | 2.44                     | 0.50              |
| 27:CU:40:LEU:O    | 27:CU:41:VAL:HB    | 2.12                     | 0.50              |
| 30:CX:27:ASN:C    | 30:CX:29:ARG:H     | 2.15                     | 0.50              |
| 33:DA:33:A:H2'    | 33:DA:34:C:H6      | 1.75                     | 0.50              |
| 33:DA:244:U:C5    | 33:DA:894:G:N1     | 2.80                     | 0.50              |
| 33:DA:308:C:H2'   | 33:DA:309:A:C8     | 2.47                     | 0.50              |
| 33:DA:406:G:H8    | 33:DA:406:G:H5''   | 1.76                     | 0.50              |
| 33:DA:408:A:C5    | 33:DA:409:U:N1     | 2.80                     | 0.50              |
| 33:DA:620:C:N1    | 36:DD:131:ILE:HD13 | 2.26                     | 0.50              |
| 33:DA:715:A:H2'   | 33:DA:716:A:C8     | 2.47                     | 0.50              |
| 33:DA:773:G:H8    | 33:DA:773:G:O5'    | 1.95                     | 0.50              |
| 33:DA:880:C:N3    | 33:DA:881:G:C8     | 2.79                     | 0.50              |
| 33:DA:1121:U:H2'  | 33:DA:1122:U:C6    | 2.47                     | 0.50              |
| 33:DA:1132:C:H2'  | 33:DA:1133:G:C8    | 2.46                     | 0.50              |
| 34:DB:187:ASP:O   | 34:DB:188:THR:C    | 2.49                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DC:83:VAL:HG12 | 35:DC:86:LEU:CD1  | 2.41                     | 0.50              |
| 35:DC:108:PRO:HA  | 35:DC:111:ASP:CB  | 2.35                     | 0.50              |
| 36:DD:68:GLU:HG3  | 36:DD:72:ARG:HH21 | 1.76                     | 0.50              |
| 42:DJ:80:THR:HB   | 42:DJ:82:LYS:HD2  | 1.93                     | 0.50              |
| 43:DK:124:LYS:CB  | 53:DU:33:ARG:HH12 | 2.24                     | 0.50              |
| 44:DL:65:TYR:N    | 44:DL:94:TYR:O    | 2.45                     | 0.50              |
| 2:A1:29:LYS:CB    | 2:A1:30:PRO:HD2   | 2.42                     | 0.50              |
| 5:A4:25:VAL:O     | 5:A4:26:ILE:C     | 2.50                     | 0.50              |
| 5:A4:30:GLU:HB3   | 5:A4:33:HIS:NE2   | 2.26                     | 0.50              |
| 8:AB:160:A:O2'    | 8:AB:2208:C:H4'   | 2.12                     | 0.50              |
| 8:AB:182:A:H8     | 8:AB:182:A:O5'    | 1.95                     | 0.50              |
| 8:AB:203:A:H3'    | 8:AB:204:A:H2'    | 1.92                     | 0.50              |
| 8:AB:307:G:H8     | 8:AB:307:G:O5'    | 1.94                     | 0.50              |
| 8:AB:460:A:C2     | 8:AB:470:A:C4     | 3.00                     | 0.50              |
| 8:AB:515:A:C1'    | 8:AB:581:C:H1'    | 2.33                     | 0.50              |
| 8:AB:770:G:C4     | 8:AB:771:G:C8     | 3.00                     | 0.50              |
| 8:AB:808:G:C8     | 8:AB:808:G:C5'    | 2.95                     | 0.50              |
| 8:AB:827:U:P      | 8:AB:828:U:C5     | 3.05                     | 0.50              |
| 8:AB:856:G:O2'    | 29:AW:23:LYS:HB3  | 2.11                     | 0.50              |
| 8:AB:936:A:H2'    | 8:AB:937:C:C6     | 2.47                     | 0.50              |
| 8:AB:973:A:C8     | 8:AB:1188:U:C4    | 3.00                     | 0.50              |
| 8:AB:993:G:N1     | 8:AB:994:C:C5     | 2.80                     | 0.50              |
| 8:AB:1008:A:H8    | 8:AB:1008:A:O5'   | 1.95                     | 0.50              |
| 8:AB:1028:A:H1'   | 8:AB:2486:C:O2'   | 2.12                     | 0.50              |
| 8:AB:1103:A:C8    | 8:AB:1104:C:C4    | 2.99                     | 0.50              |
| 8:AB:1312:U:H5''  | 55:AB:4241:HOH:O  | 2.10                     | 0.50              |
| 8:AB:1386:C:H6    | 8:AB:1386:C:H5''  | 1.76                     | 0.50              |
| 8:AB:1437:C:H1'   | 8:AB:1515:A:H2    | 1.76                     | 0.50              |
| 8:AB:1584:U:H3'   | 8:AB:1585:C:H5'   | 1.93                     | 0.50              |
| 8:AB:1609:A:C2    | 8:AB:1616:A:C5    | 3.00                     | 0.50              |
| 8:AB:1649:G:O2'   | 8:AB:1650:A:H5'   | 2.12                     | 0.50              |
| 8:AB:1658:C:N3    | 8:AB:1659:G:N7    | 2.60                     | 0.50              |
| 8:AB:1747:U:H2'   | 8:AB:1748:C:C6    | 2.47                     | 0.50              |
| 8:AB:1809:A:H3'   | 8:AB:1810:A:C8    | 2.46                     | 0.50              |
| 8:AB:1838:C:C6    | 8:AB:1898:U:C5    | 3.00                     | 0.50              |
| 8:AB:2361:G:O2'   | 8:AB:2362:C:H5'   | 2.11                     | 0.50              |
| 8:AB:2583:G:N1    | 8:AB:2584:U:O2    | 2.44                     | 0.50              |
| 8:AB:2604:U:C2    | 8:AB:2605:U:C6    | 3.00                     | 0.50              |
| 8:AB:2648:G:N2    | 8:AB:2649:C:O2    | 2.45                     | 0.50              |
| 8:AB:2751:G:H5''  | 13:AG:2:ARG:O     | 2.12                     | 0.50              |
| 8:AB:2866:U:C4'   | 8:AB:2867:G:H4'   | 2.38                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AC:21:PRO:O      | 9:AC:22:GLU:CB     | 2.60                     | 0.50              |
| 14:AH:4:ILE:HG12   | 14:AH:17:ASP:O     | 2.11                     | 0.50              |
| 16:AJ:34:ARG:HD2   | 16:AJ:39:LYS:CB    | 2.41                     | 0.50              |
| 18:AL:106:GLU:HG2  | 18:AL:107:PHE:N    | 2.26                     | 0.50              |
| 19:AM:11:LYS:HG2   | 19:AM:12:MET:N     | 2.23                     | 0.50              |
| 19:AM:13:HIS:ND1   | 19:AM:13:HIS:N     | 2.60                     | 0.50              |
| 20:AN:70:THR:HG23  | 20:AN:70:THR:O     | 2.11                     | 0.50              |
| 20:AN:73:ASN:O     | 20:AN:74:GLU:C     | 2.49                     | 0.50              |
| 21:AO:14:ALA:C     | 21:AO:16:ARG:H     | 2.15                     | 0.50              |
| 21:AO:76:LYS:HE3   | 21:AO:77:ALA:HA    | 1.93                     | 0.50              |
| 21:AO:76:LYS:HZ1   | 21:AO:80:GLU:CB    | 2.24                     | 0.50              |
| 22:AP:71:ARG:NH2   | 22:AP:102:ARG:HA   | 2.27                     | 0.50              |
| 24:AR:46:GLU:O     | 24:AR:47:VAL:HB    | 2.12                     | 0.50              |
| 26:AT:20:ALA:O     | 26:AT:21:SER:HB2   | 2.11                     | 0.50              |
| 29:AW:5:ALA:O      | 29:AW:7:GLY:N      | 2.45                     | 0.50              |
| 30:AX:12:GLU:O     | 30:AX:14:LEU:HD12  | 2.12                     | 0.50              |
| 31:AY:46:MET:O     | 31:AY:50:VAL:HG22  | 2.12                     | 0.50              |
| 33:BA:35:G:C2      | 33:BA:550:G:N1     | 2.80                     | 0.50              |
| 33:BA:46:G:C4      | 33:BA:366:A:N7     | 2.80                     | 0.50              |
| 33:BA:199:A:H2'    | 33:BA:200:G:H8     | 1.77                     | 0.50              |
| 33:BA:317:U:O2'    | 33:BA:318:G:H5'    | 2.11                     | 0.50              |
| 33:BA:354:G:C2'    | 33:BA:355:C:H5'    | 2.40                     | 0.50              |
| 33:BA:481:G:C8     | 33:BA:481:G:C3'    | 2.95                     | 0.50              |
| 33:BA:519:C:H5'    | 44:BL:47:ALA:HA    | 1.94                     | 0.50              |
| 33:BA:784:A:C2     | 33:BA:785:G:C5     | 3.00                     | 0.50              |
| 33:BA:856:C:O2'    | 33:BA:857:C:H5'    | 2.11                     | 0.50              |
| 33:BA:885:G:O5'    | 33:BA:885:G:C8     | 2.59                     | 0.50              |
| 33:BA:922:G:H4'    | 37:BE:24:VAL:CB    | 2.39                     | 0.50              |
| 33:BA:1092:A:C6    | 33:BA:1093:A:C2    | 3.00                     | 0.50              |
| 33:BA:1497:G:H2'   | 33:BA:1498:U:H5'   | 1.94                     | 0.50              |
| 34:BB:10:LYS:C     | 34:BB:12:GLY:N     | 2.66                     | 0.50              |
| 34:BB:187:ASP:CG   | 34:BB:203:ASP:HB3  | 2.32                     | 0.50              |
| 35:BC:5:HIS:CG     | 46:BN:88:MET:HB3   | 2.47                     | 0.50              |
| 35:BC:181:ILE:HG23 | 35:BC:201:ILE:O    | 2.12                     | 0.50              |
| 36:BD:56:GLU:O     | 36:BD:199:ILE:HG12 | 2.10                     | 0.50              |
| 37:BE:45:VAL:HG11  | 37:BE:117:ALA:CB   | 2.41                     | 0.50              |
| 37:BE:148:SER:O    | 37:BE:150:GLU:N    | 2.45                     | 0.50              |
| 39:BG:20:GLU:HA    | 39:BG:23:ALA:CB    | 2.42                     | 0.50              |
| 40:BH:9:MET:CE     | 40:BH:32:LYS:HB3   | 2.42                     | 0.50              |
| 41:BI:43:ALA:C     | 41:BI:45:MET:H     | 2.14                     | 0.50              |
| 42:BJ:59:LYS:C     | 42:BJ:61:ALA:H     | 2.14                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BN:42:ASN:CB    | 46:BN:46:LYS:HE2   | 2.39                     | 0.50              |
| 53:BU:6:ARG:O      | 53:BU:7:GLU:HG3    | 2.11                     | 0.50              |
| 2:C1:34:GLU:HB3    | 2:C1:50:GLU:HB2    | 1.93                     | 0.50              |
| 5:C4:18:LYS:CE     | 5:C4:19:ARG:H      | 2.24                     | 0.50              |
| 5:C4:24:ARG:CB     | 5:C4:36:ARG:C      | 2.80                     | 0.50              |
| 7:CA:61:G:C5       | 7:CA:62:C:C5       | 3.00                     | 0.50              |
| 8:CB:42:A:H5''     | 8:CB:43:G:OP2      | 2.11                     | 0.50              |
| 8:CB:390:U:H4'     | 8:CB:391:A:H5''    | 1.92                     | 0.50              |
| 8:CB:473:G:C2'     | 8:CB:474:G:H5'     | 2.41                     | 0.50              |
| 8:CB:506:G:H4'     | 8:CB:507:A:O4'     | 2.11                     | 0.50              |
| 8:CB:539:G:H21     | 8:CB:540:C:H1'     | 1.76                     | 0.50              |
| 8:CB:571:U:C5      | 8:CB:575:A:N6      | 2.80                     | 0.50              |
| 8:CB:577:G:H2'     | 8:CB:578:G:C8      | 2.47                     | 0.50              |
| 8:CB:587:C:N3      | 8:CB:671:C:C6      | 2.79                     | 0.50              |
| 8:CB:696:G:C6      | 8:CB:767:U:O2      | 2.64                     | 0.50              |
| 8:CB:718:A:H3'     | 8:CB:719:C:H6      | 1.76                     | 0.50              |
| 8:CB:812:C:H2'     | 8:CB:813:U:H5'     | 1.94                     | 0.50              |
| 8:CB:1010:A:C2'    | 8:CB:1011:G:O5'    | 2.59                     | 0.50              |
| 8:CB:1134:A:O5'    | 8:CB:1134:A:C2'    | 2.60                     | 0.50              |
| 8:CB:1215:G:C3'    | 8:CB:1216:G:H5''   | 2.42                     | 0.50              |
| 8:CB:1275:A:H2'    | 8:CB:1276:A:O5'    | 2.11                     | 0.50              |
| 8:CB:1286:A:O2'    | 8:CB:1287:A:H5''   | 2.12                     | 0.50              |
| 8:CB:1357:C:H2'    | 8:CB:1358:G:O4'    | 2.12                     | 0.50              |
| 8:CB:1444:G:H2'    | 8:CB:1445:G:C8     | 2.47                     | 0.50              |
| 8:CB:1515:A:H2'    | 8:CB:1516:G:O4'    | 2.11                     | 0.50              |
| 8:CB:1570:A:C5     | 8:CB:1571:A:C5     | 3.00                     | 0.50              |
| 8:CB:2025:C:P      | 10:CD:154:LYS:HZ2  | 2.34                     | 0.50              |
| 8:CB:2261:C:N3     | 8:CB:2280:G:N2     | 2.59                     | 0.50              |
| 8:CB:2279:G:H5''   | 8:CB:2279:G:C8     | 2.46                     | 0.50              |
| 8:CB:2305:U:C6     | 12:CF:151:LEU:N    | 2.80                     | 0.50              |
| 8:CB:2316:G:C2     | 8:CB:2317:A:C8     | 3.00                     | 0.50              |
| 8:CB:2655:G:N2     | 8:CB:2664:G:C4     | 2.80                     | 0.50              |
| 8:CB:2821:A:OP2    | 10:CD:115:GLY:CA   | 2.60                     | 0.50              |
| 11:CE:52:VAL:C     | 11:CE:53:THR:OG1   | 2.49                     | 0.50              |
| 12:CF:56:LEU:O     | 12:CF:59:ILE:HG22  | 2.12                     | 0.50              |
| 13:CG:60:GLY:HA2   | 13:CG:63:GLN:HB2   | 1.94                     | 0.50              |
| 14:CH:35:LYS:HZ1   | 14:CH:37:VAL:HG22  | 1.76                     | 0.50              |
| 14:CH:59:ALA:HA    | 14:CH:62:LEU:HB2   | 1.92                     | 0.50              |
| 15:CI:105:LEU:HD23 | 15:CI:108:ILE:HD12 | 1.94                     | 0.50              |
| 17:CK:48:PRO:C     | 17:CK:49:ARG:HD3   | 2.32                     | 0.50              |
| 19:CM:74:THR:HA    | 19:CM:88:ASN:HA    | 1.94                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:CN:67:PHE:CD1  | 20:CN:67:PHE:O    | 2.64                     | 0.50              |
| 24:CR:59:ILE:O    | 24:CR:59:ILE:HG22 | 2.11                     | 0.50              |
| 27:CU:3:LYS:C     | 27:CU:4:ILE:HG12  | 2.32                     | 0.50              |
| 30:CX:26:PHE:C    | 30:CX:29:ARG:HB2  | 2.32                     | 0.50              |
| 31:CY:7:THR:OG1   | 31:CY:55:LYS:O    | 2.27                     | 0.50              |
| 33:DA:126:G:C4'   | 33:DA:634:C:HO2'  | 2.23                     | 0.50              |
| 33:DA:296:U:O2'   | 33:DA:556:C:O2    | 2.29                     | 0.50              |
| 33:DA:441:A:C2    | 33:DA:497:G:C5    | 3.00                     | 0.50              |
| 33:DA:506:G:C6    | 33:DA:507:C:N4    | 2.79                     | 0.50              |
| 33:DA:717:U:C2    | 33:DA:734:G:N7    | 2.80                     | 0.50              |
| 33:DA:775:G:O2'   | 33:DA:776:G:H5'   | 2.12                     | 0.50              |
| 33:DA:780:A:H3'   | 33:DA:780:A:H8    | 1.74                     | 0.50              |
| 33:DA:935:A:C2    | 33:DA:936:C:N3    | 2.79                     | 0.50              |
| 33:DA:1077:G:H5'' | 33:DA:1078:U:OP2  | 2.12                     | 0.50              |
| 33:DA:1138:G:H2'  | 33:DA:1140:C:C4'  | 2.42                     | 0.50              |
| 33:DA:1202:U:C2   | 46:DN:81:ILE:HD13 | 2.47                     | 0.50              |
| 33:DA:1264:U:H3   | 33:DA:1271:A:H61  | 1.59                     | 0.50              |
| 33:DA:1349:A:N3   | 33:DA:1374:A:C2   | 2.79                     | 0.50              |
| 55:DA:5257:HOH:O  | 41:DI:119:LYS:HG3 | 2.11                     | 0.50              |
| 34:DB:130:LYS:CA  | 34:DB:133:ALA:HB3 | 2.24                     | 0.50              |
| 35:DC:35:ASP:HA   | 35:DC:38:VAL:HG22 | 1.94                     | 0.50              |
| 35:DC:85:LYS:O    | 35:DC:89:VAL:HG22 | 2.10                     | 0.50              |
| 38:DF:6:ILE:HD12  | 38:DF:7:VAL:N     | 2.27                     | 0.50              |
| 40:DH:63:LYS:O    | 40:DH:70:VAL:HG22 | 2.11                     | 0.50              |
| 41:DI:120:ALA:O   | 41:DI:121:ARG:HG2 | 2.12                     | 0.50              |
| 50:DR:26:ALA:O    | 50:DR:29:LYS:HB2  | 2.12                     | 0.50              |
| 52:DT:77:ASN:OD1  | 52:DT:78:LEU:N    | 2.44                     | 0.50              |
| 5:A4:22:VAL:HG23  | 5:A4:22:VAL:O     | 2.11                     | 0.50              |
| 7:AA:40:U:C6      | 7:AA:43:C:OP2     | 2.65                     | 0.50              |
| 8:AB:133:U:H3     | 8:AB:146:A:N6     | 2.04                     | 0.50              |
| 8:AB:169:G:C6     | 8:AB:170:U:C4     | 2.99                     | 0.50              |
| 8:AB:261:G:N2     | 8:AB:262:A:C5     | 2.80                     | 0.50              |
| 8:AB:312:G:C2'    | 8:AB:313:G:H5'    | 2.42                     | 0.50              |
| 8:AB:344:A:C2     | 8:AB:345:A:N7     | 2.80                     | 0.50              |
| 8:AB:381:G:N1     | 8:AB:394:C:C5     | 2.78                     | 0.50              |
| 8:AB:398:C:O5'    | 32:AZ:49:ARG:CZ   | 2.60                     | 0.50              |
| 8:AB:585:G:H2'    | 8:AB:1251:C:H42   | 1.76                     | 0.50              |
| 8:AB:605:G:N2     | 8:AB:624:C:C2     | 2.80                     | 0.50              |
| 8:AB:689:A:C2     | 8:AB:690:G:C4     | 2.99                     | 0.50              |
| 8:AB:697:G:C6     | 8:AB:698:C:N4     | 2.80                     | 0.50              |
| 8:AB:1034:G:H8    | 8:AB:1034:G:C5'   | 2.25                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1086:A:H3'   | 8:AB:1086:A:N3     | 2.26                     | 0.50              |
| 8:AB:1263:U:N3    | 8:AB:1264:A:N1     | 2.60                     | 0.50              |
| 8:AB:1410:G:N3    | 8:AB:1410:G:H2'    | 2.27                     | 0.50              |
| 8:AB:1420:A:C4    | 8:AB:2211:A:N7     | 2.80                     | 0.50              |
| 8:AB:1452:G:HO2'  | 8:AB:1453:A:P      | 2.34                     | 0.50              |
| 8:AB:1615:C:C4    | 8:AB:1617:C:C6     | 3.00                     | 0.50              |
| 8:AB:1797:G:N7    | 8:AB:1798:U:C5     | 2.80                     | 0.50              |
| 8:AB:1913:A:N6    | 33:BA:1492:A:N3    | 2.59                     | 0.50              |
| 8:AB:2013:A:H2'   | 8:AB:2013:A:N3     | 2.27                     | 0.50              |
| 8:AB:2046:G:N2    | 8:AB:2623:G:H1'    | 2.26                     | 0.50              |
| 8:AB:2062:A:C2'   | 8:AB:2063:C:H5'    | 2.39                     | 0.50              |
| 8:AB:2144:G:N2    | 8:AB:2148:G:N3     | 2.59                     | 0.50              |
| 8:AB:2773:C:OP1   | 10:AD:169:ARG:NH2  | 2.45                     | 0.50              |
| 8:AB:2800:A:H2'   | 8:AB:2801:G:C1'    | 2.42                     | 0.50              |
| 9:AC:143:VAL:HB   | 9:AC:152:GLN:HG3   | 1.93                     | 0.50              |
| 9:AC:166:ARG:HH22 | 36:DD:163:GLN:HE22 | 1.60                     | 0.50              |
| 9:AC:244:VAL:H    | 9:AC:249:VAL:CG2   | 2.23                     | 0.50              |
| 9:AC:251:THR:O    | 9:AC:253:GLY:N     | 2.45                     | 0.50              |
| 11:AE:151:GLY:HA3 | 11:AE:188:MET:SD   | 2.52                     | 0.50              |
| 12:AF:7:TYR:O     | 12:AF:12:VAL:HG23  | 2.12                     | 0.50              |
| 12:AF:76:PHE:CD1  | 12:AF:78:ILE:HD12  | 2.47                     | 0.50              |
| 12:AF:106:ALA:HB1 | 12:AF:136:ILE:CG2  | 2.39                     | 0.50              |
| 13:AG:5:LYS:HG3   | 13:AG:7:PRO:HD2    | 1.93                     | 0.50              |
| 15:AI:23:VAL:HG12 | 15:AI:27:LEU:HD21  | 1.93                     | 0.50              |
| 16:AJ:65:THR:OG1  | 16:AJ:68:LYS:HB2   | 2.12                     | 0.50              |
| 19:AM:71:LYS:O    | 19:AM:72:PRO:C     | 2.50                     | 0.50              |
| 21:AO:17:LYS:HG3  | 21:AO:43:ASN:CG    | 2.32                     | 0.50              |
| 25:AS:37:THR:HA   | 25:AS:48:LYS:HE2   | 1.94                     | 0.50              |
| 27:AU:27:VAL:HG23 | 27:AU:32:LYS:C     | 2.32                     | 0.50              |
| 27:AU:33:VAL:HG23 | 27:AU:63:ALA:O     | 2.12                     | 0.50              |
| 30:AX:22:LEU:O    | 30:AX:24:GLU:N     | 2.45                     | 0.50              |
| 32:AZ:19:GLY:O    | 32:AZ:20:ASN:HB2   | 2.12                     | 0.50              |
| 33:BA:46:G:N2     | 33:BA:396:C:C2     | 2.80                     | 0.50              |
| 33:BA:279:A:H5'   | 33:BA:281:G:O4'    | 2.12                     | 0.50              |
| 33:BA:318:G:N3    | 33:BA:319:G:C8     | 2.80                     | 0.50              |
| 33:BA:502:A:C5    | 33:BA:503:C:C5     | 2.99                     | 0.50              |
| 33:BA:663:A:H2'   | 33:BA:664:G:H8     | 1.77                     | 0.50              |
| 33:BA:772:U:H2'   | 33:BA:773:G:O4'    | 2.12                     | 0.50              |
| 33:BA:775:G:C2    | 33:BA:776:G:C8     | 3.00                     | 0.50              |
| 33:BA:831:A:C8    | 33:BA:831:A:C3'    | 2.95                     | 0.50              |
| 33:BA:1008:U:O5'  | 33:BA:1008:U:H6    | 1.95                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:1068:G:C2'  | 33:BA:1069:C:H5'   | 2.42                     | 0.50              |
| 33:BA:1387:G:C4   | 33:BA:1388:C:C5    | 3.00                     | 0.50              |
| 33:BA:1532:U:C2   | 33:BA:1534:A:OP2   | 2.64                     | 0.50              |
| 34:BB:65:LYS:HB2  | 34:BB:157:PRO:HA   | 1.94                     | 0.50              |
| 36:BD:31:CYS:O    | 36:BD:32:LYS:CB    | 2.59                     | 0.50              |
| 36:BD:84:ASN:HB3  | 36:BD:87:GLU:HB3   | 1.94                     | 0.50              |
| 37:BE:14:LEU:HD13 | 37:BE:15:ILE:H     | 1.77                     | 0.50              |
| 41:BI:121:ARG:HB2 | 41:BI:121:ARG:HH11 | 1.77                     | 0.50              |
| 1:C0:2:VAL:HG22   | 1:C0:3:GLN:N       | 2.27                     | 0.50              |
| 1:C0:3:GLN:HB3    | 8:CB:2615:U:H1'    | 1.93                     | 0.50              |
| 1:C0:29:VAL:HG22  | 1:C0:32:THR:CG2    | 2.19                     | 0.50              |
| 5:C4:2:LYS:HD2    | 8:CB:2526:G:H1'    | 1.93                     | 0.50              |
| 7:CA:28:C:C5'     | 21:CO:31:THR:HG21  | 2.42                     | 0.50              |
| 7:CA:31:C:N4      | 21:CO:32:PRO:CB    | 2.74                     | 0.50              |
| 8:CB:115:C:H2'    | 8:CB:116:C:H5'     | 1.94                     | 0.50              |
| 8:CB:163:C:C2'    | 8:CB:164:C:O4'     | 2.56                     | 0.50              |
| 8:CB:191:A:H2'    | 8:CB:192:C:O4'     | 2.12                     | 0.50              |
| 8:CB:197:A:N6     | 8:CB:2430:A:H2'    | 2.27                     | 0.50              |
| 8:CB:282:A:H2'    | 8:CB:283:G:C8      | 2.47                     | 0.50              |
| 8:CB:538:A:C6     | 8:CB:539:G:C5      | 3.00                     | 0.50              |
| 8:CB:605:G:N2     | 8:CB:624:C:C2      | 2.80                     | 0.50              |
| 8:CB:753:A:C2     | 8:CB:754:U:C4      | 3.00                     | 0.50              |
| 8:CB:795:C:O2'    | 8:CB:796:C:OP1     | 2.26                     | 0.50              |
| 8:CB:832:U:H2'    | 8:CB:833:A:C8      | 2.47                     | 0.50              |
| 8:CB:869:G:H2'    | 8:CB:870:U:H6      | 1.77                     | 0.50              |
| 8:CB:1088:A:N6    | 15:CI:134:SER:OG   | 2.44                     | 0.50              |
| 8:CB:1358:G:N7    | 8:CB:1371:G:C6     | 2.80                     | 0.50              |
| 8:CB:1452:G:C2    | 8:CB:2702:G:C4     | 3.00                     | 0.50              |
| 8:CB:1548:A:C2    | 8:CB:1549:A:C5     | 2.99                     | 0.50              |
| 8:CB:1805:A:H2'   | 8:CB:1806:C:C5'    | 2.42                     | 0.50              |
| 8:CB:2019:A:H2'   | 8:CB:2020:A:O5'    | 2.11                     | 0.50              |
| 8:CB:2049:G:N2    | 8:CB:2619:C:C2     | 2.80                     | 0.50              |
| 8:CB:2240:U:N3    | 8:CB:2241:A:N7     | 2.59                     | 0.50              |
| 8:CB:2241:A:H2    | 8:CB:2242:G:C4     | 2.30                     | 0.50              |
| 8:CB:2242:G:H2'   | 8:CB:2243:U:O4'    | 2.11                     | 0.50              |
| 8:CB:2299:U:H6    | 8:CB:2299:U:H3'    | 1.77                     | 0.50              |
| 8:CB:2370:G:H2'   | 8:CB:2371:G:O5'    | 2.12                     | 0.50              |
| 8:CB:2450:A:C2    | 8:CB:2451:A:C4     | 3.00                     | 0.50              |
| 8:CB:2453:A:H2'   | 8:CB:2454:G:O5'    | 2.11                     | 0.50              |
| 8:CB:2478:A:C8    | 8:CB:2478:A:H5'    | 2.47                     | 0.50              |
| 8:CB:2524:G:H2'   | 8:CB:2525:G:H8     | 1.76                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:CC:21:PRO:HD2    | 9:CC:202:ARG:HH12  | 1.75                     | 0.50              |
| 9:CC:36:ASN:HB3    | 9:CC:63:ILE:N      | 2.26                     | 0.50              |
| 9:CC:193:GLU:C     | 9:CC:194:VAL:HG22  | 2.32                     | 0.50              |
| 9:CC:256:THR:O     | 9:CC:258:SER:N     | 2.45                     | 0.50              |
| 10:CD:108:ASP:OD1  | 10:CD:207:VAL:HG22 | 2.12                     | 0.50              |
| 10:CD:195:GLY:HA3  | 10:CD:199:SER:OG   | 2.12                     | 0.50              |
| 11:CE:60:TRP:CZ3   | 11:CE:67:ARG:CB    | 2.95                     | 0.50              |
| 12:CF:133:GLU:O    | 12:CF:134:GLN:O    | 2.30                     | 0.50              |
| 13:CG:163:TYR:CD2  | 13:CG:163:TYR:N    | 2.68                     | 0.50              |
| 14:CH:25:TYR:CD1   | 14:CH:31:VAL:HG21  | 2.47                     | 0.50              |
| 16:CJ:79:GLY:C     | 16:CJ:81:ILE:N     | 2.65                     | 0.50              |
| 18:CL:118:THR:HA   | 18:CL:137:ALA:O    | 2.12                     | 0.50              |
| 20:CN:33:ILE:HG23  | 20:CN:113:ILE:O    | 2.11                     | 0.50              |
| 20:CN:103:ARG:O    | 20:CN:103:ARG:HG3  | 2.11                     | 0.50              |
| 22:CP:103:THR:HG22 | 22:CP:105:LYS:HD3  | 1.94                     | 0.50              |
| 23:CQ:59:LEU:O     | 23:CQ:60:TRP:C     | 2.51                     | 0.50              |
| 24:CR:72:VAL:HG23  | 24:CR:92:TRP:CE3   | 2.47                     | 0.50              |
| 25:CS:89:ALA:O     | 25:CS:90:LYS:HB2   | 2.12                     | 0.50              |
| 30:CX:17:GLU:HA    | 30:CX:21:LEU:HB2   | 1.92                     | 0.50              |
| 33:DA:152:A:N6     | 33:DA:170:U:C2     | 2.79                     | 0.50              |
| 33:DA:244:U:C6     | 33:DA:894:G:N2     | 2.79                     | 0.50              |
| 33:DA:371:A:N6     | 33:DA:390:U:H3     | 2.10                     | 0.50              |
| 33:DA:447:G:N2     | 33:DA:488:C:H42    | 2.10                     | 0.50              |
| 33:DA:518:C:O4'    | 33:DA:529:G:C2     | 2.65                     | 0.50              |
| 33:DA:540:G:C8     | 33:DA:541:G:C8     | 3.00                     | 0.50              |
| 33:DA:550:G:O2'    | 33:DA:551:U:C5'    | 2.59                     | 0.50              |
| 33:DA:594:U:C2     | 33:DA:646:G:C6     | 3.00                     | 0.50              |
| 33:DA:630:A:H2'    | 33:DA:631:C:O4'    | 2.11                     | 0.50              |
| 33:DA:642:A:C4     | 40:DH:105:THR:O    | 2.65                     | 0.50              |
| 33:DA:695:A:H2     | 33:DA:787:A:C4'    | 2.22                     | 0.50              |
| 33:DA:785:G:N2     | 33:DA:798:U:N1     | 2.60                     | 0.50              |
| 33:DA:935:A:H2     | 33:DA:936:C:C2     | 2.30                     | 0.50              |
| 33:DA:939:G:C5     | 33:DA:940:C:C4     | 3.00                     | 0.50              |
| 33:DA:950:U:C2     | 33:DA:951:G:N7     | 2.80                     | 0.50              |
| 33:DA:1034:G:C6    | 33:DA:1035:A:N6    | 2.80                     | 0.50              |
| 33:DA:1096:C:H2'   | 33:DA:1097:C:C6    | 2.47                     | 0.50              |
| 33:DA:1164:G:C2    | 33:DA:1165:U:H1'   | 2.46                     | 0.50              |
| 33:DA:1241:G:O2'   | 33:DA:1242:G:H5'   | 2.12                     | 0.50              |
| 33:DA:1356:G:O2'   | 33:DA:1357:A:H5'   | 2.12                     | 0.50              |
| 33:DA:1507:A:C6    | 33:DA:1508:A:N6    | 2.80                     | 0.50              |
| 33:DA:1530:G:O2'   | 33:DA:1531:A:C8    | 2.59                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DD:32:LYS:HZ2  | 36:DD:36:ALA:HB3   | 1.76                     | 0.50              |
| 38:DF:76:THR:O    | 38:DF:80:PHE:HB2   | 2.12                     | 0.50              |
| 40:DH:31:LEU:O    | 40:DH:32:LYS:C     | 2.50                     | 0.50              |
| 41:DI:50:PRO:HD3  | 41:DI:79:ARG:HG2   | 1.93                     | 0.50              |
| 46:DN:62:ARG:CD   | 46:DN:69:PRO:HD3   | 2.41                     | 0.50              |
| 46:DN:72:PHE:HD1  | 46:DN:78:LEU:O     | 1.94                     | 0.50              |
| 53:DU:31:VAL:HG12 | 53:DU:31:VAL:O     | 2.11                     | 0.50              |
| 3:A2:17:GLY:HA2   | 3:A2:21:ARG:HH11   | 1.75                     | 0.49              |
| 8:AB:194:G:C5     | 8:AB:195:A:N7      | 2.80                     | 0.49              |
| 8:AB:221:A:C2     | 8:AB:233:A:C4      | 2.99                     | 0.49              |
| 8:AB:253:C:O2     | 8:AB:253:C:C2'     | 2.60                     | 0.49              |
| 8:AB:396:G:O2'    | 32:AZ:28:VAL:CB    | 2.60                     | 0.49              |
| 8:AB:445:C:O2'    | 8:AB:446:G:H5'     | 2.12                     | 0.49              |
| 8:AB:587:C:N3     | 18:AL:38:GLN:OE1   | 2.46                     | 0.49              |
| 8:AB:794:A:C5     | 8:AB:795:C:C5      | 3.00                     | 0.49              |
| 8:AB:933:A:C8     | 8:AB:933:A:C3'     | 2.94                     | 0.49              |
| 8:AB:988:A:O5'    | 8:AB:988:A:C8      | 2.59                     | 0.49              |
| 8:AB:1165:A:H8    | 8:AB:1165:A:O5'    | 1.95                     | 0.49              |
| 8:AB:1276:A:C6    | 8:AB:1295:C:C2     | 2.99                     | 0.49              |
| 8:AB:1309:G:H8    | 8:AB:1309:G:C5'    | 2.24                     | 0.49              |
| 8:AB:1486:U:O2    | 8:AB:1504:A:C2     | 2.65                     | 0.49              |
| 8:AB:1824:G:N3    | 9:AC:249:VAL:HG11  | 2.27                     | 0.49              |
| 8:AB:2048:G:O4'   | 8:AB:2823:A:C2     | 2.65                     | 0.49              |
| 8:AB:2061:G:N3    | 8:AB:2063:C:C4     | 2.80                     | 0.49              |
| 8:AB:2105:U:H3'   | 8:AB:2105:U:H6     | 1.75                     | 0.49              |
| 8:AB:2435:A:H2'   | 8:AB:2436:G:O5'    | 2.11                     | 0.49              |
| 8:AB:2514:U:C2    | 8:AB:2515:C:C5     | 3.00                     | 0.49              |
| 8:AB:2519:U:C5    | 8:AB:2541:A:C6     | 2.99                     | 0.49              |
| 8:AB:2633:G:H2'   | 8:AB:2634:A:O4'    | 2.12                     | 0.49              |
| 9:AC:17:LYS:HE2   | 9:AC:17:LYS:H      | 1.76                     | 0.49              |
| 9:AC:243:PRO:HB2  | 9:AC:248:GLY:H     | 1.77                     | 0.49              |
| 10:AD:128:ARG:HD3 | 10:AD:129:THR:N    | 2.26                     | 0.49              |
| 10:AD:138:LEU:O   | 10:AD:142:VAL:HG22 | 2.12                     | 0.49              |
| 16:AJ:100:VAL:O   | 16:AJ:101:ILE:CG1  | 2.54                     | 0.49              |
| 17:AK:2:ILE:HG22  | 17:AK:32:TYR:HB2   | 1.94                     | 0.49              |
| 18:AL:38:GLN:CA   | 18:AL:41:ARG:CZ    | 2.89                     | 0.49              |
| 18:AL:108:ALA:HB3 | 18:AL:125:LEU:HD12 | 1.94                     | 0.49              |
| 18:AL:117:THR:CG2 | 18:AL:118:THR:N    | 2.64                     | 0.49              |
| 20:AN:46:ARG:O    | 20:AN:50:PRO:HG2   | 2.11                     | 0.49              |
| 20:AN:66:ALA:HB1  | 20:AN:76:VAL:HG11  | 1.93                     | 0.49              |
| 21:AO:17:LYS:HG3  | 21:AO:43:ASN:OD1   | 2.11                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 21:AO:35:ILE:HD13  | 21:AO:35:ILE:N     | 2.19                     | 0.49              |
| 21:AO:38:GLN:HB2   | 21:AO:49:VAL:CG2   | 2.42                     | 0.49              |
| 25:AS:29:VAL:HG21  | 25:AS:70:LYS:N     | 2.27                     | 0.49              |
| 31:AY:19:HIS:O     | 31:AY:21:ALA:N     | 2.45                     | 0.49              |
| 33:BA:104:G:N2     | 33:BA:105:G:C4     | 2.80                     | 0.49              |
| 33:BA:125:U:O2     | 33:BA:126:G:C8     | 2.65                     | 0.49              |
| 33:BA:514:C:H5''   | 33:BA:514:C:H6     | 1.77                     | 0.49              |
| 33:BA:947:G:H5''   | 45:BM:106:ARG:HB3  | 1.93                     | 0.49              |
| 33:BA:976:G:H5'    | 33:BA:977:A:OP1    | 2.11                     | 0.49              |
| 33:BA:1076:U:N3    | 33:BA:1082:A:C2    | 2.80                     | 0.49              |
| 33:BA:1109:C:OP2   | 35:BC:175:HIS:CG   | 2.65                     | 0.49              |
| 33:BA:1405:G:C2    | 33:BA:1406:U:C4    | 3.00                     | 0.49              |
| 33:BA:1438:G:H22   | 33:BA:1464:U:H1'   | 1.75                     | 0.49              |
| 33:BA:1523:G:C5    | 33:BA:1524:C:C5    | 3.00                     | 0.49              |
| 34:BB:150:ILE:HG23 | 34:BB:150:ILE:O    | 2.12                     | 0.49              |
| 35:BC:181:ILE:HG12 | 35:BC:202:PHE:HA   | 1.92                     | 0.49              |
| 36:BD:103:ARG:NH1  | 36:BD:169:TRP:HZ2  | 2.09                     | 0.49              |
| 36:BD:123:MET:O    | 36:BD:124:VAL:HG23 | 2.12                     | 0.49              |
| 36:BD:196:GLU:O    | 36:BD:197:HIS:C    | 2.50                     | 0.49              |
| 37:BE:143:LEU:O    | 37:BE:146:MET:HB2  | 2.12                     | 0.49              |
| 38:BF:11:HIS:CD2   | 38:BF:14:GLN:H     | 2.24                     | 0.49              |
| 38:BF:85:ILE:O     | 38:BF:86:ARG:C     | 2.49                     | 0.49              |
| 40:BH:102:VAL:HG13 | 40:BH:110:MET:O    | 2.12                     | 0.49              |
| 45:BM:42:VAL:C     | 45:BM:43:LYS:HD2   | 2.32                     | 0.49              |
| 46:BN:15:LEU:HD12  | 46:BN:16:ALA:N     | 2.27                     | 0.49              |
| 48:BP:54:LEU:O     | 48:BP:57:ILE:N     | 2.42                     | 0.49              |
| 51:BS:38:THR:HA    | 51:BS:69:LYS:HA    | 1.94                     | 0.49              |
| 51:BS:40:PHE:CB    | 51:BS:41:PRO:HD2   | 2.40                     | 0.49              |
| 1:C0:41:HIS:CD2    | 1:C0:42:ILE:N      | 2.79                     | 0.49              |
| 3:C2:16:HIS:CG     | 3:C2:44:VAL:O      | 2.64                     | 0.49              |
| 3:C2:21:ARG:NH2    | 8:CB:466:A:OP1     | 2.45                     | 0.49              |
| 4:C3:32:LEU:HD22   | 4:C3:34:LYS:HD3    | 1.94                     | 0.49              |
| 7:CA:85:G:O2'      | 7:CA:86:G:H5'      | 2.12                     | 0.49              |
| 7:CA:99:A:C2'      | 7:CA:100:G:H5'     | 2.41                     | 0.49              |
| 8:CB:268:C:H5''    | 8:CB:268:C:C6      | 2.43                     | 0.49              |
| 8:CB:390:U:H4'     | 8:CB:391:A:H5'     | 1.92                     | 0.49              |
| 8:CB:440:C:C5      | 8:CB:441:U:H5      | 2.29                     | 0.49              |
| 8:CB:458:G:N2      | 8:CB:469:G:C4      | 2.80                     | 0.49              |
| 8:CB:539:G:C2'     | 8:CB:540:C:H5'     | 2.42                     | 0.49              |
| 8:CB:540:C:C2      | 8:CB:541:A:C8      | 3.00                     | 0.49              |
| 8:CB:856:G:H1'     | 29:CW:23:LYS:HD2   | 1.94                     | 0.49              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 8:CB:909:A:N1    | 8:CB:912:C:C2      | 2.80                     | 0.49              |
| 8:CB:1012:U:O4   | 16:CJ:30:THR:HG21  | 2.12                     | 0.49              |
| 8:CB:1315:C:H2'  | 8:CB:1316:U:C6     | 2.47                     | 0.49              |
| 8:CB:1432:G:C2'  | 8:CB:1433:A:H5'    | 2.42                     | 0.49              |
| 8:CB:1478:G:C8   | 8:CB:1478:G:C5'    | 2.95                     | 0.49              |
| 8:CB:1740:G:H2'  | 8:CB:1741:C:C6     | 2.46                     | 0.49              |
| 8:CB:1754:A:H2'  | 8:CB:1755:A:C8     | 2.45                     | 0.49              |
| 8:CB:2027:G:C5   | 8:CB:2028:U:C5     | 3.00                     | 0.49              |
| 8:CB:2258:C:H6   | 8:CB:2258:C:H5'    | 1.76                     | 0.49              |
| 8:CB:2452:C:C6   | 8:CB:2452:C:C3'    | 2.93                     | 0.49              |
| 8:CB:2459:A:N6   | 8:CB:2494:G:N3     | 2.60                     | 0.49              |
| 8:CB:2595:G:H1   | 9:CC:237:ARG:HH22  | 1.58                     | 0.49              |
| 8:CB:2699:C:N3   | 8:CB:2709:G:C6     | 2.80                     | 0.49              |
| 8:CB:2820:A:OP1  | 20:CN:5:LYS:HG2    | 2.12                     | 0.49              |
| 9:CC:20:ASN:CB   | 9:CC:202:ARG:NH1   | 2.56                     | 0.49              |
| 9:CC:61:TYR:HD2  | 9:CC:84:PRO:CD     | 2.25                     | 0.49              |
| 10:CD:6:GLY:HA2  | 10:CD:201:LEU:HD13 | 1.94                     | 0.49              |
| 10:CD:191:GLY:O  | 10:CD:192:ALA:CB   | 2.60                     | 0.49              |
| 11:CE:27:LEU:C   | 11:CE:29:HIS:N     | 2.62                     | 0.49              |
| 13:CG:85:LYS:HD3 | 13:CG:164:ALA:HB3  | 1.92                     | 0.49              |
| 16:CJ:20:ALA:O   | 16:CJ:21:THR:C     | 2.50                     | 0.49              |
| 16:CJ:37:ARG:HG3 | 16:CJ:118:MET:HE1  | 1.94                     | 0.49              |
| 16:CJ:85:LYS:HZ3 | 16:CJ:86:GLN:H     | 1.59                     | 0.49              |
| 16:CJ:94:ALA:HA  | 16:CJ:97:PRO:HB3   | 1.94                     | 0.49              |
| 18:CL:75:ALA:O   | 18:CL:108:ALA:O    | 2.30                     | 0.49              |
| 20:CN:12:ARG:NH1 | 20:CN:20:MET:SD    | 2.85                     | 0.49              |
| 21:CO:53:THR:O   | 21:CO:54:VAL:HB    | 2.12                     | 0.49              |
| 22:CP:52:ARG:O   | 22:CP:52:ARG:HG2   | 2.11                     | 0.49              |
| 33:DA:380:G:N3   | 33:DA:384:G:N2     | 2.60                     | 0.49              |
| 33:DA:381:C:O2   | 33:DA:381:C:C2'    | 2.60                     | 0.49              |
| 33:DA:393:A:N3   | 33:DA:393:A:H2'    | 2.26                     | 0.49              |
| 33:DA:522:C:C2   | 33:DA:523:A:C8     | 2.99                     | 0.49              |
| 33:DA:547:A:H1'  | 33:DA:548:G:O4'    | 2.12                     | 0.49              |
| 33:DA:668:G:C2'  | 33:DA:669:G:C5'    | 2.89                     | 0.49              |
| 33:DA:765:G:C8   | 33:DA:812:G:C2     | 2.99                     | 0.49              |
| 33:DA:799:G:C6   | 33:DA:800:G:C4     | 3.00                     | 0.49              |
| 33:DA:1166:G:N2  | 33:DA:1169:A:OP2   | 2.45                     | 0.49              |
| 33:DA:1266:G:C8  | 33:DA:1266:G:H3'   | 2.47                     | 0.49              |
| 33:DA:1316:G:H22 | 33:DA:1319:A:C1'   | 2.24                     | 0.49              |
| 33:DA:1413:A:H2' | 33:DA:1414:U:O4'   | 2.12                     | 0.49              |
| 33:DA:1420:U:H2' | 33:DA:1421:G:H8    | 1.77                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1480:A:C5   | 33:DA:1481:U:C4   | 2.99                     | 0.49              |
| 35:DC:146:LYS:HE2 | 35:DC:204:GLY:HA3 | 1.93                     | 0.49              |
| 39:DG:109:LYS:HE3 | 39:DG:109:LYS:C   | 2.32                     | 0.49              |
| 42:DJ:6:ILE:O     | 42:DJ:75:ASP:HA   | 2.12                     | 0.49              |
| 44:DL:73:LEU:CD2  | 44:DL:103:CYS:HB3 | 2.42                     | 0.49              |
| 49:DQ:30:HIS:CE1  | 49:DQ:32:ILE:CG2  | 2.93                     | 0.49              |
| 52:DT:58:ASP:O    | 52:DT:61:ALA:HB3  | 2.11                     | 0.49              |
| 53:DU:16:ARG:O    | 53:DU:19:LYS:HB2  | 2.11                     | 0.49              |
| 4:A3:36:ALA:HB1   | 4:A3:39:ARG:HB2   | 1.94                     | 0.49              |
| 5:A4:36:ARG:CZ    | 8:AB:2742:G:OP2   | 2.59                     | 0.49              |
| 8:AB:23:G:O2'     | 8:AB:24:G:H5'     | 2.12                     | 0.49              |
| 8:AB:143:C:O2'    | 26:AT:5:GLU:HB3   | 2.12                     | 0.49              |
| 8:AB:223:A:N6     | 8:AB:422:A:C6     | 2.81                     | 0.49              |
| 8:AB:238:C:O2     | 8:AB:238:C:H2'    | 2.11                     | 0.49              |
| 8:AB:272:A:H2     | 8:AB:366:C:C2     | 2.31                     | 0.49              |
| 8:AB:442:G:C2     | 8:AB:444:C:C5     | 3.00                     | 0.49              |
| 8:AB:531:C:C5     | 8:AB:2035:G:C2    | 3.00                     | 0.49              |
| 8:AB:546:U:H5'    | 8:AB:547:A:OP1    | 2.12                     | 0.49              |
| 8:AB:606:U:H2'    | 8:AB:607:U:O4'    | 2.12                     | 0.49              |
| 8:AB:822:G:C6     | 8:AB:836:G:C2     | 3.00                     | 0.49              |
| 8:AB:1036:G:C6    | 8:AB:1037:G:N7    | 2.80                     | 0.49              |
| 8:AB:1234:U:C2'   | 8:AB:1235:G:O5'   | 2.60                     | 0.49              |
| 8:AB:1344:U:H5'   | 8:AB:1345:C:H5    | 1.77                     | 0.49              |
| 8:AB:1383:A:C2    | 8:AB:1384:A:C5    | 3.00                     | 0.49              |
| 8:AB:1570:A:C6    | 8:AB:1571:A:C5    | 2.99                     | 0.49              |
| 8:AB:2026:U:H5''  | 8:AB:2027:G:OP2   | 2.11                     | 0.49              |
| 8:AB:2048:G:C6    | 8:AB:2621:G:N2    | 2.80                     | 0.49              |
| 8:AB:2346:A:C2    | 8:AB:2383:G:N1    | 2.81                     | 0.49              |
| 8:AB:2641:G:H8    | 8:AB:2641:G:C5'   | 2.25                     | 0.49              |
| 8:AB:2682:A:HO2'  | 8:AB:2683:C:P     | 2.34                     | 0.49              |
| 8:AB:2727:A:C6    | 8:AB:2728:U:C4    | 3.00                     | 0.49              |
| 8:AB:2807:U:O2    | 8:AB:2892:G:N2    | 2.45                     | 0.49              |
| 8:AB:2843:G:O2'   | 8:AB:2844:G:H5'   | 2.12                     | 0.49              |
| 8:AB:2857:G:N2    | 8:AB:2861:U:N3    | 2.60                     | 0.49              |
| 9:AC:131:MET:O    | 9:AC:132:ARG:C    | 2.50                     | 0.49              |
| 11:AE:48:THR:O    | 11:AE:49:ARG:HB2  | 2.11                     | 0.49              |
| 11:AE:49:ARG:HB2  | 11:AE:49:ARG:HH11 | 1.77                     | 0.49              |
| 12:AF:133:GLU:O   | 12:AF:134:GLN:O   | 2.30                     | 0.49              |
| 14:AH:82:SER:OG   | 14:AH:90:LEU:HD21 | 2.12                     | 0.49              |
| 16:AJ:4:PHE:CZ    | 16:AJ:6:ALA:HA    | 2.47                     | 0.49              |
| 16:AJ:106:LYS:O   | 16:AJ:106:LYS:HG3 | 2.12                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 19:AM:70:ASP:N    | 19:AM:71:LYS:HE3  | 2.27                     | 0.49              |
| 21:AO:49:VAL:HG22 | 21:AO:50:ALA:N    | 2.27                     | 0.49              |
| 25:AS:103:ILE:O   | 25:AS:104:THR:O   | 2.30                     | 0.49              |
| 29:AW:80:SER:OG   | 29:AW:84:GLU:HB2  | 2.11                     | 0.49              |
| 31:AY:18:LYS:O    | 31:AY:19:HIS:C    | 2.50                     | 0.49              |
| 31:AY:23:LEU:HD22 | 31:AY:28:LEU:O    | 2.12                     | 0.49              |
| 33:BA:56:U:O2     | 33:BA:368:U:C5    | 2.65                     | 0.49              |
| 33:BA:61:G:C2     | 33:BA:62:U:O2     | 2.65                     | 0.49              |
| 33:BA:71:A:H2'    | 33:BA:71:A:P      | 2.52                     | 0.49              |
| 33:BA:155:A:N1    | 33:BA:166:U:O4    | 2.45                     | 0.49              |
| 33:BA:158:G:C2    | 33:BA:159:G:C8    | 3.00                     | 0.49              |
| 33:BA:219:U:C2'   | 33:BA:220:G:H5'   | 2.40                     | 0.49              |
| 33:BA:396:C:C3'   | 33:BA:397:A:H5''  | 2.42                     | 0.49              |
| 33:BA:418:C:O5'   | 33:BA:418:C:H6    | 1.95                     | 0.49              |
| 33:BA:444:G:C6    | 33:BA:445:G:C6    | 2.99                     | 0.49              |
| 33:BA:489:C:C2    | 33:BA:490:C:C5    | 3.00                     | 0.49              |
| 33:BA:533:A:C5    | 33:BA:536:C:C5    | 3.00                     | 0.49              |
| 33:BA:675:A:C6    | 33:BA:676:A:C5    | 3.00                     | 0.49              |
| 33:BA:679:C:C3'   | 33:BA:680:C:H5''  | 2.42                     | 0.49              |
| 33:BA:816:A:OP2   | 33:BA:1527:U:H5'  | 2.12                     | 0.49              |
| 33:BA:860:A:H3'   | 33:BA:861:G:H8    | 1.77                     | 0.49              |
| 33:BA:907:A:H5''  | 33:BA:907:A:H8    | 1.75                     | 0.49              |
| 33:BA:917:G:C6    | 33:BA:918:A:C6    | 3.00                     | 0.49              |
| 33:BA:959:A:H2'   | 33:BA:960:U:C4'   | 2.42                     | 0.49              |
| 33:BA:1086:U:O4   | 33:BA:1100:C:N3   | 2.46                     | 0.49              |
| 33:BA:1143:G:C2   | 33:BA:1144:G:N7   | 2.81                     | 0.49              |
| 33:BA:1251:A:N1   | 33:BA:1354:U:H1'  | 2.27                     | 0.49              |
| 33:BA:1266:G:C8   | 33:BA:1266:G:H3'  | 2.47                     | 0.49              |
| 33:BA:1368:A:H4'  | 46:BN:100:TRP:CZ2 | 2.46                     | 0.49              |
| 33:BA:1399:C:N3   | 33:BA:1401:G:C2   | 2.81                     | 0.49              |
| 33:BA:1483:A:N7   | 33:BA:1484:C:C6   | 2.80                     | 0.49              |
| 36:BD:70:GLN:O    | 36:BD:71:PHE:C    | 2.51                     | 0.49              |
| 39:BG:72:VAL:HG21 | 39:BG:145:GLU:HB2 | 1.93                     | 0.49              |
| 43:BK:126:ARG:C   | 53:BU:33:ARG:HH21 | 2.15                     | 0.49              |
| 4:C3:11:LYS:HD2   | 18:CL:62:PRO:C    | 2.33                     | 0.49              |
| 7:CA:84:G:C6      | 7:CA:85:G:N7      | 2.80                     | 0.49              |
| 8:CB:45:G:N2      | 8:CB:434:U:H3     | 2.08                     | 0.49              |
| 8:CB:56:A:C2      | 8:CB:115:C:O2     | 2.64                     | 0.49              |
| 8:CB:149:A:C2     | 8:CB:150:U:C2     | 2.99                     | 0.49              |
| 8:CB:208:C:H2'    | 8:CB:209:C:C6     | 2.46                     | 0.49              |
| 8:CB:257:C:H3'    | 8:CB:258:G:C8     | 2.45                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:290:U:H2'    | 8:CB:291:G:H8     | 1.77                     | 0.49              |
| 8:CB:371:A:C8     | 8:CB:373:U:N3     | 2.80                     | 0.49              |
| 8:CB:523:C:H3'    | 8:CB:523:C:H6     | 1.77                     | 0.49              |
| 8:CB:708:G:N2     | 8:CB:724:U:H1'    | 2.27                     | 0.49              |
| 8:CB:771:G:N2     | 8:CB:772:C:C2     | 2.80                     | 0.49              |
| 8:CB:795:C:HO2'   | 8:CB:796:C:P      | 2.35                     | 0.49              |
| 8:CB:1054:A:H1'   | 8:CB:1106:G:H21   | 1.78                     | 0.49              |
| 8:CB:1165:A:H8    | 8:CB:1165:A:O5'   | 1.95                     | 0.49              |
| 8:CB:1225:G:OP1   | 24:CR:90:ARG:NE   | 2.45                     | 0.49              |
| 8:CB:1283:G:C8    | 8:CB:1283:G:C3'   | 2.95                     | 0.49              |
| 8:CB:1296:G:C2    | 8:CB:1297:C:C5    | 3.00                     | 0.49              |
| 8:CB:1321:A:H5''  | 8:CB:1321:A:H8    | 1.77                     | 0.49              |
| 8:CB:1343:G:C2    | 8:CB:1384:A:H2    | 2.30                     | 0.49              |
| 8:CB:1487:U:H3'   | 8:CB:1487:U:C6    | 2.46                     | 0.49              |
| 8:CB:1590:A:C6    | 8:CB:1591:A:N6    | 2.80                     | 0.49              |
| 8:CB:2069:G:C6    | 8:CB:2070:A:N7    | 2.80                     | 0.49              |
| 8:CB:2088:A:C5    | 8:CB:2089:C:C5    | 3.00                     | 0.49              |
| 8:CB:2305:U:H5''  | 12:CF:130:GLY:CA  | 2.18                     | 0.49              |
| 8:CB:2413:G:N2    | 8:CB:2414:G:H1'   | 2.27                     | 0.49              |
| 8:CB:2466:C:H1'   | 19:CM:118:LYS:HZ2 | 1.77                     | 0.49              |
| 8:CB:2478:A:H5''  | 8:CB:2478:A:C8    | 2.38                     | 0.49              |
| 8:CB:2748:A:C4    | 8:CB:2757:A:C6    | 3.00                     | 0.49              |
| 9:CC:13:ARG:HG3   | 9:CC:15:VAL:HG23  | 1.95                     | 0.49              |
| 9:CC:17:LYS:HE2   | 9:CC:17:LYS:H     | 1.73                     | 0.49              |
| 9:CC:137:GLY:HA3  | 9:CC:163:ILE:HG13 | 1.94                     | 0.49              |
| 11:CE:127:GLU:HA  | 11:CE:157:LEU:CD2 | 2.33                     | 0.49              |
| 14:CH:4:ILE:HG22  | 14:CH:18:GLN:HB3  | 1.93                     | 0.49              |
| 14:CH:25:TYR:OH   | 32:CZ:56:ARG:HD2  | 2.13                     | 0.49              |
| 16:CJ:73:VAL:CG2  | 16:CJ:74:TYR:N    | 2.75                     | 0.49              |
| 19:CM:40:ARG:HA   | 19:CM:92:TRP:CD1  | 2.47                     | 0.49              |
| 19:CM:43:ALA:O    | 19:CM:45:GLN:N    | 2.45                     | 0.49              |
| 20:CN:63:ARG:HA   | 20:CN:80:PHE:HZ   | 1.76                     | 0.49              |
| 21:CO:2:ASP:CB    | 21:CO:4:LYS:HZ3   | 2.25                     | 0.49              |
| 22:CP:52:ARG:HG3  | 22:CP:54:LEU:HB2  | 1.94                     | 0.49              |
| 24:CR:10:LYS:CD   | 24:CR:11:GLN:N    | 2.71                     | 0.49              |
| 24:CR:63:VAL:HG22 | 24:CR:64:VAL:H    | 1.77                     | 0.49              |
| 25:CS:28:LYS:C    | 25:CS:30:SER:N    | 2.66                     | 0.49              |
| 27:CU:84:PHE:H    | 27:CU:92:VAL:HB   | 1.76                     | 0.49              |
| 29:CW:36:ILE:HG21 | 29:CW:69:GLU:OE2  | 2.11                     | 0.49              |
| 30:CX:22:LEU:HA   | 30:CX:25:GLN:NE2  | 2.27                     | 0.49              |
| 33:DA:122:G:H5''  | 33:DA:122:G:C8    | 2.45                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:196:A:O2'   | 33:DA:221:C:O2'   | 2.28                     | 0.49              |
| 33:DA:387:U:H6    | 33:DA:387:U:C5'   | 2.21                     | 0.49              |
| 33:DA:520:A:N7    | 33:DA:521:G:C5    | 2.80                     | 0.49              |
| 33:DA:533:A:N6    | 33:DA:536:C:C2    | 2.81                     | 0.49              |
| 33:DA:728:A:C2'   | 33:DA:729:A:C8    | 2.92                     | 0.49              |
| 33:DA:855:U:N3    | 33:DA:856:C:N3    | 2.60                     | 0.49              |
| 33:DA:878:A:OP1   | 40:DH:80:PRO:O    | 2.31                     | 0.49              |
| 33:DA:1138:G:N3   | 33:DA:1138:G:H3'  | 2.27                     | 0.49              |
| 33:DA:1225:A:C4   | 33:DA:1226:C:C5   | 3.00                     | 0.49              |
| 33:DA:1232:U:O5'  | 33:DA:1232:U:H6   | 1.95                     | 0.49              |
| 33:DA:1258:G:H2'  | 33:DA:1259:C:H6   | 1.76                     | 0.49              |
| 34:DB:171:ALA:HA  | 34:DB:174:GLU:HB3 | 1.93                     | 0.49              |
| 36:DD:26:ALA:O    | 36:DD:27:ILE:HD12 | 2.12                     | 0.49              |
| 37:DE:144:GLU:CD  | 37:DE:145:ASN:N   | 2.65                     | 0.49              |
| 41:DI:113:LYS:CA  | 41:DI:120:ALA:HA  | 2.25                     | 0.49              |
| 42:DJ:32:THR:HG23 | 42:DJ:33:GLY:H    | 1.76                     | 0.49              |
| 44:DL:80:LEU:HB3  | 44:DL:97:VAL:CG1  | 2.43                     | 0.49              |
| 44:DL:84:GLY:O    | 44:DL:95:HIS:CE1  | 2.65                     | 0.49              |
| 46:DN:62:ARG:HG2  | 46:DN:69:PRO:CD   | 2.41                     | 0.49              |
| 48:DP:17:TYR:N    | 48:DP:17:TYR:CD1  | 2.80                     | 0.49              |
| 4:A3:53:ASP:O     | 4:A3:56:LEU:HB3   | 2.13                     | 0.49              |
| 7:AA:23:G:N2      | 7:AA:24:G:H1      | 2.09                     | 0.49              |
| 8:AB:222:A:C8     | 8:AB:224:U:C6     | 3.01                     | 0.49              |
| 8:AB:224:U:C4     | 8:AB:225:C:C5     | 3.00                     | 0.49              |
| 8:AB:273:G:N2     | 8:AB:365:U:C2     | 2.80                     | 0.49              |
| 8:AB:783:A:H4'    | 8:AB:1779:U:O2    | 2.12                     | 0.49              |
| 8:AB:820:A:O2'    | 8:AB:821:A:H5'    | 2.12                     | 0.49              |
| 8:AB:1006:C:O2'   | 16:AJ:108:MET:O   | 2.19                     | 0.49              |
| 8:AB:1006:C:H1'   | 16:AJ:108:MET:SD  | 2.52                     | 0.49              |
| 8:AB:1296:G:C2    | 8:AB:1297:C:C6    | 3.00                     | 0.49              |
| 8:AB:1343:G:N3    | 8:AB:1384:A:H2    | 2.10                     | 0.49              |
| 8:AB:1348:C:H5''  | 8:AB:1348:C:C6    | 2.47                     | 0.49              |
| 8:AB:1664:A:O2'   | 8:AB:1665:A:H5'   | 2.12                     | 0.49              |
| 8:AB:1771:C:H42   | 8:AB:1772:A:N6    | 2.09                     | 0.49              |
| 8:AB:2255:G:C2'   | 8:AB:2256:G:H8    | 2.17                     | 0.49              |
| 8:AB:2330:G:N3    | 29:AW:36:ILE:CD1  | 2.75                     | 0.49              |
| 8:AB:2341:G:C5    | 8:AB:2342:C:C4    | 3.00                     | 0.49              |
| 8:AB:2361:G:H2'   | 8:AB:2362:C:H5'   | 1.94                     | 0.49              |
| 8:AB:2560:A:C6    | 8:AB:2561:U:C4    | 3.00                     | 0.49              |
| 8:AB:2593:U:C5    | 8:AB:2594:C:H5    | 2.30                     | 0.49              |
| 8:AB:2603:G:C6    | 8:AB:2604:U:C4    | 3.00                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AC:13:ARG:HG3    | 9:AC:15:VAL:HG23  | 1.93                     | 0.49              |
| 9:AC:35:LYS:NZ     | 9:AC:101:ARG:HA   | 2.27                     | 0.49              |
| 10:AD:109:VAL:HG21 | 10:AD:193:VAL:HB  | 1.93                     | 0.49              |
| 10:AD:187:LEU:HD23 | 10:AD:188:LEU:N   | 2.27                     | 0.49              |
| 17:AK:2:ILE:HG21   | 17:AK:67:LYS:CD   | 2.41                     | 0.49              |
| 17:AK:39:ILE:HG23  | 17:AK:40:LYS:N    | 2.28                     | 0.49              |
| 17:AK:66:LYS:CG    | 17:AK:80:ASP:HA   | 2.43                     | 0.49              |
| 17:AK:80:ASP:HB2   | 22:AP:70:GLU:OE2  | 2.12                     | 0.49              |
| 17:AK:112:PHE:O    | 17:AK:114:LYS:N   | 2.44                     | 0.49              |
| 18:AL:90:VAL:HG11  | 18:AL:120:VAL:CA  | 2.42                     | 0.49              |
| 19:AM:7:THR:HG21   | 19:AM:10:ARG:CZ   | 2.43                     | 0.49              |
| 21:AO:80:GLU:O     | 21:AO:81:ARG:C    | 2.51                     | 0.49              |
| 23:AQ:39:ILE:HG21  | 24:AR:80:ARG:NH1  | 2.26                     | 0.49              |
| 24:AR:5:PHE:HD1    | 24:AR:40:MET:HB3  | 1.75                     | 0.49              |
| 25:AS:9:HIS:C      | 25:AS:11:ARG:H    | 2.15                     | 0.49              |
| 25:AS:9:HIS:H      | 25:AS:102:HIS:CD2 | 2.30                     | 0.49              |
| 25:AS:21:ALA:O     | 25:AS:74:ILE:CD1  | 2.58                     | 0.49              |
| 26:AT:59:ASN:C     | 26:AT:60:THR:HG23 | 2.32                     | 0.49              |
| 32:AZ:21:VAL:CG1   | 32:AZ:23:LYS:CG   | 2.89                     | 0.49              |
| 33:BA:36:C:C4      | 33:BA:37:U:C5     | 3.00                     | 0.49              |
| 33:BA:42:G:N1      | 33:BA:400:C:N4    | 2.61                     | 0.49              |
| 33:BA:338:A:C5     | 33:BA:339:C:C5    | 3.00                     | 0.49              |
| 33:BA:362:G:C8     | 33:BA:362:G:C3'   | 2.95                     | 0.49              |
| 33:BA:456:A:H2'    | 33:BA:457:G:O4'   | 2.12                     | 0.49              |
| 33:BA:516:U:H2'    | 33:BA:517:G:O4'   | 2.12                     | 0.49              |
| 33:BA:618:C:H1'    | 48:BP:14:ARG:CZ   | 2.42                     | 0.49              |
| 33:BA:643:C:H5'    | 40:BH:31:LEU:HD13 | 1.94                     | 0.49              |
| 33:BA:668:G:C2'    | 47:BO:45:HIS:HD2  | 2.25                     | 0.49              |
| 33:BA:707:U:OP1    | 43:BK:86:LYS:HE2  | 2.12                     | 0.49              |
| 33:BA:918:A:N1     | 33:BA:919:A:C4    | 2.80                     | 0.49              |
| 33:BA:1006:G:N2    | 33:BA:1007:U:H1'  | 2.27                     | 0.49              |
| 33:BA:1022:A:H5''  | 33:BA:1022:A:C8   | 2.47                     | 0.49              |
| 33:BA:1075:U:H5'   | 33:BA:1075:U:C6   | 2.48                     | 0.49              |
| 33:BA:1415:G:C8    | 33:BA:1486:G:N2   | 2.80                     | 0.49              |
| 33:BA:1467:C:H6    | 33:BA:1467:C:O5'  | 1.94                     | 0.49              |
| 34:BB:21:TYR:O     | 34:BB:22:TRP:O    | 2.29                     | 0.49              |
| 34:BB:163:ILE:HD12 | 34:BB:185:ILE:CD1 | 2.38                     | 0.49              |
| 36:BD:58:GLN:HB2   | 36:BD:62:ARG:HG2  | 1.93                     | 0.49              |
| 40:BH:86:LYS:O     | 40:BH:121:GLY:HA3 | 2.12                     | 0.49              |
| 42:BJ:50:THR:HA    | 42:BJ:63:ASP:O    | 2.13                     | 0.49              |
| 4:C3:14:LYS:HB2    | 4:C3:22:LYS:HE2   | 1.94                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:C4:8:LYS:HB2    | 5:C4:9:LYS:HD3     | 1.93                     | 0.49              |
| 7:CA:84:G:C2      | 7:CA:85:G:C8       | 3.00                     | 0.49              |
| 8:CB:79:C:N3      | 8:CB:107:G:N2      | 2.54                     | 0.49              |
| 8:CB:227:A:N3     | 8:CB:2407:A:H1'    | 2.27                     | 0.49              |
| 8:CB:301:G:H1'    | 8:CB:302:C:O4'     | 2.12                     | 0.49              |
| 8:CB:382:A:C2     | 8:CB:383:C:N1      | 2.80                     | 0.49              |
| 8:CB:565:C:C4'    | 8:CB:1253:A:N1     | 2.75                     | 0.49              |
| 8:CB:777:G:H5''   | 8:CB:777:G:C8      | 2.40                     | 0.49              |
| 8:CB:786:C:H3'    | 8:CB:786:C:C6      | 2.48                     | 0.49              |
| 8:CB:1263:U:C4    | 8:CB:1264:A:C6     | 3.00                     | 0.49              |
| 8:CB:1434:A:C2'   | 8:CB:1435:G:O5'    | 2.60                     | 0.49              |
| 8:CB:1519:G:H5'   | 8:CB:1520:U:OP2    | 2.12                     | 0.49              |
| 8:CB:1581:G:C6    | 8:CB:1582:C:C5     | 3.00                     | 0.49              |
| 8:CB:1642:G:C6    | 8:CB:1643:G:N7     | 2.80                     | 0.49              |
| 8:CB:1740:G:C2    | 8:CB:1741:C:C2     | 3.00                     | 0.49              |
| 8:CB:1909:C:H2'   | 8:CB:1910:G:O4'    | 2.12                     | 0.49              |
| 8:CB:1912:A:O2'   | 33:DA:1494:G:N3    | 2.44                     | 0.49              |
| 8:CB:1944:U:O5'   | 8:CB:1944:U:H2'    | 2.11                     | 0.49              |
| 8:CB:2090:A:N6    | 8:CB:2091:C:N4     | 2.60                     | 0.49              |
| 8:CB:2413:G:H2'   | 8:CB:2414:G:O4'    | 2.12                     | 0.49              |
| 8:CB:2461:A:H2'   | 8:CB:2462:C:H6     | 1.78                     | 0.49              |
| 8:CB:2466:C:H6    | 8:CB:2466:C:O5'    | 1.95                     | 0.49              |
| 8:CB:2500:U:O2    | 8:CB:2504:U:C4     | 2.65                     | 0.49              |
| 10:CD:68:PHE:O    | 10:CD:90:PHE:CB    | 2.57                     | 0.49              |
| 13:CG:30:GLY:H    | 13:CG:78:VAL:CG2   | 2.09                     | 0.49              |
| 13:CG:148:ARG:NH2 | 13:CG:153:PRO:HD2  | 2.28                     | 0.49              |
| 15:CI:89:SER:HA   | 15:CI:97:VAL:HG22  | 1.93                     | 0.49              |
| 18:CL:26:GLY:O    | 18:CL:27:LEU:C     | 2.50                     | 0.49              |
| 18:CL:92:LEU:O    | 18:CL:93:ASN:C     | 2.50                     | 0.49              |
| 18:CL:110:VAL:HB  | 18:CL:126:ARG:HH12 | 1.77                     | 0.49              |
| 22:CP:97:TYR:O    | 22:CP:98:TYR:HB2   | 2.13                     | 0.49              |
| 23:CQ:36:GLN:O    | 23:CQ:39:ILE:HG22  | 2.12                     | 0.49              |
| 24:CR:76:LYS:O    | 24:CR:77:PHE:HB2   | 2.12                     | 0.49              |
| 24:CR:84:ARG:HB2  | 24:CR:84:ARG:CZ    | 2.42                     | 0.49              |
| 25:CS:30:SER:C    | 25:CS:32:ALA:N     | 2.65                     | 0.49              |
| 25:CS:86:MET:HG2  | 25:CS:87:PRO:CD    | 2.43                     | 0.49              |
| 32:CZ:23:LYS:HG2  | 32:CZ:24:ILE:N     | 2.25                     | 0.49              |
| 33:DA:132:C:C5'   | 52:DT:68:LYS:HZ3   | 2.25                     | 0.49              |
| 33:DA:575:G:C6    | 33:DA:821:G:C8     | 3.00                     | 0.49              |
| 33:DA:943:U:H2'   | 33:DA:944:G:C4'    | 2.42                     | 0.49              |
| 33:DA:985:C:H2'   | 33:DA:986:U:C5     | 2.47                     | 0.49              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:DA:1046:A:H2' | 33:DA:1047:G:H5'  | 1.95                     | 0.49              |
| 33:DA:1179:A:C6  | 33:DA:1180:A:C2   | 3.00                     | 0.49              |
| 33:DA:1278:G:N3  | 33:DA:1278:G:O4'  | 2.45                     | 0.49              |
| 33:DA:1423:G:H2' | 33:DA:1424:U:C5   | 2.48                     | 0.49              |
| 33:DA:1423:G:N3  | 33:DA:1424:U:C5   | 2.80                     | 0.49              |
| 33:DA:1480:A:C2  | 33:DA:1481:U:C2   | 3.01                     | 0.49              |
| 34:DB:21:TYR:O   | 34:DB:22:TRP:CD1  | 2.65                     | 0.49              |
| 41:DI:49:GLN:O   | 41:DI:52:GLU:HB2  | 2.13                     | 0.49              |
| 42:DJ:88:MET:O   | 42:DJ:89:ARG:HG3  | 2.12                     | 0.49              |
| 44:DL:122:LYS:H  | 44:DL:122:LYS:HZ2 | 1.60                     | 0.49              |
| 48:DP:80:LYS:HB2 | 48:DP:80:LYS:HZ3  | 1.76                     | 0.49              |
| 2:A1:24:LYS:CE   | 8:AB:2285:C:H41   | 2.26                     | 0.49              |
| 3:A2:9:VAL:C     | 3:A2:11:LYS:H     | 2.14                     | 0.49              |
| 3:A2:13:ASN:HA   | 3:A2:18:PHE:CE1   | 2.48                     | 0.49              |
| 3:A2:19:ARG:NH2  | 8:AB:124:G:C5     | 2.80                     | 0.49              |
| 4:A3:1:PRO:HD3   | 8:AB:591:U:H1'    | 1.95                     | 0.49              |
| 4:A3:24:LYS:HE3  | 18:AL:64:PHE:CD1  | 2.47                     | 0.49              |
| 4:A3:58:ILE:CG1  | 4:A3:59:ALA:H     | 2.13                     | 0.49              |
| 8:AB:45:G:N2     | 8:AB:434:U:H3     | 2.10                     | 0.49              |
| 8:AB:101:A:H2'   | 8:AB:102:U:OP2    | 2.12                     | 0.49              |
| 8:AB:162:U:C5    | 8:AB:165:A:N1     | 2.80                     | 0.49              |
| 8:AB:300:A:C5'   | 8:AB:300:A:H8     | 2.25                     | 0.49              |
| 8:AB:479:A:H4'   | 8:AB:480:A:H5'    | 1.93                     | 0.49              |
| 8:AB:795:C:H2'   | 8:AB:796:C:O5'    | 2.13                     | 0.49              |
| 8:AB:820:A:H1'   | 8:AB:943:A:O2'    | 2.12                     | 0.49              |
| 8:AB:909:A:N6    | 8:AB:912:C:O2     | 2.44                     | 0.49              |
| 8:AB:1153:C:N4   | 8:AB:1154:G:C6    | 2.80                     | 0.49              |
| 8:AB:1217:U:O2   | 8:AB:1217:U:H2'   | 2.11                     | 0.49              |
| 8:AB:1687:G:H2'  | 8:AB:1688:U:H6    | 1.77                     | 0.49              |
| 8:AB:1814:G:C8   | 8:AB:1814:G:C5'   | 2.94                     | 0.49              |
| 8:AB:2020:A:C5   | 8:AB:2022:U:C5    | 3.00                     | 0.49              |
| 8:AB:2080:A:O3'  | 32:AZ:21:VAL:HG21 | 2.12                     | 0.49              |
| 8:AB:2498:C:O2   | 8:AB:2498:C:C2'   | 2.59                     | 0.49              |
| 8:AB:2553:G:C2   | 8:AB:2583:G:H1'   | 2.47                     | 0.49              |
| 8:AB:2599:G:N7   | 9:AC:234:GLY:HA2  | 2.26                     | 0.49              |
| 8:AB:2631:G:C6   | 8:AB:2632:A:C8    | 3.00                     | 0.49              |
| 8:AB:2633:G:C1'  | 10:AD:62:LYS:CG   | 2.82                     | 0.49              |
| 8:AB:2657:A:C2'  | 8:AB:2658:C:H5'   | 2.43                     | 0.49              |
| 8:AB:2682:A:N1   | 8:AB:2683:C:N3    | 2.60                     | 0.49              |
| 8:AB:2708:G:C4   | 8:AB:2709:G:C8    | 3.00                     | 0.49              |
| 8:AB:2727:A:O2'  | 17:AK:70:ARG:NH2  | 2.46                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2848:G:H2'   | 22:AP:96:LEU:CB   | 2.36                     | 0.49              |
| 11:AE:37:ALA:HA   | 11:AE:40:ARG:NE   | 2.27                     | 0.49              |
| 11:AE:84:THR:CG2  | 11:AE:85:PHE:H    | 2.23                     | 0.49              |
| 13:AG:27:GLY:O    | 13:AG:28:LYS:C    | 2.50                     | 0.49              |
| 14:AH:73:ASN:ND2  | 14:AH:73:ASN:N    | 2.60                     | 0.49              |
| 16:AJ:109:LEU:O   | 16:AJ:111:LYS:HG3 | 2.13                     | 0.49              |
| 16:AJ:116:ARG:C   | 16:AJ:118:MET:H   | 2.16                     | 0.49              |
| 19:AM:36:VAL:HG12 | 19:AM:125:PRO:HD3 | 1.94                     | 0.49              |
| 19:AM:42:THR:O    | 19:AM:44:ARG:N    | 2.46                     | 0.49              |
| 19:AM:56:ALA:O    | 19:AM:58:LYS:N    | 2.45                     | 0.49              |
| 19:AM:97:GLN:N    | 19:AM:98:PRO:CD   | 2.73                     | 0.49              |
| 21:AO:88:LYS:O    | 21:AO:90:VAL:HG23 | 2.11                     | 0.49              |
| 22:AP:61:ARG:O    | 22:AP:74:GLN:OE1  | 2.30                     | 0.49              |
| 23:AQ:12:ARG:CG   | 23:AQ:12:ARG:NH1  | 2.66                     | 0.49              |
| 23:AQ:83:LYS:HG3  | 23:AQ:91:ARG:HH12 | 1.78                     | 0.49              |
| 24:AR:40:MET:HA   | 24:AR:40:MET:HE2  | 1.93                     | 0.49              |
| 24:AR:72:VAL:O    | 24:AR:73:LYS:CB   | 2.59                     | 0.49              |
| 27:AU:38:ILE:HB   | 27:AU:62:ALA:HB2  | 1.94                     | 0.49              |
| 29:AW:16:GLU:C    | 29:AW:18:LYS:H    | 2.15                     | 0.49              |
| 29:AW:35:ILE:CG1  | 29:AW:70:VAL:HB   | 2.42                     | 0.49              |
| 29:AW:50:VAL:HG22 | 29:AW:51:GLY:N    | 2.20                     | 0.49              |
| 33:BA:141:G:C2    | 33:BA:223:A:C2    | 3.00                     | 0.49              |
| 33:BA:174:A:H2'   | 33:BA:175:C:H5'   | 1.95                     | 0.49              |
| 33:BA:203:G:H1'   | 33:BA:465:A:H61   | 1.77                     | 0.49              |
| 33:BA:239:U:H2'   | 33:BA:239:U:O2    | 2.12                     | 0.49              |
| 33:BA:275:G:C6    | 33:BA:276:G:C5    | 3.00                     | 0.49              |
| 33:BA:331:G:H5'   | 55:BA:5075:HOH:O  | 2.12                     | 0.49              |
| 33:BA:402:G:O2'   | 33:BA:403:C:H5'   | 2.13                     | 0.49              |
| 33:BA:411:A:N7    | 33:BA:413:G:C2    | 2.80                     | 0.49              |
| 33:BA:447:G:H3'   | 33:BA:447:G:C8    | 2.47                     | 0.49              |
| 33:BA:796:C:OP1   | 43:BK:127:ARG:HB3 | 2.12                     | 0.49              |
| 33:BA:821:G:C5    | 33:BA:822:U:C5    | 3.00                     | 0.49              |
| 33:BA:1218:C:H2'  | 33:BA:1219:A:H8   | 1.75                     | 0.49              |
| 33:BA:1249:C:O2'  | 41:BI:69:GLY:O    | 2.29                     | 0.49              |
| 33:BA:1256:A:N6   | 33:BA:1278:G:C8   | 2.80                     | 0.49              |
| 33:BA:1323:G:C2'  | 33:BA:1324:A:C8   | 2.92                     | 0.49              |
| 33:BA:1460:C:O2   | 33:BA:1460:C:H2'  | 2.12                     | 0.49              |
| 35:BC:33:ASP:HB2  | 46:BN:64:ARG:HD3  | 1.94                     | 0.49              |
| 35:BC:135:ARG:C   | 35:BC:137:VAL:H   | 2.15                     | 0.49              |
| 37:BE:87:VAL:CG1  | 37:BE:92:ARG:HG2  | 2.33                     | 0.49              |
| 45:BM:13:HIS:HB2  | 45:BM:16:ILE:CB   | 2.42                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 47:BO:72:LYS:O     | 47:BO:73:ASP:CB   | 2.61                     | 0.49              |
| 49:BQ:44:HIS:ND1   | 49:BQ:69:THR:HG22 | 2.26                     | 0.49              |
| 1:C0:24:VAL:HB     | 1:C0:26:SER:CB    | 2.41                     | 0.49              |
| 4:C3:51:LYS:O      | 4:C3:53:ASP:N     | 2.45                     | 0.49              |
| 8:CB:105:C:H2'     | 8:CB:106:C:O5'    | 2.12                     | 0.49              |
| 8:CB:120:U:H4'     | 8:CB:121:G:H5'    | 1.93                     | 0.49              |
| 8:CB:217:A:C2      | 8:CB:218:A:H1'    | 2.47                     | 0.49              |
| 8:CB:284:U:H5'     | 8:CB:285:G:OP2    | 2.13                     | 0.49              |
| 8:CB:375:G:H2'     | 8:CB:376:G:O4'    | 2.13                     | 0.49              |
| 8:CB:396:G:N2      | 8:CB:397:U:H1'    | 2.26                     | 0.49              |
| 8:CB:460:A:C2      | 8:CB:470:A:C2     | 3.01                     | 0.49              |
| 8:CB:666:A:N3      | 8:CB:667:U:C5     | 2.81                     | 0.49              |
| 8:CB:688:U:C2'     | 8:CB:689:A:H5''   | 2.40                     | 0.49              |
| 8:CB:1096:A:H8     | 8:CB:1096:A:O5'   | 1.95                     | 0.49              |
| 8:CB:1199:U:N3     | 8:CB:1247:A:H2    | 2.10                     | 0.49              |
| 8:CB:1278:C:OP1    | 20:CN:36:THR:HG22 | 2.12                     | 0.49              |
| 8:CB:1296:G:C2     | 8:CB:1297:C:C6    | 3.01                     | 0.49              |
| 8:CB:1353:A:C6     | 8:CB:1354:A:N6    | 2.80                     | 0.49              |
| 8:CB:1708:C:O2'    | 8:CB:1709:U:H5'   | 2.13                     | 0.49              |
| 8:CB:1782:U:O5'    | 8:CB:1782:U:H6    | 1.94                     | 0.49              |
| 8:CB:1831:G:C4     | 8:CB:1975:G:N2    | 2.81                     | 0.49              |
| 8:CB:1838:C:C6     | 8:CB:1898:U:C5    | 3.00                     | 0.49              |
| 8:CB:1866:A:H5'    | 8:CB:1867:G:OP2   | 2.13                     | 0.49              |
| 8:CB:2186:G:C5     | 8:CB:2187:U:C2    | 3.01                     | 0.49              |
| 8:CB:2195:U:C2     | 8:CB:2196:C:C5    | 3.00                     | 0.49              |
| 8:CB:2246:G:H8     | 8:CB:2246:G:O5'   | 1.95                     | 0.49              |
| 8:CB:2511:U:C2'    | 8:CB:2512:C:H5'   | 2.42                     | 0.49              |
| 8:CB:2604:U:O2     | 8:CB:2605:U:C6    | 2.65                     | 0.49              |
| 8:CB:2694:G:H8     | 8:CB:2694:G:C5'   | 2.26                     | 0.49              |
| 8:CB:2740:A:H2'    | 8:CB:2741:A:C8    | 2.47                     | 0.49              |
| 9:CC:21:PRO:C      | 9:CC:202:ARG:CZ   | 2.81                     | 0.49              |
| 9:CC:155:ARG:O     | 9:CC:159:THR:HG23 | 2.13                     | 0.49              |
| 10:CD:14:ILE:HG21  | 22:CP:78:PRO:HB2  | 1.94                     | 0.49              |
| 10:CD:67:HIS:O     | 10:CD:68:PHE:HD1  | 1.94                     | 0.49              |
| 10:CD:157:LYS:HE3  | 16:CJ:80:HIS:CB   | 2.42                     | 0.49              |
| 11:CE:4:VAL:HG23   | 11:CE:14:VAL:CG1  | 2.42                     | 0.49              |
| 11:CE:181:ILE:HG23 | 18:CL:13:LYS:HB3  | 1.94                     | 0.49              |
| 13:CG:121:THR:CG2  | 13:CG:122:ALA:N   | 2.75                     | 0.49              |
| 14:CH:5:LEU:HG     | 14:CH:13:GLY:HA3  | 1.95                     | 0.49              |
| 14:CH:103:VAL:HA   | 14:CH:106:ALA:HB3 | 1.94                     | 0.49              |
| 15:CI:73:PRO:O     | 15:CI:112:LYS:HD3 | 2.12                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:CJ:87:ALA:O    | 16:CJ:88:THR:HG23 | 2.12                     | 0.49              |
| 18:CL:40:SER:O    | 18:CL:41:ARG:HG2  | 2.11                     | 0.49              |
| 19:CM:79:ALA:O    | 19:CM:80:VAL:O    | 2.30                     | 0.49              |
| 20:CN:37:THR:OG1  | 20:CN:40:LYS:HD2  | 2.13                     | 0.49              |
| 21:CO:25:ARG:NH2  | 21:CO:40:ILE:HD12 | 2.26                     | 0.49              |
| 23:CQ:30:VAL:HG21 | 23:CQ:33:VAL:HG23 | 1.93                     | 0.49              |
| 28:CV:70:ILE:CG1  | 28:CV:71:LYS:N    | 2.75                     | 0.49              |
| 28:CV:75:GLN:OE1  | 28:CV:75:GLN:HA   | 2.13                     | 0.49              |
| 32:CZ:49:ARG:CG   | 32:CZ:50:ASP:N    | 2.74                     | 0.49              |
| 33:DA:104:G:N2    | 33:DA:105:G:C4    | 2.80                     | 0.49              |
| 33:DA:136:C:C2'   | 33:DA:137:U:H5'   | 2.42                     | 0.49              |
| 33:DA:224:U:H6    | 33:DA:224:U:H3'   | 1.78                     | 0.49              |
| 33:DA:233:C:H3'   | 33:DA:233:C:C6    | 2.48                     | 0.49              |
| 33:DA:466:A:O2'   | 33:DA:467:U:N3    | 2.34                     | 0.49              |
| 33:DA:524:G:C5    | 33:DA:525:C:N4    | 2.80                     | 0.49              |
| 33:DA:878:A:H2'   | 33:DA:879:C:O4'   | 2.11                     | 0.49              |
| 33:DA:901:A:C2'   | 33:DA:902:G:O5'   | 2.60                     | 0.49              |
| 33:DA:933:G:C2    | 33:DA:935:A:C8    | 3.01                     | 0.49              |
| 33:DA:1186:G:H5'  | 33:DA:1186:G:C8   | 2.39                     | 0.49              |
| 33:DA:1340:A:H2'  | 33:DA:1341:U:H5'  | 1.95                     | 0.49              |
| 33:DA:1350:A:H2'  | 33:DA:1351:U:C5   | 2.47                     | 0.49              |
| 33:DA:1425:U:C6   | 33:DA:1426:G:OP2  | 2.65                     | 0.49              |
| 33:DA:1433:A:C8   | 33:DA:1433:A:C3'  | 2.95                     | 0.49              |
| 35:DC:128:MET:SD  | 35:DC:128:MET:N   | 2.84                     | 0.49              |
| 36:DD:18:LEU:C    | 36:DD:20:LEU:N    | 2.64                     | 0.49              |
| 37:DE:33:THR:HG23 | 37:DE:51:LYS:HB2  | 1.95                     | 0.49              |
| 38:DF:2:ARG:CD    | 38:DF:91:ARG:HD2  | 2.34                     | 0.49              |
| 38:DF:74:LEU:HD21 | 38:DF:78:PHE:HE1  | 1.77                     | 0.49              |
| 39:DG:64:ALA:HB2  | 39:DG:126:ALA:HB1 | 1.92                     | 0.49              |
| 40:DH:36:ALA:HA   | 40:DH:39:LEU:CD2  | 2.42                     | 0.49              |
| 42:DJ:40:ILE:CG1  | 42:DJ:73:LEU:HB3  | 2.43                     | 0.49              |
| 46:DN:50:LEU:HG   | 46:DN:51:PRO:HD3  | 1.94                     | 0.49              |
| 50:DR:55:ALA:HA   | 50:DR:58:ILE:HG13 | 1.94                     | 0.49              |
| 52:DT:42:ASP:HB3  | 52:DT:45:ALA:HB3  | 1.93                     | 0.49              |
| 53:DU:34:ARG:HG2  | 53:DU:35:GLU:H    | 1.77                     | 0.49              |
| 7:AA:13:G:H3'     | 7:AA:13:G:H8      | 1.77                     | 0.49              |
| 7:AA:90:C:O2'     | 7:AA:91:C:H5'     | 2.12                     | 0.49              |
| 8:AB:35:G:C5      | 8:AB:454:A:C2     | 3.01                     | 0.49              |
| 8:AB:46:G:C2      | 8:AB:47:C:C6      | 3.00                     | 0.49              |
| 8:AB:137:U:C4     | 8:AB:138:U:C2     | 3.00                     | 0.49              |
| 8:AB:158:U:C2'    | 8:AB:159:G:H5'    | 2.40                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:171:U:O2'     | 8:AB:172:A:H5'    | 2.13                     | 0.49              |
| 8:AB:292:U:O5'     | 8:AB:292:U:H6     | 1.95                     | 0.49              |
| 8:AB:301:G:C4      | 8:AB:302:C:C6     | 3.00                     | 0.49              |
| 8:AB:314:C:C5      | 8:AB:315:G:N7     | 2.81                     | 0.49              |
| 8:AB:597:G:N2      | 8:AB:661:A:C4     | 2.81                     | 0.49              |
| 8:AB:736:C:C2      | 8:AB:737:C:H5     | 2.31                     | 0.49              |
| 8:AB:798:G:C6      | 8:AB:799:G:N7     | 2.81                     | 0.49              |
| 8:AB:855:G:C4      | 8:AB:923:G:N2     | 2.81                     | 0.49              |
| 8:AB:919:U:C4      | 8:AB:920:A:C5     | 3.00                     | 0.49              |
| 8:AB:1094:U:H1'    | 8:AB:1097:U:C5    | 2.48                     | 0.49              |
| 8:AB:1218:G:C6     | 8:AB:1232:G:C6    | 3.00                     | 0.49              |
| 8:AB:1299:G:O2'    | 8:AB:1640:A:N6    | 2.45                     | 0.49              |
| 8:AB:1429:G:C1'    | 8:AB:1568:G:H1'   | 2.42                     | 0.49              |
| 8:AB:1455:G:C2     | 8:AB:1456:G:H1'   | 2.48                     | 0.49              |
| 8:AB:1465:G:H2'    | 8:AB:1466:U:O4'   | 2.12                     | 0.49              |
| 8:AB:1534:U:H2'    | 8:AB:1536:C:N3    | 2.27                     | 0.49              |
| 8:AB:1668:A:H4'    | 8:AB:1669:A:O5'   | 2.12                     | 0.49              |
| 8:AB:1842:G:C1'    | 9:AC:241:LYS:HE3  | 2.42                     | 0.49              |
| 8:AB:1947:C:N3     | 8:AB:1960:A:C2    | 2.80                     | 0.49              |
| 8:AB:2543:G:C2     | 8:AB:2765:A:C4    | 3.01                     | 0.49              |
| 8:AB:2618:G:C8     | 8:AB:2619:C:H5    | 2.30                     | 0.49              |
| 8:AB:2829:A:C2     | 8:AB:2830:C:C2    | 3.01                     | 0.49              |
| 8:AB:2880:C:H6     | 20:AN:91:ALA:HB3  | 1.75                     | 0.49              |
| 9:AC:153:LEU:HD22  | 9:AC:161:VAL:HG21 | 1.95                     | 0.49              |
| 9:AC:153:LEU:HD13  | 9:AC:161:VAL:HG22 | 1.93                     | 0.49              |
| 11:AE:3:LEU:HD12   | 11:AE:12:LEU:HB3  | 1.94                     | 0.49              |
| 11:AE:88:ARG:HD2   | 11:AE:88:ARG:H    | 1.77                     | 0.49              |
| 11:AE:147:LEU:HD22 | 11:AE:165:HIS:CD2 | 2.47                     | 0.49              |
| 12:AF:97:GLU:HA    | 12:AF:100:GLU:OE1 | 2.12                     | 0.49              |
| 13:AG:170:THR:C    | 13:AG:172:GLU:H   | 2.16                     | 0.49              |
| 15:AI:71:LYS:HD3   | 15:AI:115:ASP:OD2 | 2.12                     | 0.49              |
| 16:AJ:73:VAL:CG2   | 16:AJ:74:TYR:N    | 2.75                     | 0.49              |
| 17:AK:64:ARG:O     | 17:AK:82:ASN:HA   | 2.11                     | 0.49              |
| 18:AL:29:LYS:CG    | 18:AL:30:THR:N    | 2.76                     | 0.49              |
| 22:AP:26:GLU:CA    | 22:AP:47:ILE:HB   | 2.41                     | 0.49              |
| 23:AQ:10:ARG:HB3   | 23:AQ:14:LYS:NZ   | 2.28                     | 0.49              |
| 24:AR:26:ASP:O     | 24:AR:27:ILE:CB   | 2.60                     | 0.49              |
| 24:AR:80:ARG:HG3   | 24:AR:81:LYS:N    | 2.23                     | 0.49              |
| 25:AS:28:LYS:HB3   | 25:AS:71:VAL:HG21 | 1.93                     | 0.49              |
| 25:AS:84:ARG:NH2   | 25:AS:98:LYS:CE   | 2.69                     | 0.49              |
| 26:AT:37:ASP:N     | 26:AT:37:ASP:OD1  | 2.45                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:AW:45:HIS:NE2  | 29:AW:64:GLY:HA3   | 2.28                     | 0.49              |
| 32:AZ:48:GLN:HB3  | 32:AZ:51:VAL:HG23  | 1.94                     | 0.49              |
| 33:BA:41:G:H2'    | 33:BA:42:G:C8      | 2.47                     | 0.49              |
| 33:BA:391:G:O2'   | 33:BA:392:C:O4'    | 2.19                     | 0.49              |
| 33:BA:737:C:O5'   | 33:BA:737:C:C6     | 2.59                     | 0.49              |
| 33:BA:755:G:C6    | 33:BA:756:C:N4     | 2.73                     | 0.49              |
| 33:BA:779:C:H2'   | 33:BA:779:C:O2     | 2.12                     | 0.49              |
| 33:BA:797:C:H3'   | 33:BA:797:C:C6     | 2.47                     | 0.49              |
| 33:BA:815:A:H4'   | 33:BA:817:C:C4     | 2.47                     | 0.49              |
| 33:BA:825:A:N1    | 33:BA:876:C:N3     | 2.60                     | 0.49              |
| 33:BA:861:G:C6    | 33:BA:862:C:C4     | 3.00                     | 0.49              |
| 33:BA:867:G:H2'   | 33:BA:868:C:C5     | 2.47                     | 0.49              |
| 33:BA:872:A:C4    | 33:BA:874:G:C8     | 3.00                     | 0.49              |
| 33:BA:910:C:C2'   | 33:BA:911:U:H5'    | 2.42                     | 0.49              |
| 33:BA:917:G:C2    | 33:BA:918:A:C4     | 3.00                     | 0.49              |
| 33:BA:918:A:N6    | 33:BA:919:A:N1     | 2.60                     | 0.49              |
| 33:BA:925:G:C6    | 33:BA:1392:G:C2    | 3.01                     | 0.49              |
| 33:BA:1038:C:O2'  | 33:BA:1039:G:H5'   | 2.12                     | 0.49              |
| 33:BA:1173:U:C2   | 33:BA:1174:G:C8    | 3.00                     | 0.49              |
| 33:BA:1255:G:O2'  | 33:BA:1258:G:H1'   | 2.12                     | 0.49              |
| 33:BA:1260:G:P    | 33:BA:1284:C:H4'   | 2.53                     | 0.49              |
| 34:BB:90:PHE:O    | 34:BB:149:GLY:HA3  | 2.12                     | 0.49              |
| 35:BC:49:ALA:O    | 35:BC:71:ARG:HB3   | 2.13                     | 0.49              |
| 35:BC:96:VAL:HB   | 35:BC:97:PRO:HD2   | 1.94                     | 0.49              |
| 35:BC:139:ASN:ND2 | 35:BC:142:ARG:HH21 | 2.10                     | 0.49              |
| 38:BF:3:HIS:O     | 38:BF:92:THR:HA    | 2.13                     | 0.49              |
| 44:BL:87:LYS:HA   | 44:BL:87:LYS:HZ2   | 1.71                     | 0.49              |
| 46:BN:66:THR:CB   | 46:BN:82:LYS:HD2   | 2.42                     | 0.49              |
| 49:BQ:10:ARG:NH2  | 49:BQ:11:VAL:HB    | 2.26                     | 0.49              |
| 50:BR:55:ALA:HA   | 50:BR:58:ILE:HD12  | 1.93                     | 0.49              |
| 51:BS:43:MET:O    | 51:BS:61:VAL:HB    | 2.12                     | 0.49              |
| 52:BT:24:ARG:HA   | 52:BT:27:MET:HE2   | 1.94                     | 0.49              |
| 1:C0:39:ARG:HH11  | 8:CB:2816:G:H4'    | 1.77                     | 0.49              |
| 4:C3:7:ARG:HA     | 4:C3:10:ALA:CB     | 2.42                     | 0.49              |
| 4:C3:25:HIS:NE2   | 4:C3:46:LYS:HG2    | 2.27                     | 0.49              |
| 5:C4:24:ARG:CB    | 5:C4:36:ARG:CA     | 2.86                     | 0.49              |
| 8:CB:5:A:H5''     | 8:CB:6:A:OP2       | 2.12                     | 0.49              |
| 8:CB:51:G:N3      | 8:CB:119:A:C2      | 2.80                     | 0.49              |
| 8:CB:86:G:OP1     | 27:CU:29:SER:O     | 2.31                     | 0.49              |
| 8:CB:93:G:C5      | 8:CB:94:A:C5       | 3.01                     | 0.49              |
| 8:CB:94:A:C8      | 8:CB:94:A:O5'      | 2.66                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:322:A:C2      | 8:CB:340:A:C6     | 3.00                     | 0.49              |
| 8:CB:442:G:C2      | 8:CB:444:C:C5     | 3.01                     | 0.49              |
| 8:CB:448:U:C5      | 8:CB:583:G:H1'    | 2.47                     | 0.49              |
| 8:CB:482:A:N7      | 8:CB:506:G:C4     | 2.80                     | 0.49              |
| 8:CB:556:A:H2      | 8:CB:557:C:H1'    | 1.76                     | 0.49              |
| 8:CB:677:A:O2'     | 8:CB:678:C:H5'    | 2.11                     | 0.49              |
| 8:CB:783:A:H4'     | 8:CB:1779:U:O2    | 2.13                     | 0.49              |
| 8:CB:796:C:H2'     | 8:CB:797:G:O4'    | 2.12                     | 0.49              |
| 8:CB:812:C:H2'     | 8:CB:813:U:C5'    | 2.43                     | 0.49              |
| 8:CB:843:G:O6      | 8:CB:844:A:C6     | 2.64                     | 0.49              |
| 8:CB:866:A:C8      | 8:CB:914:G:C6     | 3.01                     | 0.49              |
| 8:CB:1083:U:OP2    | 8:CB:1083:U:H6    | 1.96                     | 0.49              |
| 8:CB:1131:G:C4     | 8:CB:2025:C:O2'   | 2.66                     | 0.49              |
| 8:CB:1272:A:O2'    | 8:CB:1273:U:H5'   | 2.12                     | 0.49              |
| 8:CB:1298:C:O4'    | 8:CB:1302:A:C2    | 2.66                     | 0.49              |
| 8:CB:1351:C:N3     | 8:CB:1381:G:O6    | 2.45                     | 0.49              |
| 8:CB:1495:A:H2     | 8:CB:1578:U:O2    | 1.96                     | 0.49              |
| 8:CB:1584:U:H5''   | 8:CB:1585:C:C5    | 2.47                     | 0.49              |
| 8:CB:1663:G:H5'    | 8:CB:1663:G:C8    | 2.41                     | 0.49              |
| 8:CB:1804:C:P      | 9:CC:254:LYS:HD2  | 2.52                     | 0.49              |
| 8:CB:1819:A:H1'    | 8:CB:1821:A:C5    | 2.47                     | 0.49              |
| 8:CB:1855:U:C5     | 8:CB:1856:U:C5    | 3.00                     | 0.49              |
| 8:CB:1972:G:N3     | 8:CB:1972:G:H2'   | 2.28                     | 0.49              |
| 8:CB:2300:C:C2'    | 8:CB:2301:C:H5'   | 2.43                     | 0.49              |
| 8:CB:2454:G:C5     | 8:CB:2455:G:N7    | 2.80                     | 0.49              |
| 8:CB:2489:U:H2'    | 8:CB:2490:G:H5'   | 1.93                     | 0.49              |
| 8:CB:2577:A:C4'    | 8:CB:2612:C:N4    | 2.76                     | 0.49              |
| 8:CB:2804:U:C4     | 8:CB:2805:C:N4    | 2.80                     | 0.49              |
| 8:CB:2859:G:H2'    | 8:CB:2860:A:H5''  | 1.95                     | 0.49              |
| 10:CD:31:ALA:HB3   | 10:CD:95:SER:N    | 2.27                     | 0.49              |
| 11:CE:198:GLU:O    | 11:CE:199:MET:HB2 | 2.11                     | 0.49              |
| 12:CF:76:PHE:HD1   | 12:CF:78:ILE:HD12 | 1.77                     | 0.49              |
| 13:CG:16:VAL:HG12  | 13:CG:17:LYS:N    | 2.20                     | 0.49              |
| 13:CG:108:PHE:HZ   | 13:CG:151:ARG:CG  | 2.17                     | 0.49              |
| 14:CH:47:PHE:HD2   | 14:CH:48:GLU:N    | 2.10                     | 0.49              |
| 17:CK:47:ILE:HB    | 17:CK:48:PRO:HD2  | 1.95                     | 0.49              |
| 18:CL:19:LEU:N     | 18:CL:19:LEU:CD1  | 2.58                     | 0.49              |
| 18:CL:43:GLY:O     | 18:CL:45:GLY:N    | 2.46                     | 0.49              |
| 19:CM:101:VAL:HG11 | 19:CM:113:ALA:HB1 | 1.94                     | 0.49              |
| 20:CN:92:GLY:O     | 20:CN:94:TYR:N    | 2.45                     | 0.49              |
| 21:CO:73:ALA:O     | 21:CO:76:LYS:HB2  | 2.11                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:CV:70:ILE:HG12 | 28:CV:71:LYS:N    | 2.27                     | 0.49              |
| 33:DA:15:G:N7     | 33:DA:1396:A:C5   | 2.81                     | 0.49              |
| 33:DA:229:U:H2'   | 33:DA:230:G:C8    | 2.47                     | 0.49              |
| 33:DA:253:A:OP2   | 49:DQ:68:LYS:HD3  | 2.12                     | 0.49              |
| 33:DA:261:U:C5    | 52:DT:73:ARG:NH1  | 2.78                     | 0.49              |
| 33:DA:349:A:O5'   | 33:DA:349:A:H8    | 1.95                     | 0.49              |
| 33:DA:648:A:C2'   | 33:DA:649:A:H5'   | 2.42                     | 0.49              |
| 33:DA:690:G:OP2   | 43:DK:28:ASN:OD1  | 2.29                     | 0.49              |
| 33:DA:691:G:H1'   | 33:DA:696:A:N6    | 2.28                     | 0.49              |
| 33:DA:721:G:C8    | 33:DA:722:G:C6    | 3.00                     | 0.49              |
| 33:DA:907:A:C5    | 33:DA:908:A:C8    | 3.01                     | 0.49              |
| 33:DA:1199:U:H5'  | 42:DJ:56:HIS:CE1  | 2.47                     | 0.49              |
| 33:DA:1284:C:N4   | 33:DA:1285:A:H62  | 2.11                     | 0.49              |
| 33:DA:1330:U:O5'  | 33:DA:1330:U:H6   | 1.95                     | 0.49              |
| 33:DA:1464:U:H2'  | 33:DA:1465:A:C8   | 2.48                     | 0.49              |
| 33:DA:1516:G:H2'  | 33:DA:1518:A:OP2  | 2.12                     | 0.49              |
| 34:DB:76:SER:O    | 34:DB:79:VAL:HG22 | 2.13                     | 0.49              |
| 34:DB:196:ASP:OD2 | 34:DB:196:ASP:N   | 2.45                     | 0.49              |
| 36:DD:169:TRP:NE1 | 36:DD:185:PRO:HB3 | 2.27                     | 0.49              |
| 37:DE:19:ARG:CG   | 37:DE:20:VAL:N    | 2.76                     | 0.49              |
| 37:DE:89:THR:HG22 | 37:DE:90:GLY:N    | 2.28                     | 0.49              |
| 5:A4:15:LYS:CE    | 5:A4:17:VAL:HB    | 2.43                     | 0.49              |
| 8:AB:78:U:H2'     | 8:AB:79:C:H6      | 1.77                     | 0.49              |
| 8:AB:449:A:H2'    | 8:AB:450:G:C5'    | 2.42                     | 0.49              |
| 8:AB:464:U:H1'    | 8:AB:686:U:H5     | 1.77                     | 0.49              |
| 8:AB:540:C:O2'    | 8:AB:541:A:H5'    | 2.13                     | 0.49              |
| 8:AB:564:C:H5''   | 8:AB:565:C:OP2    | 2.12                     | 0.49              |
| 8:AB:706:A:C2     | 8:AB:707:G:H1'    | 2.47                     | 0.49              |
| 8:AB:792:A:C5     | 8:AB:2440:C:C6    | 3.00                     | 0.49              |
| 8:AB:1041:G:H2'   | 8:AB:1042:G:H8    | 1.76                     | 0.49              |
| 8:AB:1096:A:H2'   | 8:AB:1097:U:H4'   | 1.94                     | 0.49              |
| 8:AB:1235:G:C5'   | 8:AB:1236:G:OP2   | 2.61                     | 0.49              |
| 8:AB:1570:A:N6    | 8:AB:1571:A:C6    | 2.81                     | 0.49              |
| 8:AB:1574:C:H2'   | 8:AB:1575:C:C6    | 2.48                     | 0.49              |
| 8:AB:1748:C:H5''  | 8:AB:1748:C:C6    | 2.44                     | 0.49              |
| 8:AB:1805:A:H2'   | 8:AB:1806:C:C5'   | 2.42                     | 0.49              |
| 8:AB:1813:G:N3    | 9:AC:50:THR:CG2   | 2.72                     | 0.49              |
| 8:AB:2269:G:H2'   | 8:AB:2270:A:H5'   | 1.95                     | 0.49              |
| 8:AB:2297:A:H2'   | 8:AB:2298:A:H8    | 1.78                     | 0.49              |
| 8:AB:2392:A:O2'   | 18:AL:62:PRO:CG   | 2.60                     | 0.49              |
| 8:AB:2854:G:N2    | 8:AB:2864:G:C4    | 2.81                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AC:3:VAL:HG12    | 9:AC:4:LYS:H       | 1.77                     | 0.49              |
| 9:AC:62:ARG:HD3    | 9:AC:62:ARG:O      | 2.12                     | 0.49              |
| 12:AF:133:GLU:CA   | 12:AF:150:GLY:HA2  | 2.43                     | 0.49              |
| 12:AF:139:GLU:C    | 12:AF:140:ILE:HD12 | 2.33                     | 0.49              |
| 13:AG:68:ARG:HG2   | 13:AG:71:LEU:CD2   | 2.39                     | 0.49              |
| 15:AI:104:GLN:O    | 15:AI:105:LEU:HD23 | 2.12                     | 0.49              |
| 15:AI:126:ARG:HA   | 15:AI:129:GLU:CG   | 2.42                     | 0.49              |
| 16:AJ:100:VAL:O    | 16:AJ:102:GLU:HG2  | 2.12                     | 0.49              |
| 21:AO:1:MET:O      | 21:AO:97:PHE:HE1   | 1.96                     | 0.49              |
| 22:AP:12:MET:HA    | 22:AP:12:MET:HE3   | 1.95                     | 0.49              |
| 27:AU:96:LYS:O     | 27:AU:98:ASN:N     | 2.45                     | 0.49              |
| 32:AZ:3:LYS:HG2    | 32:AZ:8:LYS:HA     | 1.93                     | 0.49              |
| 33:BA:184:G:O4'    | 33:BA:224:U:H4'    | 2.13                     | 0.49              |
| 33:BA:232:G:H1'    | 33:BA:262:A:N1     | 2.27                     | 0.49              |
| 33:BA:343:U:O2'    | 33:BA:344:A:H2'    | 2.12                     | 0.49              |
| 33:BA:419:C:H2'    | 33:BA:420:U:H5'    | 1.94                     | 0.49              |
| 33:BA:764:C:N4     | 33:BA:812:G:N1     | 2.60                     | 0.49              |
| 33:BA:770:C:C6     | 33:BA:770:C:H3'    | 2.47                     | 0.49              |
| 33:BA:854:U:O2     | 33:BA:855:U:C5     | 2.65                     | 0.49              |
| 33:BA:863:U:C5     | 33:BA:867:G:O6     | 2.65                     | 0.49              |
| 33:BA:1401:G:N7    | 33:BA:1402:C:C5    | 2.81                     | 0.49              |
| 34:BB:50:ASN:O     | 34:BB:54:ALA:N     | 2.44                     | 0.49              |
| 34:BB:111:LYS:C    | 34:BB:113:LEU:N    | 2.64                     | 0.49              |
| 34:BB:187:ASP:HB2  | 34:BB:203:ASP:HB2  | 1.89                     | 0.49              |
| 35:BC:66:THR:HG22  | 35:BC:67:ILE:N     | 2.26                     | 0.49              |
| 36:BD:56:GLU:HA    | 36:BD:59:LYS:CB    | 2.41                     | 0.49              |
| 37:BE:89:THR:CG2   | 37:BE:90:GLY:N     | 2.70                     | 0.49              |
| 38:BF:7:VAL:O      | 38:BF:88:MET:O     | 2.31                     | 0.49              |
| 38:BF:68:GLN:HA    | 38:BF:71:ILE:CG2   | 2.36                     | 0.49              |
| 39:BG:117:LEU:C    | 39:BG:119:LEU:H    | 2.14                     | 0.49              |
| 39:BG:119:LEU:HD13 | 39:BG:123:LEU:HD23 | 1.94                     | 0.49              |
| 44:BL:42:LYS:HE2   | 44:BL:90:PRO:HG3   | 1.93                     | 0.49              |
| 49:BQ:56:ASP:O     | 49:BQ:57:VAL:HG23  | 2.12                     | 0.49              |
| 1:C0:15:ARG:HA     | 8:CB:2046:G:H4'    | 1.94                     | 0.49              |
| 3:C2:46:LYS:HE3    | 3:C2:46:LYS:O      | 2.12                     | 0.49              |
| 4:C3:13:PHE:O      | 4:C3:14:LYS:HB2    | 2.12                     | 0.49              |
| 8:CB:98:G:H3'      | 8:CB:99:U:H5''     | 1.93                     | 0.49              |
| 8:CB:201:C:O2'     | 8:CB:202:U:H5'     | 2.13                     | 0.49              |
| 8:CB:307:G:H2'     | 8:CB:309:A:OP2     | 2.12                     | 0.49              |
| 8:CB:311:A:H3'     | 8:CB:312:G:C8      | 2.48                     | 0.49              |
| 8:CB:361:G:O2'     | 8:CB:362:A:H5'     | 2.13                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:371:A:N6     | 8:CB:401:A:H3'     | 2.26                     | 0.49              |
| 8:CB:394:C:O2     | 8:CB:394:C:H2'     | 2.11                     | 0.49              |
| 8:CB:445:C:O2'    | 8:CB:446:G:H5'     | 2.12                     | 0.49              |
| 8:CB:534:U:H3     | 8:CB:559:G:H1      | 1.60                     | 0.49              |
| 8:CB:575:A:H2'    | 8:CB:576:U:H5''    | 1.95                     | 0.49              |
| 8:CB:581:C:H2'    | 8:CB:582:A:C8      | 2.47                     | 0.49              |
| 8:CB:666:A:OP2    | 18:CL:48:ARG:HD2   | 2.11                     | 0.49              |
| 8:CB:771:G:C6     | 8:CB:772:C:N4      | 2.81                     | 0.49              |
| 8:CB:911:A:C2     | 8:CB:2277:G:N3     | 2.79                     | 0.49              |
| 8:CB:973:A:C8     | 8:CB:1188:U:C2     | 3.01                     | 0.49              |
| 8:CB:1225:G:C5    | 8:CB:1226:A:C6     | 3.01                     | 0.49              |
| 8:CB:1299:G:H5''  | 8:CB:1300:G:OP1    | 2.12                     | 0.49              |
| 8:CB:1471:G:H1    | 8:CB:1520:U:H3     | 1.59                     | 0.49              |
| 8:CB:1658:C:N3    | 8:CB:1659:G:N7     | 2.61                     | 0.49              |
| 8:CB:1729:U:H3'   | 8:CB:1730:C:C4'    | 2.33                     | 0.49              |
| 8:CB:2028:U:C2'   | 8:CB:2029:G:C8     | 2.93                     | 0.49              |
| 8:CB:2060:A:N3    | 8:CB:2502:G:C4     | 2.81                     | 0.49              |
| 8:CB:2189:U:C2    | 8:CB:2190:G:N7     | 2.80                     | 0.49              |
| 8:CB:2190:G:C2'   | 8:CB:2191:A:H5'    | 2.43                     | 0.49              |
| 8:CB:2195:U:O2'   | 8:CB:2196:C:H5'    | 2.13                     | 0.49              |
| 8:CB:2303:G:C6    | 8:CB:2304:G:C8     | 3.01                     | 0.49              |
| 8:CB:2394:C:OP1   | 18:CL:64:PHE:CD2   | 2.66                     | 0.49              |
| 8:CB:2574:G:C4    | 8:CB:2575:C:C6     | 2.99                     | 0.49              |
| 8:CB:2606:C:H2'   | 8:CB:2607:G:H5'    | 1.94                     | 0.49              |
| 8:CB:2820:A:OP1   | 20:CN:5:LYS:CG     | 2.60                     | 0.49              |
| 9:CC:229:HIS:CE1  | 9:CC:231:HIS:NE2   | 2.80                     | 0.49              |
| 10:CD:125:TRP:C   | 10:CD:127:PHE:H    | 2.13                     | 0.49              |
| 11:CE:50:ALA:O    | 11:CE:51:GLU:HB3   | 2.12                     | 0.49              |
| 12:CF:106:ALA:HB1 | 12:CF:136:ILE:CG2  | 2.41                     | 0.49              |
| 13:CG:45:ALA:HB3  | 13:CG:48:THR:OG1   | 2.13                     | 0.49              |
| 15:CI:17:ALA:O    | 15:CI:18:ASN:CB    | 2.59                     | 0.49              |
| 16:CJ:44:TYR:CZ   | 16:CJ:49:ASP:O     | 2.64                     | 0.49              |
| 19:CM:41:LEU:N    | 19:CM:41:LEU:HD23  | 2.26                     | 0.49              |
| 19:CM:46:ILE:HD12 | 19:CM:69:PRO:HG3   | 1.93                     | 0.49              |
| 19:CM:55:ARG:O    | 19:CM:57:VAL:N     | 2.44                     | 0.49              |
| 20:CN:24:MET:CE   | 20:CN:44:LEU:HD13  | 2.42                     | 0.49              |
| 20:CN:32:GLU:HA   | 20:CN:115:LEU:HD21 | 1.93                     | 0.49              |
| 22:CP:45:VAL:HG13 | 22:CP:65:ASN:HD21  | 1.77                     | 0.49              |
| 23:CQ:82:LEU:O    | 23:CQ:88:GLU:CG    | 2.59                     | 0.49              |
| 25:CS:10:ALA:O    | 25:CS:11:ARG:HB3   | 2.11                     | 0.49              |
| 25:CS:69:LEU:HB3  | 25:CS:107:VAL:HB   | 1.93                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 29:CW:42:THR:OG1  | 29:CW:66:VAL:N    | 2.46                     | 0.49              |
| 30:CX:28:LEU:HD21 | 30:CX:35:GLY:HA3  | 1.94                     | 0.49              |
| 33:DA:41:G:H2'    | 33:DA:42:G:C8     | 2.47                     | 0.49              |
| 33:DA:355:C:N4    | 33:DA:356:A:H62   | 2.10                     | 0.49              |
| 33:DA:378:G:O2'   | 33:DA:379:C:H5'   | 2.13                     | 0.49              |
| 33:DA:391:G:C2    | 33:DA:392:C:N1    | 2.80                     | 0.49              |
| 33:DA:435:A:C2    | 33:DA:436:C:N1    | 2.80                     | 0.49              |
| 33:DA:478:A:C6    | 33:DA:479:U:C2    | 3.00                     | 0.49              |
| 33:DA:528:C:O2    | 33:DA:535:A:O2'   | 2.29                     | 0.49              |
| 33:DA:542:G:O2'   | 33:DA:543:U:H5'   | 2.12                     | 0.49              |
| 33:DA:644:U:H2'   | 33:DA:645:G:O4'   | 2.12                     | 0.49              |
| 33:DA:673:A:C2    | 33:DA:734:G:C2    | 3.01                     | 0.49              |
| 33:DA:713:G:H8    | 33:DA:713:G:O5'   | 1.94                     | 0.49              |
| 33:DA:774:G:C6    | 33:DA:775:G:N9    | 2.80                     | 0.49              |
| 33:DA:819:A:H4'   | 33:DA:820:U:OP2   | 2.13                     | 0.49              |
| 33:DA:897:C:H2'   | 33:DA:897:C:O2    | 2.12                     | 0.49              |
| 33:DA:920:U:C2    | 33:DA:921:U:C4    | 3.00                     | 0.49              |
| 33:DA:1053:G:OP1  | 33:DA:1054:C:C6   | 2.66                     | 0.49              |
| 33:DA:1058:G:C6   | 33:DA:1059:C:C2   | 3.00                     | 0.49              |
| 33:DA:1072:G:C5   | 33:DA:1073:U:C4   | 3.00                     | 0.49              |
| 33:DA:1134:G:C6   | 33:DA:1135:U:H1'  | 2.47                     | 0.49              |
| 33:DA:1339:A:H2'  | 33:DA:1340:A:O4'  | 2.12                     | 0.49              |
| 33:DA:1416:G:C6   | 33:DA:1485:U:O2   | 2.65                     | 0.49              |
| 33:DA:1475:G:O2'  | 33:DA:1476:A:H5'  | 2.13                     | 0.49              |
| 35:DC:42:LEU:CD2  | 35:DC:86:LEU:HD22 | 2.43                     | 0.49              |
| 36:DD:44:LYS:HD3  | 36:DD:44:LYS:O    | 2.12                     | 0.49              |
| 36:DD:138:PRO:HA  | 36:DD:181:PHE:CD2 | 2.47                     | 0.49              |
| 36:DD:169:TRP:HD1 | 36:DD:183:ARG:O   | 1.95                     | 0.49              |
| 40:DH:61:THR:O    | 40:DH:61:THR:OG1  | 2.26                     | 0.49              |
| 41:DI:119:LYS:O   | 41:DI:120:ALA:CB  | 2.60                     | 0.49              |
| 42:DJ:9:ARG:HB2   | 42:DJ:99:GLN:CB   | 2.43                     | 0.49              |
| 42:DJ:86:ALA:O    | 42:DJ:87:LEU:HD13 | 2.12                     | 0.49              |
| 44:DL:35:ARG:NH1  | 44:DL:75:GLU:HB3  | 2.27                     | 0.49              |
| 45:DM:34:ALA:HB2  | 45:DM:40:GLU:HB3  | 1.95                     | 0.49              |
| 3:A2:26:ASN:ND2   | 3:A2:26:ASN:H     | 2.10                     | 0.49              |
| 6:A5:157:LYS:N    | 6:A5:157:LYS:HD2  | 2.27                     | 0.49              |
| 7:AA:39:A:C2'     | 7:AA:40:U:H5'     | 2.43                     | 0.49              |
| 8:AB:112:U:H5'    | 30:AX:58:ASN:HD22 | 1.76                     | 0.49              |
| 8:AB:117:G:C6     | 8:AB:119:A:C6     | 3.00                     | 0.49              |
| 8:AB:123:G:C6     | 8:AB:124:G:C5     | 3.01                     | 0.49              |
| 8:AB:294:A:C5     | 8:AB:345:A:C2     | 3.01                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:468:G:C2'    | 8:AB:469:G:C8      | 2.92                     | 0.49              |
| 8:AB:503:A:N3     | 8:AB:505:A:H2'     | 2.28                     | 0.49              |
| 8:AB:535:G:H1'    | 23:AQ:52:ARG:HH11  | 1.75                     | 0.49              |
| 8:AB:597:G:C6     | 8:AB:598:U:N3      | 2.81                     | 0.49              |
| 8:AB:602:A:H4'    | 8:AB:604:G:H4'     | 1.95                     | 0.49              |
| 8:AB:792:A:H4'    | 8:AB:793:A:H5'     | 1.94                     | 0.49              |
| 8:AB:901:C:C4     | 8:AB:902:C:N4      | 2.78                     | 0.49              |
| 8:AB:990:A:H5''   | 8:AB:1157:G:OP1    | 2.12                     | 0.49              |
| 8:AB:1015:U:H3'   | 8:AB:1015:U:H6     | 1.78                     | 0.49              |
| 8:AB:1021:A:C2'   | 8:AB:1022:G:O5'    | 2.60                     | 0.49              |
| 8:AB:1176:U:O5'   | 8:AB:1176:U:C6     | 2.65                     | 0.49              |
| 8:AB:1275:A:H2'   | 8:AB:1276:A:O5'    | 2.13                     | 0.49              |
| 8:AB:1356:G:H2'   | 8:AB:1357:C:C6     | 2.46                     | 0.49              |
| 8:AB:1715:G:N2    | 8:AB:1744:A:OP2    | 2.46                     | 0.49              |
| 8:AB:1734:G:N3    | 8:AB:1735:A:C8     | 2.81                     | 0.49              |
| 8:AB:1801:A:H8    | 8:AB:2203:U:H2'    | 1.78                     | 0.49              |
| 8:AB:1854:A:N6    | 8:AB:1888:G:H1'    | 2.26                     | 0.49              |
| 8:AB:1856:U:H2'   | 8:AB:1857:G:O4'    | 2.12                     | 0.49              |
| 8:AB:2011:U:H2'   | 8:AB:2012:G:C8     | 2.47                     | 0.49              |
| 8:AB:2104:C:C5'   | 8:AB:2104:C:H6     | 2.26                     | 0.49              |
| 8:AB:2109:U:O4    | 8:AB:2181:U:C5     | 2.65                     | 0.49              |
| 8:AB:2249:U:N3    | 8:AB:2253:G:OP2    | 2.44                     | 0.49              |
| 8:AB:2282:G:H4'   | 8:AB:2283:C:OP2    | 2.12                     | 0.49              |
| 8:AB:2285:C:O2    | 8:AB:2288:A:C8     | 2.66                     | 0.49              |
| 8:AB:2370:G:H2'   | 8:AB:2371:G:O5'    | 2.13                     | 0.49              |
| 8:AB:2532:G:H2'   | 8:AB:2533:U:H6     | 1.74                     | 0.49              |
| 8:AB:2593:U:C6    | 8:AB:2594:C:H5     | 2.30                     | 0.49              |
| 9:AC:44:ASN:ND2   | 9:AC:47:ARG:O      | 2.46                     | 0.49              |
| 9:AC:53:ILE:HG23  | 9:AC:218:THR:H     | 1.77                     | 0.49              |
| 10:AD:42:ASN:HD22 | 10:AD:42:ASN:C     | 2.16                     | 0.49              |
| 11:AE:123:LYS:HB3 | 11:AE:126:VAL:HG21 | 1.95                     | 0.49              |
| 11:AE:134:LEU:O   | 11:AE:134:LEU:HD23 | 2.12                     | 0.49              |
| 15:AI:96:LYS:CG   | 15:AI:138:VAL:HB   | 2.42                     | 0.49              |
| 16:AJ:45:THR:N    | 23:AQ:63:ARG:NH2   | 2.61                     | 0.49              |
| 16:AJ:55:ILE:HG12 | 16:AJ:123:LYS:HB2  | 1.94                     | 0.49              |
| 17:AK:76:VAL:O    | 22:AP:74:GLN:N     | 2.44                     | 0.49              |
| 18:AL:40:SER:HA   | 18:AL:41:ARG:NE    | 2.27                     | 0.49              |
| 19:AM:25:ASP:HB3  | 19:AM:98:PRO:HA    | 1.93                     | 0.49              |
| 22:AP:49:ILE:C    | 22:AP:50:ARG:HH11  | 2.16                     | 0.49              |
| 22:AP:50:ARG:CG   | 22:AP:99:LEU:HB3   | 2.43                     | 0.49              |
| 24:AR:22:LEU:O    | 24:AR:23:GLU:HB3   | 2.12                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 24:AR:22:LEU:C    | 24:AR:96:VAL:HG22  | 2.33                     | 0.49              |
| 25:AS:17:VAL:HA   | 25:AS:20:VAL:HG12  | 1.95                     | 0.49              |
| 25:AS:50:VAL:O    | 25:AS:50:VAL:HG23  | 2.12                     | 0.49              |
| 26:AT:25:GLU:HA   | 26:AT:25:GLU:OE1   | 2.11                     | 0.49              |
| 29:AW:44:PHE:CZ   | 29:AW:58:LEU:O     | 2.66                     | 0.49              |
| 32:AZ:32:LEU:HD22 | 32:AZ:33:ASN:N     | 2.27                     | 0.49              |
| 32:AZ:58:ASP:C    | 32:AZ:59:ARG:HD3   | 2.33                     | 0.49              |
| 33:BA:136:C:C2'   | 33:BA:137:U:H5'    | 2.42                     | 0.49              |
| 33:BA:408:A:C5'   | 33:BA:408:A:H8     | 2.24                     | 0.49              |
| 33:BA:688:G:C6    | 33:BA:700:G:N2     | 2.81                     | 0.49              |
| 33:BA:845:A:H3'   | 33:BA:846:G:O4'    | 2.12                     | 0.49              |
| 33:BA:1287:A:N6   | 33:BA:1288:A:N6    | 2.60                     | 0.49              |
| 33:BA:1376:U:H5'  | 39:BG:101:ARG:NH2  | 2.28                     | 0.49              |
| 34:BB:98:GLY:HA3  | 34:BB:102:ASN:CB   | 2.43                     | 0.49              |
| 35:BC:6:PRO:HD2   | 35:BC:183:TYR:CD2  | 2.47                     | 0.49              |
| 35:BC:115:VAL:CG1 | 35:BC:137:VAL:HG22 | 2.43                     | 0.49              |
| 36:BD:27:ILE:O    | 36:BD:28:ASP:CB    | 2.61                     | 0.49              |
| 36:BD:117:VAL:O   | 36:BD:130:ASN:HA   | 2.13                     | 0.49              |
| 38:BF:93:LYS:HZ1  | 50:BR:20:ILE:HD12  | 1.78                     | 0.49              |
| 49:BQ:57:VAL:HB   | 49:BQ:79:GLU:HB2   | 1.95                     | 0.49              |
| 2:C1:15:GLY:CA    | 2:C1:47:ILE:HG21   | 2.42                     | 0.49              |
| 3:C2:12:ARG:C     | 3:C2:14:ARG:H      | 2.16                     | 0.49              |
| 8:CB:65:U:OP1     | 26:CT:76:ARG:HB2   | 2.11                     | 0.49              |
| 8:CB:208:C:N3     | 8:CB:209:C:C5      | 2.80                     | 0.49              |
| 8:CB:343:C:C2'    | 8:CB:344:A:H5'     | 2.39                     | 0.49              |
| 8:CB:346:A:C3'    | 8:CB:347:A:H5''    | 2.43                     | 0.49              |
| 8:CB:418:C:C2     | 8:CB:419:U:C5      | 3.00                     | 0.49              |
| 8:CB:418:C:C4     | 8:CB:419:U:C4      | 3.00                     | 0.49              |
| 8:CB:486:C:O4'    | 25:CS:60:HIS:CG    | 2.66                     | 0.49              |
| 8:CB:529:A:C6     | 8:CB:2042:A:C2     | 3.00                     | 0.49              |
| 8:CB:604:G:H2'    | 8:CB:605:G:C8      | 2.48                     | 0.49              |
| 8:CB:633:A:OP1    | 18:CL:71:ALA:CB    | 2.61                     | 0.49              |
| 8:CB:1018:U:C2    | 8:CB:1019:U:C5     | 3.01                     | 0.49              |
| 8:CB:1042:G:C5    | 8:CB:1043:C:C4     | 3.01                     | 0.49              |
| 8:CB:1099:G:C8    | 8:CB:1099:G:C5'    | 2.91                     | 0.49              |
| 8:CB:1118:C:O5'   | 8:CB:1119:U:OP2    | 2.31                     | 0.49              |
| 8:CB:1225:G:C5'   | 24:CR:90:ARG:NE    | 2.74                     | 0.49              |
| 8:CB:1364:G:H5''  | 8:CB:1365:A:OP2    | 2.13                     | 0.49              |
| 8:CB:1384:A:O2'   | 8:CB:1385:A:H5'    | 2.13                     | 0.49              |
| 8:CB:1429:G:H2'   | 8:CB:1430:G:C5'    | 2.43                     | 0.49              |
| 8:CB:1539:U:C2    | 8:CB:1540:G:C8     | 3.00                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1803:A:H2'   | 8:CB:1804:C:O4'    | 2.13                     | 0.49              |
| 8:CB:1822:C:O2'   | 8:CB:1823:G:H5''   | 2.13                     | 0.49              |
| 8:CB:1977:A:N1    | 8:CB:1978:A:N3     | 2.60                     | 0.49              |
| 8:CB:2057:G:C2    | 8:CB:2612:C:O2     | 2.65                     | 0.49              |
| 8:CB:2265:U:O2    | 8:CB:2276:G:C2     | 2.65                     | 0.49              |
| 8:CB:2331:G:H4'   | 29:CW:69:GLU:CG    | 2.38                     | 0.49              |
| 8:CB:2898:U:H2'   | 8:CB:2899:A:C8     | 2.47                     | 0.49              |
| 9:CC:168:GLY:O    | 9:CC:169:ALA:HB3   | 2.13                     | 0.49              |
| 9:CC:179:GLU:OE1  | 9:CC:267:VAL:HG23  | 2.13                     | 0.49              |
| 9:CC:211:ARG:O    | 9:CC:213:ARG:N     | 2.46                     | 0.49              |
| 11:CE:22:ASP:O    | 11:CE:110:SER:O    | 2.31                     | 0.49              |
| 11:CE:64:GLY:C    | 11:CE:66:GLY:H     | 2.16                     | 0.49              |
| 12:CF:177:ARG:HG2 | 12:CF:178:LYS:N    | 2.28                     | 0.49              |
| 16:CJ:7:LYS:HG2   | 16:CJ:48:VAL:HG11  | 1.95                     | 0.49              |
| 18:CL:141:LYS:C   | 18:CL:142:ILE:HG23 | 2.33                     | 0.49              |
| 20:CN:6:SER:O     | 20:CN:7:GLY:C      | 2.48                     | 0.49              |
| 20:CN:113:ILE:O   | 20:CN:113:ILE:HG22 | 2.13                     | 0.49              |
| 21:CO:4:LYS:HB2   | 21:CO:4:LYS:HZ3    | 1.78                     | 0.49              |
| 21:CO:104:GLN:O   | 21:CO:105:ALA:C    | 2.51                     | 0.49              |
| 21:CO:111:ARG:O   | 21:CO:113:ALA:O    | 2.30                     | 0.49              |
| 23:CQ:26:ALA:O    | 23:CQ:30:VAL:CG2   | 2.61                     | 0.49              |
| 25:CS:66:ILE:CG2  | 25:CS:67:ASP:N     | 2.75                     | 0.49              |
| 29:CW:45:HIS:NE2  | 29:CW:55:ASP:OD2   | 2.34                     | 0.49              |
| 33:DA:50:A:N3     | 33:DA:52:C:H1'     | 2.28                     | 0.49              |
| 33:DA:233:C:C2'   | 33:DA:234:C:H5'    | 2.43                     | 0.49              |
| 33:DA:343:U:HO2'  | 33:DA:344:A:H8     | 1.60                     | 0.49              |
| 33:DA:441:A:C2    | 33:DA:497:G:C6     | 3.01                     | 0.49              |
| 33:DA:544:G:C2    | 33:DA:545:C:C5     | 3.01                     | 0.49              |
| 33:DA:656:G:H2'   | 33:DA:656:G:N3     | 2.27                     | 0.49              |
| 33:DA:805:C:H5''  | 33:DA:806:C:OP2    | 2.12                     | 0.49              |
| 33:DA:1124:G:O2'  | 33:DA:1127:G:N1    | 2.45                     | 0.49              |
| 33:DA:1360:A:N6   | 33:DA:1361:G:N2    | 2.57                     | 0.49              |
| 33:DA:1422:G:C2   | 33:DA:1423:G:C5    | 3.01                     | 0.49              |
| 33:DA:1429:A:C2   | 33:DA:1472:U:C2    | 3.01                     | 0.49              |
| 33:DA:1480:A:H5'  | 33:DA:1480:A:C8    | 2.45                     | 0.49              |
| 34:DB:98:GLY:HA2  | 34:DB:101:THR:HG23 | 1.95                     | 0.49              |
| 36:DD:48:SER:O    | 36:DD:51:GLY:N     | 2.45                     | 0.49              |
| 36:DD:59:LYS:NZ   | 36:DD:194:ILE:HA   | 2.28                     | 0.49              |
| 36:DD:61:ARG:HE   | 36:DD:67:LEU:HA    | 1.78                     | 0.49              |
| 36:DD:169:TRP:HA  | 36:DD:182:LYS:HD2  | 1.95                     | 0.49              |
| 37:DE:158:LYS:CB  | 40:DH:63:LYS:HD3   | 2.39                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:DF:7:VAL:CG2    | 38:DF:8:PHE:N     | 2.75                     | 0.49              |
| 38:DF:12:PRO:HG2   | 38:DF:54:LEU:CD1  | 2.42                     | 0.49              |
| 44:DL:113:ARG:O    | 44:DL:114:SER:C   | 2.49                     | 0.49              |
| 46:DN:62:ARG:HD3   | 46:DN:67:GLY:O    | 2.13                     | 0.49              |
| 48:DP:19:VAL:HG13  | 48:DP:36:VAL:HG12 | 1.95                     | 0.49              |
| 48:DP:39:PHE:HA    | 48:DP:50:THR:HG23 | 1.94                     | 0.49              |
| 49:DQ:56:ASP:OD1   | 49:DQ:81:ALA:CB   | 2.56                     | 0.49              |
| 1:A0:47:TYR:HA     | 1:A0:52:LYS:HG2   | 1.93                     | 0.49              |
| 2:A1:24:LYS:HZ1    | 8:AB:2285:C:N4    | 2.05                     | 0.49              |
| 8:AB:147:C:C5      | 8:AB:148:U:C4     | 3.01                     | 0.49              |
| 8:AB:185:G:N1      | 8:AB:212:G:C2     | 2.80                     | 0.49              |
| 8:AB:285:G:C8      | 8:AB:285:G:H3'    | 2.48                     | 0.49              |
| 8:AB:301:G:C4      | 8:AB:302:C:C5     | 3.01                     | 0.49              |
| 8:AB:577:G:O2'     | 8:AB:1254:A:OP1   | 2.31                     | 0.49              |
| 8:AB:618:G:N3      | 8:AB:618:G:H2'    | 2.27                     | 0.49              |
| 8:AB:624:C:O2'     | 8:AB:625:G:H5'    | 2.13                     | 0.49              |
| 8:AB:639:U:H2'     | 8:AB:640:C:H6     | 1.77                     | 0.49              |
| 8:AB:718:A:H3'     | 8:AB:719:C:H6     | 1.77                     | 0.49              |
| 8:AB:740:C:N4      | 8:AB:758:C:O2     | 2.46                     | 0.49              |
| 8:AB:780:G:N1      | 9:AC:228:ASP:CG   | 2.63                     | 0.49              |
| 8:AB:795:C:O2'     | 8:AB:796:C:OP1    | 2.30                     | 0.49              |
| 8:AB:802:A:C6      | 8:AB:803:U:C4     | 3.00                     | 0.49              |
| 8:AB:1020:A:C2     | 8:AB:1141:U:C2    | 3.01                     | 0.49              |
| 8:AB:1265:A:H61    | 8:AB:2013:A:H5''  | 1.78                     | 0.49              |
| 8:AB:1574:C:C4     | 8:AB:1575:C:N4    | 2.81                     | 0.49              |
| 8:AB:1611:C:C2     | 8:AB:1612:C:C5    | 3.01                     | 0.49              |
| 8:AB:1805:A:H2'    | 8:AB:1806:C:H5''  | 1.94                     | 0.49              |
| 8:AB:1813:G:H8     | 8:AB:1813:G:O5'   | 1.96                     | 0.49              |
| 8:AB:2094:A:C2     | 8:AB:2196:C:C2    | 3.01                     | 0.49              |
| 8:AB:2762:C:C2'    | 8:AB:2763:G:H5''  | 2.41                     | 0.49              |
| 8:AB:2819:G:O2'    | 8:AB:2820:A:H5'   | 2.13                     | 0.49              |
| 9:AC:222:THR:HG21  | 9:AC:238:ASN:ND2  | 2.28                     | 0.49              |
| 10:AD:29:VAL:HG23  | 10:AD:51:THR:HG22 | 1.94                     | 0.49              |
| 14:AH:130:VAL:HG12 | 14:AH:131:SER:N   | 2.27                     | 0.49              |
| 15:AI:21:PRO:CB    | 15:AI:22:PRO:HD3  | 2.36                     | 0.49              |
| 18:AL:32:GLY:O     | 18:AL:34:GLY:N    | 2.45                     | 0.49              |
| 20:AN:21:PHE:O     | 20:AN:25:ALA:HB3  | 2.13                     | 0.49              |
| 21:AO:63:LYS:O     | 21:AO:64:TYR:CG   | 2.66                     | 0.49              |
| 22:AP:36:LYS:O     | 22:AP:38:ARG:N    | 2.44                     | 0.49              |
| 26:AT:15:HIS:O     | 26:AT:16:VAL:O    | 2.30                     | 0.49              |
| 27:AU:39:ASN:ND2   | 27:AU:42:LYS:HD3  | 2.28                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AZ:3:LYS:O     | 32:AZ:6:HIS:N      | 2.35                     | 0.49              |
| 33:BA:75:G:H2'    | 33:BA:76:G:O4'     | 2.12                     | 0.49              |
| 33:BA:164:G:N3    | 33:BA:164:G:H2'    | 2.28                     | 0.49              |
| 33:BA:386:C:C6    | 33:BA:386:C:C3'    | 2.96                     | 0.49              |
| 33:BA:436:C:O5'   | 33:BA:436:C:H6     | 1.96                     | 0.49              |
| 33:BA:492:C:N3    | 33:BA:493:A:C2     | 2.80                     | 0.49              |
| 33:BA:509:A:C8    | 33:BA:509:A:C3'    | 2.95                     | 0.49              |
| 33:BA:570:G:N3    | 33:BA:571:U:C5     | 2.81                     | 0.49              |
| 33:BA:616:G:H5''  | 33:BA:616:G:C8     | 2.48                     | 0.49              |
| 33:BA:878:A:H5''  | 40:BH:80:PRO:HG3   | 1.93                     | 0.49              |
| 33:BA:922:G:N3    | 33:BA:1398:A:H2    | 2.10                     | 0.49              |
| 33:BA:1314:C:C2   | 33:BA:1315:U:C5    | 3.00                     | 0.49              |
| 33:BA:1314:C:N3   | 33:BA:1315:U:C5    | 2.81                     | 0.49              |
| 33:BA:1415:G:C5   | 33:BA:1486:G:N2    | 2.80                     | 0.49              |
| 34:BB:35:ASN:CG   | 34:BB:36:LYS:HD3   | 2.32                     | 0.49              |
| 36:BD:64:TYR:O    | 36:BD:66:VAL:HG23  | 2.13                     | 0.49              |
| 36:BD:106:PHE:CD1 | 36:BD:144:ILE:HD11 | 2.48                     | 0.49              |
| 37:BE:93:VAL:HG11 | 37:BE:139:THR:CG2  | 2.43                     | 0.49              |
| 39:BG:73:GLU:O    | 39:BG:87:PRO:HA    | 2.12                     | 0.49              |
| 7:CA:18:G:C2      | 7:CA:67:G:O6       | 2.66                     | 0.49              |
| 8:CB:65:U:OP1     | 26:CT:76:ARG:N     | 2.46                     | 0.49              |
| 8:CB:92:U:C4      | 8:CB:93:G:C5       | 3.01                     | 0.49              |
| 8:CB:126:A:O2'    | 8:CB:127:A:C5'     | 2.58                     | 0.49              |
| 8:CB:188:G:H5''   | 32:CZ:12:ILE:CG2   | 2.42                     | 0.49              |
| 8:CB:197:A:H2'    | 8:CB:197:A:N3      | 2.26                     | 0.49              |
| 8:CB:283:G:N2     | 8:CB:358:U:C2      | 2.81                     | 0.49              |
| 8:CB:340:A:H3'    | 8:CB:341:C:C6      | 2.48                     | 0.49              |
| 8:CB:452:G:C2     | 8:CB:458:G:C5      | 3.01                     | 0.49              |
| 8:CB:482:A:N7     | 8:CB:506:G:N1      | 2.61                     | 0.49              |
| 8:CB:539:G:H2'    | 8:CB:540:C:O4'     | 2.13                     | 0.49              |
| 8:CB:608:A:C8     | 8:CB:621:A:N6      | 2.81                     | 0.49              |
| 8:CB:743:A:C6     | 8:CB:744:U:C5      | 3.00                     | 0.49              |
| 8:CB:797:G:C6     | 8:CB:798:G:C5      | 3.01                     | 0.49              |
| 8:CB:834:G:H8     | 8:CB:834:G:O5'     | 1.96                     | 0.49              |
| 8:CB:1040:A:C6    | 8:CB:1041:G:N7     | 2.80                     | 0.49              |
| 8:CB:1159:U:H2'   | 8:CB:1160:G:C8     | 2.48                     | 0.49              |
| 8:CB:1324:G:N2    | 8:CB:1331:G:C4     | 2.80                     | 0.49              |
| 8:CB:1525:A:C4    | 8:CB:1526:C:C6     | 3.01                     | 0.49              |
| 8:CB:1528:A:C8    | 8:CB:1544:A:N6     | 2.80                     | 0.49              |
| 8:CB:1821:A:C2    | 8:CB:1822:C:C4     | 3.00                     | 0.49              |
| 8:CB:1829:A:N7    | 8:CB:1830:C:C5     | 2.80                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2013:A:H2'   | 8:CB:2013:A:N3     | 2.27                     | 0.49              |
| 8:CB:2030:A:H4'   | 8:CB:2031:A:C5'    | 2.42                     | 0.49              |
| 8:CB:2278:A:N6    | 29:CW:11:ASN:O     | 2.45                     | 0.49              |
| 8:CB:2579:C:O4'   | 10:CD:138:LEU:HD22 | 2.13                     | 0.49              |
| 8:CB:2593:U:C5    | 8:CB:2594:C:H5     | 2.30                     | 0.49              |
| 8:CB:2633:G:C6    | 8:CB:2634:A:C5     | 3.01                     | 0.49              |
| 8:CB:2832:U:C4    | 8:CB:2834:G:N2     | 2.81                     | 0.49              |
| 8:CB:2851:A:H2'   | 8:CB:2852:G:C8     | 2.48                     | 0.49              |
| 12:CF:33:ILE:CG1  | 12:CF:34:THR:H     | 2.17                     | 0.49              |
| 12:CF:139:GLU:C   | 12:CF:140:ILE:HD12 | 2.33                     | 0.49              |
| 14:CH:2:GLN:O     | 14:CH:3:VAL:HG13   | 2.13                     | 0.49              |
| 14:CH:84:ALA:O    | 14:CH:91:PHE:HE1   | 1.96                     | 0.49              |
| 16:CJ:22:GLY:O    | 16:CJ:24:THR:N     | 2.45                     | 0.49              |
| 16:CJ:81:ILE:C    | 16:CJ:83:GLY:H     | 2.14                     | 0.49              |
| 22:CP:49:ILE:C    | 22:CP:50:ARG:HD3   | 2.33                     | 0.49              |
| 26:CT:5:GLU:O     | 26:CT:7:LEU:N      | 2.46                     | 0.49              |
| 26:CT:41:ALA:C    | 26:CT:43:ILE:H     | 2.15                     | 0.49              |
| 27:CU:83:GLY:HA2  | 27:CU:92:VAL:CG2   | 2.43                     | 0.49              |
| 29:CW:3:LYS:HZ3   | 29:CW:10:ARG:HE    | 1.59                     | 0.49              |
| 33:DA:28:A:H8     | 33:DA:28:A:O5'     | 1.96                     | 0.49              |
| 33:DA:174:A:H2'   | 33:DA:175:C:H5'    | 1.94                     | 0.49              |
| 33:DA:239:U:H2'   | 33:DA:239:U:O2     | 2.13                     | 0.49              |
| 33:DA:409:U:OP2   | 36:DD:21:LYS:HE2   | 2.12                     | 0.49              |
| 33:DA:600:A:C2    | 33:DA:601:G:C4     | 3.01                     | 0.49              |
| 33:DA:658:C:H2'   | 33:DA:659:U:C6     | 2.48                     | 0.49              |
| 33:DA:691:G:H2'   | 33:DA:692:U:C6     | 2.48                     | 0.49              |
| 33:DA:713:G:N2    | 33:DA:714:G:C2     | 2.81                     | 0.49              |
| 33:DA:734:G:N3    | 33:DA:734:G:H2'    | 2.27                     | 0.49              |
| 33:DA:896:C:C2    | 33:DA:897:C:C6     | 3.01                     | 0.49              |
| 33:DA:1074:G:H2'  | 33:DA:1075:U:H6    | 1.78                     | 0.49              |
| 33:DA:1092:A:C6   | 33:DA:1093:A:C6    | 3.00                     | 0.49              |
| 33:DA:1092:A:H2'  | 33:DA:1093:A:O4'   | 2.13                     | 0.49              |
| 33:DA:1225:A:C4   | 33:DA:1226:C:H5    | 2.31                     | 0.49              |
| 36:DD:64:TYR:CE2  | 36:DD:93:LEU:O     | 2.65                     | 0.49              |
| 36:DD:179:GLY:O   | 36:DD:180:THR:CB   | 2.60                     | 0.49              |
| 36:DD:181:PHE:HE2 | 36:DD:184:LYS:HA   | 1.77                     | 0.49              |
| 36:DD:196:GLU:HG2 | 36:DD:197:HIS:N    | 2.27                     | 0.49              |
| 39:DG:70:PRO:CD   | 39:DG:102:TRP:CZ3  | 2.95                     | 0.49              |
| 42:DJ:40:ILE:O    | 42:DJ:42:LEU:N     | 2.43                     | 0.49              |
| 42:DJ:42:LEU:HB3  | 42:DJ:43:PRO:HD2   | 1.95                     | 0.49              |
| 43:DK:32:THR:HG23 | 43:DK:32:THR:O     | 2.13                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 48:DP:17:TYR:O     | 48:DP:39:PHE:HB3   | 2.13                     | 0.49              |
| 2:A1:15:GLY:HA2    | 2:A1:47:ILE:HG21   | 1.95                     | 0.49              |
| 7:AA:13:G:H1'      | 7:AA:69:G:N2       | 2.28                     | 0.49              |
| 7:AA:78:A:H2'      | 7:AA:79:G:O4'      | 2.13                     | 0.49              |
| 8:AB:27:G:O2'      | 8:AB:28:A:O5'      | 2.31                     | 0.49              |
| 8:AB:132:G:O5'     | 8:AB:132:G:C8      | 2.66                     | 0.49              |
| 8:AB:139:U:C2      | 26:AT:1:MET:HB2    | 2.47                     | 0.49              |
| 8:AB:188:G:H1      | 8:AB:208:C:H42     | 1.59                     | 0.49              |
| 8:AB:290:U:H2'     | 8:AB:291:G:O4'     | 2.13                     | 0.49              |
| 8:AB:323:C:H5      | 11:AE:164:LEU:HD23 | 1.78                     | 0.49              |
| 8:AB:340:A:N7      | 8:AB:341:C:C2      | 2.81                     | 0.49              |
| 8:AB:538:A:N9      | 8:AB:539:G:C8      | 2.81                     | 0.49              |
| 8:AB:691:C:O4'     | 9:AC:42:ARG:NH1    | 2.46                     | 0.49              |
| 8:AB:707:G:C5'     | 8:AB:708:G:OP2     | 2.61                     | 0.49              |
| 8:AB:751:A:C5      | 8:AB:789:A:N1      | 2.81                     | 0.49              |
| 8:AB:794:A:C4      | 8:AB:795:C:C5      | 3.01                     | 0.49              |
| 8:AB:911:A:C2      | 8:AB:2277:G:N3     | 2.81                     | 0.49              |
| 8:AB:1168:G:N2     | 8:AB:1182:G:H1'    | 2.28                     | 0.49              |
| 8:AB:1242:U:C4     | 8:AB:1243:C:N4     | 2.81                     | 0.49              |
| 8:AB:1358:G:N7     | 8:AB:1371:G:C6     | 2.81                     | 0.49              |
| 8:AB:1378:A:C8     | 8:AB:1380:G:C5     | 3.00                     | 0.49              |
| 8:AB:1541:C:H2'    | 8:AB:1542:U:O4'    | 2.12                     | 0.49              |
| 8:AB:1548:A:C2     | 8:AB:1549:A:C5     | 3.00                     | 0.49              |
| 8:AB:1791:A:P      | 9:AC:211:ARG:HE    | 2.36                     | 0.49              |
| 8:AB:1827:U:O2'    | 8:AB:1970:A:N3     | 2.42                     | 0.49              |
| 8:AB:1840:G:C4     | 8:AB:1841:U:C6     | 3.01                     | 0.49              |
| 8:AB:1906:G:C8     | 8:AB:1906:G:C3'    | 2.96                     | 0.49              |
| 8:AB:1991:U:C2'    | 8:AB:1992:G:H5'    | 2.42                     | 0.49              |
| 8:AB:2048:G:H8     | 8:AB:2048:G:C5'    | 2.26                     | 0.49              |
| 8:AB:2070:A:H2'    | 8:AB:2071:A:H8     | 1.78                     | 0.49              |
| 8:AB:2082:A:N7     | 8:AB:2083:G:N7     | 2.60                     | 0.49              |
| 8:AB:2258:C:C5'    | 8:AB:2258:C:C6     | 2.95                     | 0.49              |
| 8:AB:2543:G:H2'    | 8:AB:2544:G:O4'    | 2.12                     | 0.49              |
| 8:AB:2701:U:H6     | 8:AB:2701:U:H3'    | 1.78                     | 0.49              |
| 8:AB:2760:C:C3'    | 8:AB:2761:A:H5''   | 2.43                     | 0.49              |
| 8:AB:2823:A:C6     | 8:AB:2824:C:C4     | 3.01                     | 0.49              |
| 8:AB:2824:C:N4     | 8:AB:2825:G:N7     | 2.60                     | 0.49              |
| 9:AC:116:GLN:HG3   | 9:AC:121:ALA:HB1   | 1.95                     | 0.49              |
| 11:AE:42:GLY:O     | 11:AE:43:THR:CB    | 2.61                     | 0.49              |
| 11:AE:167:VAL:CG1  | 11:AE:168:ASP:N    | 2.76                     | 0.49              |
| 15:AI:105:LEU:HD22 | 15:AI:128:ILE:HG22 | 1.95                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 16:AJ:85:LYS:HA    | 16:AJ:85:LYS:HZ3  | 1.76                     | 0.49              |
| 16:AJ:103:ILE:C    | 16:AJ:105:VAL:H   | 2.16                     | 0.49              |
| 18:AL:23:ILE:O     | 18:AL:23:ILE:HG22 | 2.13                     | 0.49              |
| 18:AL:77:ILE:O     | 18:AL:78:ARG:CB   | 2.61                     | 0.49              |
| 19:AM:57:VAL:O     | 19:AM:58:LYS:C    | 2.49                     | 0.49              |
| 20:AN:20:MET:O     | 20:AN:23:ASN:HB2  | 2.11                     | 0.49              |
| 21:AO:15:ARG:HA    | 21:AO:15:ARG:NE   | 2.26                     | 0.49              |
| 25:AS:9:HIS:O      | 25:AS:10:ALA:HB3  | 2.13                     | 0.49              |
| 27:AU:11:ILE:HA    | 27:AU:11:ILE:HD13 | 1.67                     | 0.49              |
| 27:AU:62:ALA:O     | 27:AU:63:ALA:HB3  | 2.13                     | 0.49              |
| 28:AV:26:PHE:CE1   | 28:AV:42:LEU:HD12 | 2.47                     | 0.49              |
| 28:AV:76:ASP:O     | 28:AV:90:ASP:N    | 2.40                     | 0.49              |
| 32:AZ:48:GLN:NE2   | 32:AZ:49:ARG:HD3  | 2.26                     | 0.49              |
| 33:BA:32:A:C6      | 33:BA:553:A:N1    | 2.80                     | 0.49              |
| 33:BA:150:U:H2'    | 33:BA:151:A:H8    | 1.78                     | 0.49              |
| 33:BA:328:C:H4'    | 33:BA:329:A:O5'   | 2.12                     | 0.49              |
| 33:BA:444:G:C6     | 33:BA:491:G:C6    | 3.01                     | 0.49              |
| 33:BA:451:A:C8     | 33:BA:452:A:N6    | 2.81                     | 0.49              |
| 33:BA:773:G:N2     | 33:BA:774:G:H1'   | 2.27                     | 0.49              |
| 33:BA:804:U:O2     | 33:BA:804:U:H2'   | 2.12                     | 0.49              |
| 33:BA:1105:A:O2'   | 33:BA:1106:G:H5'  | 2.13                     | 0.49              |
| 33:BA:1250:A:C5    | 33:BA:1287:A:C4   | 3.00                     | 0.49              |
| 33:BA:1290:G:C2    | 33:BA:1291:U:H1'  | 2.47                     | 0.49              |
| 33:BA:1468:A:O2'   | 33:BA:1469:C:H5'  | 2.13                     | 0.49              |
| 33:BA:1530:G:O2'   | 33:BA:1531:A:H5'  | 2.12                     | 0.49              |
| 34:BB:66:ILE:H     | 34:BB:88:GLN:HG2  | 1.77                     | 0.49              |
| 35:BC:27:GLU:O     | 35:BC:28:PHE:C    | 2.50                     | 0.49              |
| 35:BC:30:ASP:O     | 35:BC:33:ASP:HB3  | 2.13                     | 0.49              |
| 36:BD:27:ILE:O     | 36:BD:28:ASP:HB2  | 2.12                     | 0.49              |
| 36:BD:195:ASN:ND2  | 36:BD:195:ASN:N   | 2.52                     | 0.49              |
| 37:BE:68:ARG:O     | 37:BE:69:ASN:O    | 2.30                     | 0.49              |
| 38:BF:86:ARG:HH12  | 50:BR:63:TYR:HB2  | 1.78                     | 0.49              |
| 41:BI:115:VAL:HG13 | 41:BI:115:VAL:O   | 2.13                     | 0.49              |
| 42:BJ:5:ARG:HD3    | 42:BJ:5:ARG:N     | 2.28                     | 0.49              |
| 42:BJ:87:LEU:HD13  | 42:BJ:87:LEU:O    | 2.13                     | 0.49              |
| 43:BK:12:ARG:NH1   | 43:BK:12:ARG:CG   | 2.67                     | 0.49              |
| 43:BK:15:VAL:O     | 43:BK:16:SER:CB   | 2.60                     | 0.49              |
| 48:BP:20:VAL:HG21  | 48:BP:32:PHE:CB   | 2.41                     | 0.49              |
| 50:BR:44:THR:O     | 50:BR:45:GLY:C    | 2.52                     | 0.49              |
| 2:C1:29:LYS:CB     | 2:C1:30:PRO:CD    | 2.87                     | 0.49              |
| 3:C2:34:ARG:HD2    | 8:CB:467:G:OP2    | 2.11                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:C3:11:LYS:CD     | 18:CL:62:PRO:O    | 2.57                     | 0.49              |
| 7:CA:8:C:H5''      | 21:CO:10:ARG:NH1  | 2.28                     | 0.49              |
| 8:CB:332:A:C5      | 8:CB:335:C:C5     | 3.01                     | 0.49              |
| 8:CB:408:G:C8      | 8:CB:408:G:H3'    | 2.48                     | 0.49              |
| 8:CB:468:G:HO2'    | 8:CB:469:G:P      | 2.36                     | 0.49              |
| 8:CB:503:A:N3      | 8:CB:505:A:H2'    | 2.27                     | 0.49              |
| 8:CB:631:A:N3      | 18:CL:66:PHE:CD1  | 2.81                     | 0.49              |
| 8:CB:681:G:C4      | 8:CB:682:G:C8     | 3.00                     | 0.49              |
| 8:CB:704:G:N2      | 8:CB:726:G:C4     | 2.80                     | 0.49              |
| 8:CB:819:A:OP2     | 8:CB:1187:G:N2    | 2.45                     | 0.49              |
| 8:CB:975:A:H8      | 8:CB:975:A:H5'    | 1.78                     | 0.49              |
| 8:CB:1036:G:O6     | 8:CB:1120:G:C6    | 2.66                     | 0.49              |
| 8:CB:1168:G:N2     | 8:CB:1182:G:H1'   | 2.28                     | 0.49              |
| 8:CB:1218:G:C2     | 8:CB:1219:U:C2    | 3.00                     | 0.49              |
| 8:CB:1225:G:OP1    | 24:CR:90:ARG:NH1  | 2.46                     | 0.49              |
| 8:CB:1344:U:H5'    | 8:CB:1345:C:H5    | 1.78                     | 0.49              |
| 8:CB:1355:G:C5     | 8:CB:1377:G:N2    | 2.81                     | 0.49              |
| 8:CB:1401:G:C6     | 8:CB:1402:U:O4    | 2.66                     | 0.49              |
| 8:CB:1445:G:C2     | 8:CB:1547:C:N3    | 2.81                     | 0.49              |
| 8:CB:1455:G:C2     | 8:CB:1456:G:H1'   | 2.48                     | 0.49              |
| 8:CB:1522:A:H1'    | 8:CB:1524:G:C6    | 2.46                     | 0.49              |
| 8:CB:1648:U:C2     | 8:CB:2010:G:N2    | 2.80                     | 0.49              |
| 8:CB:1709:U:O2     | 8:CB:1709:U:H2'   | 2.11                     | 0.49              |
| 8:CB:1911:U:H6     | 8:CB:1911:U:O5'   | 1.96                     | 0.49              |
| 8:CB:1956:U:H2'    | 8:CB:1956:U:O2    | 2.11                     | 0.49              |
| 8:CB:1987:A:H2'    | 8:CB:1988:G:C8    | 2.47                     | 0.49              |
| 8:CB:2026:U:H2'    | 8:CB:2026:U:O2    | 2.13                     | 0.49              |
| 8:CB:2026:U:C2     | 8:CB:2027:G:C8    | 3.01                     | 0.49              |
| 8:CB:2051:A:C8     | 8:CB:2051:A:C5'   | 2.96                     | 0.49              |
| 8:CB:2078:C:N3     | 8:CB:2079:U:C5    | 2.80                     | 0.49              |
| 8:CB:2303:G:N1     | 8:CB:2304:G:C8    | 2.80                     | 0.49              |
| 8:CB:2442:C:C4     | 8:CB:2443:C:C5    | 3.01                     | 0.49              |
| 8:CB:2731:G:N1     | 8:CB:2732:G:O6    | 2.46                     | 0.49              |
| 8:CB:2810:A:N6     | 8:CB:2890:G:H1'   | 2.26                     | 0.49              |
| 8:CB:2821:A:H3'    | 8:CB:2821:A:H8    | 1.78                     | 0.49              |
| 9:CC:48:ILE:HG22   | 9:CC:49:THR:N     | 2.28                     | 0.49              |
| 10:CD:37:VAL:HG21  | 10:CD:46:ARG:HD3  | 1.94                     | 0.49              |
| 10:CD:187:LEU:HD23 | 10:CD:188:LEU:N   | 2.28                     | 0.49              |
| 11:CE:122:GLU:HG3  | 11:CE:189:THR:O   | 2.12                     | 0.49              |
| 13:CG:72:ASN:O     | 13:CG:76:ILE:HG13 | 2.12                     | 0.49              |
| 14:CH:4:ILE:O      | 14:CH:37:VAL:HG22 | 2.13                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:CI:6:ALA:O      | 15:CI:7:TYR:HB3    | 2.13                     | 0.49              |
| 18:CL:73:ILE:HG22  | 18:CL:75:ALA:N     | 2.28                     | 0.49              |
| 19:CM:6:ARG:O      | 19:CM:8:LYS:N      | 2.46                     | 0.49              |
| 21:CO:9:ARG:HG3    | 21:CO:13:ARG:HD3   | 1.95                     | 0.49              |
| 21:CO:17:LYS:C     | 21:CO:20:GLU:OE2   | 2.50                     | 0.49              |
| 27:CU:38:ILE:HG12  | 27:CU:62:ALA:HB1   | 1.95                     | 0.49              |
| 27:CU:45:GLN:C     | 27:CU:46:LYS:HD2   | 2.32                     | 0.49              |
| 31:CY:19:HIS:O     | 31:CY:20:LYS:C     | 2.51                     | 0.49              |
| 32:CZ:16:CYS:CA    | 32:CZ:21:VAL:HG21  | 2.39                     | 0.49              |
| 33:DA:247:G:C6     | 33:DA:248:C:C5     | 3.01                     | 0.49              |
| 33:DA:402:G:H4'    | 33:DA:620:C:O2     | 2.13                     | 0.49              |
| 33:DA:403:C:C2'    | 33:DA:404:G:H8     | 2.25                     | 0.49              |
| 33:DA:467:U:C6     | 33:DA:467:U:C3'    | 2.95                     | 0.49              |
| 33:DA:514:C:C4     | 33:DA:515:G:N7     | 2.80                     | 0.49              |
| 33:DA:590:U:P      | 40:DH:29:SER:HA    | 2.52                     | 0.49              |
| 33:DA:669:G:O2'    | 33:DA:670:G:H5'    | 2.12                     | 0.49              |
| 33:DA:782:A:C8     | 33:DA:783:C:C5     | 3.00                     | 0.49              |
| 33:DA:804:U:H5''   | 33:DA:805:C:OP2    | 2.12                     | 0.49              |
| 33:DA:828:U:C5     | 33:DA:829:G:C8     | 3.01                     | 0.49              |
| 33:DA:934:C:N4     | 33:DA:1345:U:C2    | 2.80                     | 0.49              |
| 33:DA:1382:C:H2'   | 33:DA:1383:C:C6    | 2.40                     | 0.49              |
| 33:DA:1459:G:N3    | 33:DA:1459:G:H2'   | 2.28                     | 0.49              |
| 33:DA:1520:C:H3'   | 33:DA:1520:C:C6    | 2.48                     | 0.49              |
| 34:DB:67:LEU:CD2   | 34:DB:90:PHE:HA    | 2.43                     | 0.49              |
| 34:DB:74:ALA:HB1   | 34:DB:206:ILE:HD13 | 1.95                     | 0.49              |
| 34:DB:134:LEU:HD23 | 34:DB:137:THR:HB   | 1.94                     | 0.49              |
| 38:DF:3:HIS:CE1    | 38:DF:65:GLU:OE2   | 2.66                     | 0.49              |
| 40:DH:93:LYS:O     | 40:DH:94:VAL:CB    | 2.59                     | 0.49              |
| 43:DK:62:ALA:O     | 43:DK:95:THR:HB    | 2.13                     | 0.49              |
| 45:DM:16:ILE:C     | 45:DM:18:LEU:N     | 2.65                     | 0.49              |
| 4:A3:51:LYS:O      | 4:A3:53:ASP:N      | 2.46                     | 0.49              |
| 7:AA:85:G:O2'      | 7:AA:86:G:H5'      | 2.13                     | 0.49              |
| 8:AB:96:C:OP1      | 30:AX:39:GLN:HA    | 2.13                     | 0.49              |
| 8:AB:220:G:C4      | 8:AB:427:U:C4      | 3.01                     | 0.49              |
| 8:AB:307:G:H3'     | 8:AB:307:G:C8      | 2.48                     | 0.49              |
| 8:AB:442:G:H1'     | 11:AE:44:ARG:HD2   | 1.94                     | 0.49              |
| 8:AB:464:U:C5      | 8:AB:465:G:N7      | 2.80                     | 0.49              |
| 8:AB:487:C:C2'     | 8:AB:488:G:H5'     | 2.42                     | 0.49              |
| 8:AB:692:C:O2      | 8:AB:1354:A:O2'    | 2.31                     | 0.49              |
| 8:AB:774:G:O3'     | 8:AB:777:G:H1'     | 2.12                     | 0.49              |
| 8:AB:795:C:HO2'    | 8:AB:796:C:P       | 2.36                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:807:U:C2'     | 8:AB:808:G:O5'     | 2.60                     | 0.49              |
| 8:AB:808:G:H8      | 8:AB:808:G:C5'     | 2.26                     | 0.49              |
| 8:AB:984:A:H8      | 8:AB:984:A:C5'     | 2.25                     | 0.49              |
| 8:AB:1034:G:C5     | 8:AB:1035:U:C5     | 3.01                     | 0.49              |
| 8:AB:1093:G:C6     | 8:AB:1094:U:H5     | 2.30                     | 0.49              |
| 8:AB:1283:G:C8     | 8:AB:1283:G:C3'    | 2.96                     | 0.49              |
| 8:AB:1347:A:O5'    | 8:AB:1347:A:H8     | 1.96                     | 0.49              |
| 8:AB:1401:G:H2'    | 8:AB:1402:U:C6     | 2.47                     | 0.49              |
| 8:AB:1478:G:C8     | 8:AB:1478:G:C5'    | 2.96                     | 0.49              |
| 8:AB:1672:A:N1     | 8:AB:1673:G:C5     | 2.81                     | 0.49              |
| 8:AB:1708:C:C2'    | 8:AB:1709:U:H6     | 2.23                     | 0.49              |
| 8:AB:1729:U:H3'    | 8:AB:1730:C:C4'    | 2.33                     | 0.49              |
| 8:AB:1794:A:O4'    | 8:AB:1900:A:C2     | 2.66                     | 0.49              |
| 8:AB:1839:G:C5     | 8:AB:1840:G:N7     | 2.80                     | 0.49              |
| 8:AB:2003:A:O5'    | 8:AB:2003:A:H8     | 1.96                     | 0.49              |
| 8:AB:2073:C:H1'    | 8:AB:2437:G:N2     | 2.28                     | 0.49              |
| 8:AB:2247:A:H8     | 8:AB:2247:A:O5'    | 1.95                     | 0.49              |
| 8:AB:2574:G:C4     | 8:AB:2575:C:C6     | 3.01                     | 0.49              |
| 8:AB:2891:U:C2'    | 8:AB:2892:G:H5'    | 2.43                     | 0.49              |
| 9:AC:80:LEU:N      | 9:AC:80:LEU:HD23   | 2.28                     | 0.49              |
| 9:AC:92:LEU:O      | 9:AC:93:VAL:CB     | 2.61                     | 0.49              |
| 9:AC:211:ARG:O     | 9:AC:213:ARG:N     | 2.45                     | 0.49              |
| 10:AD:49:GLN:HG2   | 10:AD:50:VAL:N     | 2.28                     | 0.49              |
| 11:AE:25:GLU:CA    | 11:AE:28:VAL:HG13  | 2.38                     | 0.49              |
| 11:AE:181:ILE:HG23 | 18:AL:12:SER:O     | 2.13                     | 0.49              |
| 19:AM:8:LYS:O      | 19:AM:9:PHE:C      | 2.51                     | 0.49              |
| 19:AM:129:THR:HG22 | 19:AM:131:VAL:HG13 | 1.93                     | 0.49              |
| 21:AO:77:ALA:O     | 21:AO:78:VAL:C     | 2.52                     | 0.49              |
| 23:AQ:57:ARG:NH2   | 23:AQ:92:LYS:HZ3   | 2.00                     | 0.49              |
| 23:AQ:73:ILE:HG13  | 23:AQ:77:LYS:HD2   | 1.94                     | 0.49              |
| 24:AR:33:VAL:O     | 24:AR:33:VAL:HG12  | 2.12                     | 0.49              |
| 25:AS:51:LEU:HA    | 25:AS:51:LEU:HD22  | 1.30                     | 0.49              |
| 28:AV:82:TYR:O     | 28:AV:82:TYR:CG    | 2.66                     | 0.49              |
| 30:AX:43:LEU:HA    | 30:AX:47:ARG:HB3   | 1.95                     | 0.49              |
| 33:BA:185:U:C6     | 33:BA:185:U:C3'    | 2.96                     | 0.49              |
| 33:BA:450:G:O6     | 33:BA:484:G:N1     | 2.45                     | 0.49              |
| 33:BA:494:G:H8     | 33:BA:494:G:O5'    | 1.95                     | 0.49              |
| 33:BA:509:A:N6     | 33:BA:510:A:C6     | 2.80                     | 0.49              |
| 33:BA:658:C:H1'    | 47:BO:21:THR:HG21  | 1.93                     | 0.49              |
| 33:BA:875:U:O2'    | 40:BH:14:ARG:NH1   | 2.46                     | 0.49              |
| 33:BA:1306:A:C4    | 33:BA:1332:A:C6    | 3.00                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:BB:51:GLU:O     | 34:BB:55:GLU:HG2  | 2.13                     | 0.49              |
| 34:BB:98:GLY:HA3   | 34:BB:102:ASN:HB3 | 1.94                     | 0.49              |
| 34:BB:186:VAL:HG23 | 34:BB:187:ASP:O   | 2.13                     | 0.49              |
| 35:BC:146:LYS:HE3  | 35:BC:202:PHE:HE2 | 1.78                     | 0.49              |
| 42:BJ:57:VAL:O     | 42:BJ:58:ASN:HB2  | 2.13                     | 0.49              |
| 42:BJ:59:LYS:HG2   | 42:BJ:60:ASP:OD1  | 2.13                     | 0.49              |
| 45:BM:18:LEU:O     | 45:BM:21:ILE:HG13 | 2.13                     | 0.49              |
| 5:C4:13:ASN:O      | 5:C4:29:ALA:HB3   | 2.11                     | 0.49              |
| 7:CA:46:A:C2'      | 7:CA:47:C:O5'     | 2.61                     | 0.49              |
| 8:CB:8:C:N4        | 8:CB:2895:G:H1    | 2.08                     | 0.49              |
| 8:CB:80:G:N1       | 8:CB:81:G:C5      | 2.81                     | 0.49              |
| 8:CB:84:A:HO2'     | 8:CB:99:U:H6      | 1.60                     | 0.49              |
| 8:CB:252:G:O2'     | 8:CB:253:C:H5'    | 2.12                     | 0.49              |
| 8:CB:260:G:C6      | 8:CB:261:G:N7     | 2.81                     | 0.49              |
| 8:CB:381:G:N1      | 8:CB:394:C:C5     | 2.79                     | 0.49              |
| 8:CB:398:C:P       | 32:CZ:49:ARG:CZ   | 3.01                     | 0.49              |
| 8:CB:415:A:C2      | 8:CB:2409:G:C2    | 3.00                     | 0.49              |
| 8:CB:417:C:H2'     | 8:CB:418:C:H6     | 1.77                     | 0.49              |
| 8:CB:538:A:C4      | 8:CB:556:A:N6     | 2.81                     | 0.49              |
| 8:CB:544:C:N3      | 8:CB:545:U:C2     | 2.81                     | 0.49              |
| 8:CB:567:U:O2      | 8:CB:568:U:H6     | 1.96                     | 0.49              |
| 8:CB:637:A:H4'     | 8:CB:638:G:O5'    | 2.12                     | 0.49              |
| 8:CB:849:A:H2'     | 8:CB:850:U:H6     | 1.75                     | 0.49              |
| 8:CB:871:U:O2'     | 8:CB:872:U:O4'    | 2.30                     | 0.49              |
| 8:CB:936:A:C6      | 8:CB:937:C:C4     | 3.01                     | 0.49              |
| 8:CB:945:A:C4      | 8:CB:2448:A:N3    | 2.81                     | 0.49              |
| 8:CB:973:A:O4'     | 8:CB:1188:U:C6    | 2.66                     | 0.49              |
| 8:CB:984:A:H8      | 8:CB:984:A:C5'    | 2.25                     | 0.49              |
| 8:CB:1038:G:C2     | 8:CB:1118:C:N3    | 2.81                     | 0.49              |
| 8:CB:1060:U:O4     | 15:CI:134:SER:HB3 | 2.13                     | 0.49              |
| 8:CB:1065:U:H2'    | 8:CB:1066:U:C2    | 2.48                     | 0.49              |
| 8:CB:1090:A:C2     | 8:CB:1102:C:C2    | 3.01                     | 0.49              |
| 8:CB:1098:A:N7     | 8:CB:1099:G:N7    | 2.61                     | 0.49              |
| 8:CB:1286:A:C2     | 8:CB:1329:U:C4    | 3.01                     | 0.49              |
| 8:CB:1350:C:C5     | 8:CB:1351:C:C5    | 3.01                     | 0.49              |
| 8:CB:1364:G:OP2    | 32:CZ:1:MET:HB2   | 2.13                     | 0.49              |
| 8:CB:1452:G:HO2'   | 8:CB:1453:A:P     | 2.36                     | 0.49              |
| 8:CB:1629:U:O2     | 8:CB:2698:U:H5''  | 2.13                     | 0.49              |
| 8:CB:1777:U:O2'    | 8:CB:1778:U:H5'   | 2.13                     | 0.49              |
| 8:CB:1786:A:C2     | 8:CB:1938:A:C5    | 3.01                     | 0.49              |
| 8:CB:1891:G:H2'    | 8:CB:1892:C:C6    | 2.48                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2147:A:O3'    | 8:CB:2148:G:H8     | 1.95                     | 0.49              |
| 8:CB:2454:G:H2'    | 8:CB:2455:G:H5'    | 1.95                     | 0.49              |
| 8:CB:2563:U:O2     | 8:CB:2566:A:C5     | 2.66                     | 0.49              |
| 8:CB:2727:A:O2'    | 17:CK:70:ARG:NH2   | 2.45                     | 0.49              |
| 10:CD:101:PHE:CB   | 10:CD:105:LYS:HD2  | 2.38                     | 0.49              |
| 10:CD:159:LYS:O    | 10:CD:161:MET:N    | 2.46                     | 0.49              |
| 11:CE:149:ILE:HG21 | 11:CE:186:VAL:HG13 | 1.93                     | 0.49              |
| 11:CE:172:ALA:C    | 11:CE:174:GLY:N    | 2.65                     | 0.49              |
| 12:CF:103:ILE:HA   | 12:CF:107:VAL:HG21 | 1.94                     | 0.49              |
| 19:CM:18:ARG:HD2   | 19:CM:18:ARG:H     | 1.78                     | 0.49              |
| 19:CM:96:ILE:HG22  | 19:CM:97:GLN:NE2   | 2.28                     | 0.49              |
| 21:CO:101:GLY:C    | 21:CO:103:VAL:N    | 2.66                     | 0.49              |
| 22:CP:38:ARG:HG3   | 22:CP:39:LEU:H     | 1.78                     | 0.49              |
| 23:CQ:26:ALA:O     | 23:CQ:30:VAL:HG22  | 2.13                     | 0.49              |
| 23:CQ:69:ARG:HB2   | 23:CQ:69:ARG:HH11  | 1.77                     | 0.49              |
| 24:CR:23:GLU:C     | 24:CR:24:LYS:HG2   | 2.33                     | 0.49              |
| 24:CR:51:VAL:O     | 24:CR:51:VAL:HG12  | 2.11                     | 0.49              |
| 25:CS:11:ARG:HG3   | 25:CS:11:ARG:O     | 2.12                     | 0.49              |
| 25:CS:17:VAL:O     | 25:CS:20:VAL:HG13  | 2.12                     | 0.49              |
| 25:CS:23:LEU:HB3   | 25:CS:35:ILE:HD11  | 1.95                     | 0.49              |
| 25:CS:73:LYS:HB2   | 25:CS:106:VAL:HG21 | 1.95                     | 0.49              |
| 30:CX:1:MET:O      | 30:CX:2:LYS:HG3    | 2.13                     | 0.49              |
| 30:CX:27:ASN:C     | 30:CX:29:ARG:N     | 2.67                     | 0.49              |
| 32:CZ:16:CYS:C     | 32:CZ:21:VAL:HG21  | 2.34                     | 0.49              |
| 33:DA:499:A:N1     | 33:DA:546:A:N3     | 2.61                     | 0.49              |
| 33:DA:560:A:N1     | 33:DA:566:G:C5'    | 2.76                     | 0.49              |
| 33:DA:646:G:O6     | 33:DA:647:C:N3     | 2.46                     | 0.49              |
| 33:DA:784:A:C6     | 33:DA:799:G:C2     | 3.01                     | 0.49              |
| 33:DA:785:G:N1     | 33:DA:798:U:C5     | 2.80                     | 0.49              |
| 33:DA:892:A:C2'    | 33:DA:893:C:C5'    | 2.91                     | 0.49              |
| 33:DA:894:G:C2'    | 33:DA:895:G:H5'    | 2.43                     | 0.49              |
| 33:DA:973:G:H3'    | 33:DA:974:A:H5''   | 1.95                     | 0.49              |
| 33:DA:981:U:C4     | 33:DA:982:U:C2     | 3.01                     | 0.49              |
| 33:DA:1100:C:C5'   | 33:DA:1101:A:OP2   | 2.61                     | 0.49              |
| 33:DA:1239:A:H2    | 33:DA:1297:G:N3    | 2.11                     | 0.49              |
| 33:DA:1385:G:C2'   | 33:DA:1386:G:H5'   | 2.43                     | 0.49              |
| 35:DC:33:ASP:O     | 35:DC:36:PHE:HB2   | 2.12                     | 0.49              |
| 35:DC:110:LEU:O    | 35:DC:110:LEU:HG   | 2.13                     | 0.49              |
| 35:DC:149:LYS:HB2  | 35:DC:168:ARG:HG3  | 1.95                     | 0.49              |
| 36:DD:14:GLU:HG2   | 36:DD:59:LYS:HB2   | 1.95                     | 0.49              |
| 41:DI:10:ARG:O     | 41:DI:80:HIS:HD2   | 1.96                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:DI:112:ARG:HH22 | 42:DJ:64:GLN:HE21 | 1.61                     | 0.49              |
| 45:DM:79:LEU:CD1   | 45:DM:87:GLY:HA2  | 2.43                     | 0.49              |
| 47:DO:32:THR:HG22  | 47:DO:33:ALA:N    | 2.28                     | 0.49              |
| 8:AB:64:A:H2       | 8:AB:65:U:H3      | 1.60                     | 0.48              |
| 8:AB:81:G:C2       | 8:AB:106:C:O2     | 2.65                     | 0.48              |
| 8:AB:155:A:H8      | 8:AB:155:A:O5'    | 1.95                     | 0.48              |
| 8:AB:219:A:H2'     | 8:AB:220:G:C8     | 2.48                     | 0.48              |
| 8:AB:288:U:H2'     | 8:AB:289:G:O4'    | 2.12                     | 0.48              |
| 8:AB:538:A:C5      | 8:AB:539:G:C8     | 3.01                     | 0.48              |
| 8:AB:769:U:H2'     | 8:AB:770:G:C8     | 2.48                     | 0.48              |
| 8:AB:926:G:H3'     | 8:AB:926:G:C8     | 2.48                     | 0.48              |
| 8:AB:1268:A:C6     | 8:AB:2013:A:N7    | 2.81                     | 0.48              |
| 8:AB:1353:A:C5     | 8:AB:1378:A:C5    | 3.01                     | 0.48              |
| 8:AB:1662:U:H2'    | 8:AB:1662:U:O2    | 2.12                     | 0.48              |
| 8:AB:1750:G:C5     | 8:AB:1751:U:C5    | 3.01                     | 0.48              |
| 8:AB:2016:U:C2     | 8:AB:2017:U:C6    | 3.01                     | 0.48              |
| 8:AB:2241:A:H2     | 8:AB:2242:G:C4    | 2.29                     | 0.48              |
| 8:AB:2309:A:H5''   | 8:AB:2310:C:OP2   | 2.12                     | 0.48              |
| 8:AB:2562:U:C2'    | 8:AB:2563:U:H5'   | 2.43                     | 0.48              |
| 8:AB:2627:G:H2'    | 8:AB:2628:C:C6    | 2.48                     | 0.48              |
| 8:AB:2751:G:N2     | 13:AG:2:ARG:N     | 2.59                     | 0.48              |
| 8:AB:2773:C:H2'    | 8:AB:2774:C:H6    | 1.77                     | 0.48              |
| 8:AB:2853:C:H2'    | 8:AB:2854:G:H8    | 1.74                     | 0.48              |
| 9:AC:155:ARG:HD3   | 9:AC:157:ALA:N    | 2.28                     | 0.48              |
| 9:AC:261:ARG:NE    | 9:AC:261:ARG:N    | 2.61                     | 0.48              |
| 10:AD:41:ALA:O     | 10:AD:42:ASN:HB3  | 2.13                     | 0.48              |
| 11:AE:164:LEU:HD21 | 11:AE:166:LYS:NZ  | 2.28                     | 0.48              |
| 14:AH:32:PRO:O     | 14:AH:33:GLN:CB   | 2.61                     | 0.48              |
| 15:AI:58:ILE:HA    | 15:AI:67:THR:O    | 2.13                     | 0.48              |
| 16:AJ:42:ALA:HA    | 23:AQ:66:ALA:CB   | 2.42                     | 0.48              |
| 17:AK:7:MET:SD     | 17:AK:20:MET:HB3  | 2.52                     | 0.48              |
| 17:AK:39:ILE:HA    | 17:AK:39:ILE:HD13 | 1.69                     | 0.48              |
| 17:AK:43:ILE:HG21  | 17:AK:53:LYS:C    | 2.33                     | 0.48              |
| 22:AP:29:VAL:O     | 22:AP:30:TRP:C    | 2.52                     | 0.48              |
| 24:AR:58:VAL:HG22  | 24:AR:59:ILE:H    | 1.78                     | 0.48              |
| 25:AS:65:ASP:O     | 25:AS:69:LEU:HD21 | 2.11                     | 0.48              |
| 29:AW:44:PHE:C     | 29:AW:44:PHE:HD1  | 2.16                     | 0.48              |
| 32:AZ:3:LYS:HG3    | 32:AZ:6:HIS:HB3   | 1.95                     | 0.48              |
| 33:BA:41:G:C6      | 33:BA:402:G:C6    | 3.01                     | 0.48              |
| 33:BA:429:U:H3     | 33:BA:431:A:H62   | 1.58                     | 0.48              |
| 33:BA:507:C:P      | 33:BA:508:U:H3'   | 2.53                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:621:A:H2'   | 33:BA:622:A:O4'    | 2.13                     | 0.48              |
| 33:BA:668:G:N2    | 47:BO:45:HIS:NE2   | 2.61                     | 0.48              |
| 33:BA:764:C:N4    | 33:BA:812:G:H1     | 2.10                     | 0.48              |
| 33:BA:1091:U:C2   | 33:BA:1095:U:C4    | 3.01                     | 0.48              |
| 33:BA:1152:A:N1   | 33:BA:1153:G:C5    | 2.81                     | 0.48              |
| 33:BA:1198:G:N7   | 33:BA:1199:U:N3    | 2.61                     | 0.48              |
| 33:BA:1250:A:C2   | 33:BA:1370:G:H1'   | 2.48                     | 0.48              |
| 33:BA:1306:A:N6   | 33:BA:1331:G:O4'   | 2.46                     | 0.48              |
| 33:BA:1477:U:H6   | 33:BA:1477:U:O5'   | 1.96                     | 0.48              |
| 34:BB:111:LYS:HA  | 34:BB:114:LYS:HE2  | 1.95                     | 0.48              |
| 36:BD:86:GLY:O    | 36:BD:90:LEU:HG    | 2.13                     | 0.48              |
| 39:BG:25:PHE:HD1  | 39:BG:100:MET:HB3  | 1.78                     | 0.48              |
| 39:BG:86:VAL:HA   | 39:BG:151:ALA:HA   | 1.94                     | 0.48              |
| 40:BH:112:ASP:HB2 | 40:BH:116:ARG:HH22 | 1.78                     | 0.48              |
| 42:BJ:57:VAL:HG13 | 42:BJ:58:ASN:N     | 2.28                     | 0.48              |
| 44:BL:21:PRO:N    | 44:BL:94:TYR:HH    | 2.10                     | 0.48              |
| 45:BM:10:ASP:CA   | 45:BM:44:ILE:HD13  | 2.36                     | 0.48              |
| 46:BN:19:TYR:CD1  | 46:BN:19:TYR:N     | 2.81                     | 0.48              |
| 2:C1:47:ILE:O     | 2:C1:48:TYR:HB2    | 2.13                     | 0.48              |
| 3:C2:31:LEU:H     | 3:C2:31:LEU:CD2    | 2.23                     | 0.48              |
| 4:C3:12:ARG:HB3   | 4:C3:13:PHE:CE2    | 2.48                     | 0.48              |
| 7:CA:16:G:O2'     | 7:CA:17:C:H5'      | 2.13                     | 0.48              |
| 7:CA:114:C:H2'    | 7:CA:115:A:O4'     | 2.12                     | 0.48              |
| 8:CB:73:A:H2'     | 8:CB:74:A:OP2      | 2.13                     | 0.48              |
| 8:CB:324:A:C8     | 8:CB:324:A:C3'     | 2.96                     | 0.48              |
| 8:CB:376:G:H2'    | 8:CB:377:G:H8      | 1.75                     | 0.48              |
| 8:CB:590:A:C5     | 8:CB:591:U:C4      | 3.01                     | 0.48              |
| 8:CB:906:U:H4'    | 8:CB:906:U:OP1     | 2.13                     | 0.48              |
| 8:CB:1031:G:H8    | 8:CB:1031:G:O5'    | 1.95                     | 0.48              |
| 8:CB:1092:C:C2'   | 8:CB:1093:G:H8     | 2.26                     | 0.48              |
| 8:CB:1140:C:H1'   | 8:CB:1143:A:O2'    | 2.13                     | 0.48              |
| 8:CB:1188:U:H2'   | 8:CB:1189:A:H5'    | 1.95                     | 0.48              |
| 8:CB:1369:G:H1'   | 8:CB:1809:A:H61    | 1.78                     | 0.48              |
| 8:CB:1586:A:C8    | 8:CB:1586:A:C3'    | 2.96                     | 0.48              |
| 8:CB:1784:A:H5''  | 8:CB:1785:A:OP1    | 2.12                     | 0.48              |
| 8:CB:1801:A:C8    | 8:CB:2203:U:H2'    | 2.48                     | 0.48              |
| 8:CB:1897:G:H2'   | 8:CB:1898:U:O5'    | 2.13                     | 0.48              |
| 8:CB:1933:G:H2'   | 8:CB:1934:C:H5'    | 1.93                     | 0.48              |
| 8:CB:2020:A:C2    | 8:CB:2035:G:N1     | 2.81                     | 0.48              |
| 8:CB:2085:U:OP1   | 9:CC:256:THR:HG21  | 2.13                     | 0.48              |
| 8:CB:2306:C:O2    | 12:CF:149:ARG:HD2  | 2.13                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2391:G:N2     | 8:CB:2424:C:C2     | 2.81                     | 0.48              |
| 8:CB:2435:A:C2'    | 8:CB:2436:G:O5'    | 2.61                     | 0.48              |
| 8:CB:2697:G:C2     | 8:CB:2711:A:C2     | 3.01                     | 0.48              |
| 8:CB:2724:U:H6     | 8:CB:2724:U:H5''   | 1.77                     | 0.48              |
| 9:CC:163:ILE:HG22  | 9:CC:172:THR:CG2   | 2.40                     | 0.48              |
| 9:CC:180:MET:O     | 9:CC:264:LYS:NZ    | 2.43                     | 0.48              |
| 9:CC:265:PHE:O     | 9:CC:266:ILE:O     | 2.31                     | 0.48              |
| 11:CE:148:ILE:O    | 11:CE:148:ILE:HG13 | 2.13                     | 0.48              |
| 12:CF:33:ILE:O     | 12:CF:34:THR:CB    | 2.61                     | 0.48              |
| 13:CG:8:VAL:HG11   | 13:CG:71:LEU:HD12  | 1.95                     | 0.48              |
| 16:CJ:4:PHE:CZ     | 16:CJ:6:ALA:CA     | 2.95                     | 0.48              |
| 16:CJ:17:VAL:HG22  | 16:CJ:55:ILE:HB    | 1.94                     | 0.48              |
| 16:CJ:32:LEU:CD2   | 16:CJ:122:LEU:HD21 | 2.43                     | 0.48              |
| 18:CL:33:ARG:HG2   | 24:CR:85:LYS:NZ    | 2.28                     | 0.48              |
| 20:CN:52:ILE:O     | 20:CN:55:ALA:HB3   | 2.13                     | 0.48              |
| 21:CO:26:LEU:N     | 21:CO:92:PHE:O     | 2.46                     | 0.48              |
| 28:CV:62:THR:CA    | 28:CV:70:ILE:HD11  | 2.43                     | 0.48              |
| 29:CW:25:PHE:HD2   | 29:CW:25:PHE:O     | 1.96                     | 0.48              |
| 30:CX:15:ASN:HD21  | 30:CX:50:VAL:HG12  | 1.78                     | 0.48              |
| 30:CX:54:LYS:HA    | 30:CX:57:LEU:HD23  | 1.95                     | 0.48              |
| 33:DA:452:A:N6     | 33:DA:480:U:C2     | 2.81                     | 0.48              |
| 33:DA:499:A:N7     | 33:DA:547:A:N7     | 2.60                     | 0.48              |
| 33:DA:625:U:H4'    | 48:DP:16:PHE:CD2   | 2.48                     | 0.48              |
| 33:DA:673:A:H1'    | 50:DR:63:TYR:CD1   | 2.48                     | 0.48              |
| 33:DA:900:A:O2'    | 33:DA:901:A:H5'    | 2.12                     | 0.48              |
| 33:DA:927:G:H21    | 33:DA:1391:U:H1'   | 1.78                     | 0.48              |
| 33:DA:988:G:C6     | 33:DA:989:U:C5     | 3.01                     | 0.48              |
| 33:DA:1008:U:H6    | 33:DA:1008:U:H3'   | 1.78                     | 0.48              |
| 33:DA:1184:G:H2'   | 33:DA:1184:G:N3    | 2.26                     | 0.48              |
| 33:DA:1186:G:C6    | 33:DA:1187:G:C8    | 3.01                     | 0.48              |
| 33:DA:1352:C:H2'   | 33:DA:1353:G:H8    | 1.78                     | 0.48              |
| 33:DA:1402:C:H2'   | 33:DA:1403:C:H5'   | 1.95                     | 0.48              |
| 33:DA:1492:A:H2'   | 33:DA:1493:A:H5'   | 1.95                     | 0.48              |
| 34:DB:213:LEU:O    | 34:DB:216:VAL:HG22 | 2.13                     | 0.48              |
| 36:DD:2:ARG:NH2    | 36:DD:114:ARG:CD   | 2.76                     | 0.48              |
| 37:DE:64:GLU:HG2   | 37:DE:68:ARG:CZ    | 2.43                     | 0.48              |
| 40:DH:102:VAL:HG23 | 40:DH:125:ILE:HB   | 1.94                     | 0.48              |
| 41:DI:80:HIS:HA    | 41:DI:83:THR:HG22  | 1.95                     | 0.48              |
| 43:DK:92:ARG:NH1   | 43:DK:92:ARG:CG    | 2.60                     | 0.48              |
| 45:DM:8:ILE:O      | 45:DM:8:ILE:HG13   | 2.12                     | 0.48              |
| 45:DM:82:LEU:HD11  | 51:DS:64:GLU:HB2   | 1.93                     | 0.48              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 48:DP:16:PHE:CE1 | 48:DP:38:PHE:HB2   | 2.48                     | 0.48              |
| 3:A2:13:ASN:OD1  | 3:A2:18:PHE:CD2    | 2.66                     | 0.48              |
| 5:A4:30:GLU:HG3  | 5:A4:32:LYS:N      | 2.27                     | 0.48              |
| 7:AA:27:C:C4     | 7:AA:28:C:N4       | 2.81                     | 0.48              |
| 8:AB:66:C:C2'    | 8:AB:67:U:H5'      | 2.43                     | 0.48              |
| 8:AB:263:G:H21   | 8:AB:264:C:H1'     | 1.75                     | 0.48              |
| 8:AB:448:U:H3'   | 8:AB:449:A:C5'     | 2.43                     | 0.48              |
| 8:AB:449:A:C2'   | 8:AB:450:G:H5'     | 2.43                     | 0.48              |
| 8:AB:575:A:O2'   | 8:AB:576:U:H5''    | 2.13                     | 0.48              |
| 8:AB:615:U:C3'   | 8:AB:616:A:H5'     | 2.44                     | 0.48              |
| 8:AB:671:C:N4    | 8:AB:809:G:H1      | 2.11                     | 0.48              |
| 8:AB:834:G:C2    | 8:AB:835:C:C2      | 3.02                     | 0.48              |
| 8:AB:966:G:C6    | 8:AB:967:U:C2      | 3.00                     | 0.48              |
| 8:AB:1275:A:C2'  | 8:AB:1276:A:O5'    | 2.61                     | 0.48              |
| 8:AB:1345:C:C4   | 8:AB:1346:G:N7     | 2.82                     | 0.48              |
| 8:AB:1581:G:C6   | 8:AB:1582:C:C5     | 3.01                     | 0.48              |
| 8:AB:1620:G:C6   | 8:AB:1621:U:N3     | 2.81                     | 0.48              |
| 8:AB:1655:A:C8   | 8:AB:1656:C:C6     | 3.02                     | 0.48              |
| 8:AB:1656:C:H42  | 8:AB:2004:G:H1     | 1.61                     | 0.48              |
| 8:AB:1930:G:N2   | 8:AB:1969:A:OP2    | 2.44                     | 0.48              |
| 8:AB:1955:U:C5   | 8:AB:2552:U:O2     | 2.66                     | 0.48              |
| 8:AB:2232:C:H2'  | 8:AB:2232:C:O2     | 2.12                     | 0.48              |
| 8:AB:2331:G:H2'  | 8:AB:2332:C:O4'    | 2.13                     | 0.48              |
| 8:AB:2454:G:C4   | 8:AB:2455:G:C8     | 3.00                     | 0.48              |
| 8:AB:2535:G:H5'' | 8:AB:2535:G:C8     | 2.48                     | 0.48              |
| 8:AB:2698:U:H3   | 8:AB:2699:C:N4     | 2.10                     | 0.48              |
| 8:AB:2701:U:H5   | 8:AB:2703:C:OP2    | 1.96                     | 0.48              |
| 8:AB:2808:G:N3   | 8:AB:2891:U:C2     | 2.81                     | 0.48              |
| 10:AD:124:ARG:C  | 10:AD:160:LYS:HG2  | 2.33                     | 0.48              |
| 11:AE:23:PHE:O   | 11:AE:24:ASN:C     | 2.50                     | 0.48              |
| 12:AF:5:ASP:HA   | 12:AF:8:LYS:HB2    | 1.96                     | 0.48              |
| 17:AK:66:LYS:HG3 | 17:AK:81:GLY:H     | 1.77                     | 0.48              |
| 17:AK:113:MET:O  | 17:AK:115:ILE:N    | 2.45                     | 0.48              |
| 18:AL:40:SER:N   | 18:AL:41:ARG:HH21  | 2.12                     | 0.48              |
| 18:AL:58:TYR:O   | 18:AL:61:LEU:HD22  | 2.13                     | 0.48              |
| 18:AL:96:LYS:N   | 18:AL:100:ILE:HD12 | 2.26                     | 0.48              |
| 19:AM:5:LYS:O    | 19:AM:5:LYS:HG2    | 2.11                     | 0.48              |
| 23:AQ:68:ALA:O   | 23:AQ:73:ILE:O     | 2.31                     | 0.48              |
| 27:AU:78:LYS:HE3 | 27:AU:98:ASN:ND2   | 2.28                     | 0.48              |
| 28:AV:23:ALA:O   | 28:AV:24:ASN:HB2   | 2.12                     | 0.48              |
| 28:AV:51:GLN:HB2 | 28:AV:57:TYR:OH    | 2.12                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:16:A:C2     | 33:BA:17:U:C6      | 3.01                     | 0.48              |
| 33:BA:119:A:N7    | 33:BA:240:G:C6     | 2.81                     | 0.48              |
| 33:BA:410:G:OP2   | 36:BD:24:VAL:HG11  | 2.13                     | 0.48              |
| 33:BA:527:G:C2    | 33:BA:528:C:C6     | 3.00                     | 0.48              |
| 33:BA:731:G:H2'   | 33:BA:732:C:O4'    | 2.13                     | 0.48              |
| 33:BA:892:A:N1    | 33:BA:907:A:N3     | 2.60                     | 0.48              |
| 33:BA:922:G:N2    | 33:BA:1398:A:H1'   | 2.28                     | 0.48              |
| 33:BA:948:C:H2'   | 33:BA:949:A:C8     | 2.42                     | 0.48              |
| 33:BA:981:U:C4    | 33:BA:982:U:O2     | 2.65                     | 0.48              |
| 33:BA:1077:G:H5'  | 33:BA:1077:G:H8    | 1.78                     | 0.48              |
| 33:BA:1107:C:C2'  | 33:BA:1108:G:O5'   | 2.61                     | 0.48              |
| 33:BA:1220:G:H4'  | 51:BS:35:ARG:HD3   | 1.95                     | 0.48              |
| 33:BA:1225:A:H4'  | 51:BS:77:ARG:NH2   | 2.28                     | 0.48              |
| 33:BA:1260:G:O5'  | 33:BA:1284:C:H4'   | 2.12                     | 0.48              |
| 33:BA:1463:U:O5'  | 33:BA:1463:U:H6    | 1.96                     | 0.48              |
| 33:BA:1490:U:H5'' | 33:BA:1490:U:C6    | 2.46                     | 0.48              |
| 33:BA:1520:C:H2'  | 33:BA:1521:C:C6    | 2.47                     | 0.48              |
| 33:BA:1528:U:O2'  | 33:BA:1529:G:OP2   | 2.28                     | 0.48              |
| 34:BB:67:LEU:CD1  | 34:BB:157:PRO:HG2  | 2.44                     | 0.48              |
| 34:BB:88:GLN:O    | 34:BB:89:PHE:CG    | 2.66                     | 0.48              |
| 34:BB:131:LYS:HG2 | 34:BB:132:GLU:N    | 2.27                     | 0.48              |
| 37:BE:45:VAL:O    | 37:BE:70:MET:HA    | 2.13                     | 0.48              |
| 37:BE:112:ALA:O   | 37:BE:116:VAL:HG22 | 2.12                     | 0.48              |
| 42:BJ:73:LEU:O    | 42:BJ:74:VAL:HB    | 2.13                     | 0.48              |
| 44:BL:49:ARG:HH12 | 44:BL:88:ASP:HB3   | 1.68                     | 0.48              |
| 51:BS:23:GLU:HG3  | 51:BS:24:SER:N     | 2.28                     | 0.48              |
| 51:BS:43:MET:HB2  | 51:BS:61:VAL:HG11  | 1.95                     | 0.48              |
| 52:BT:8:LYS:O     | 52:BT:11:ILE:N     | 2.46                     | 0.48              |
| 1:C0:27:LEU:H     | 1:C0:38:LEU:HD11   | 1.77                     | 0.48              |
| 2:C1:18:HIS:CE1   | 8:CB:2399:G:O2'    | 2.66                     | 0.48              |
| 4:C3:46:LYS:CD    | 4:C3:47:ALA:H      | 2.24                     | 0.48              |
| 8:CB:133:U:H3'    | 8:CB:133:U:C6      | 2.48                     | 0.48              |
| 8:CB:134:G:N3     | 8:CB:146:A:C2      | 2.80                     | 0.48              |
| 8:CB:223:A:N6     | 8:CB:422:A:C6      | 2.80                     | 0.48              |
| 8:CB:381:G:C5     | 8:CB:382:A:C8      | 3.01                     | 0.48              |
| 8:CB:486:C:C2     | 8:CB:495:G:N2      | 2.81                     | 0.48              |
| 8:CB:501:A:N6     | 8:CB:502:A:C6      | 2.81                     | 0.48              |
| 8:CB:574:A:N1     | 10:CD:150:GLN:OE1  | 2.46                     | 0.48              |
| 8:CB:672:C:O2     | 8:CB:672:C:C2'     | 2.61                     | 0.48              |
| 8:CB:820:A:H2'    | 8:CB:821:A:O4'     | 2.13                     | 0.48              |
| 8:CB:1045:C:O2    | 8:CB:1047:G:C2     | 2.66                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1076:C:C2    | 8:CB:1077:A:C8     | 3.01                     | 0.48              |
| 8:CB:1076:C:O2'   | 8:CB:1077:A:H5'    | 2.13                     | 0.48              |
| 8:CB:1095:A:C2    | 8:CB:1096:A:C6     | 3.01                     | 0.48              |
| 8:CB:1127:A:C2    | 8:CB:2518:A:C4     | 3.01                     | 0.48              |
| 8:CB:1286:A:C2    | 8:CB:1329:U:C6     | 3.01                     | 0.48              |
| 8:CB:1304:A:H2'   | 8:CB:1305:C:O4'    | 2.13                     | 0.48              |
| 8:CB:1383:A:C2    | 8:CB:1384:A:C5     | 3.01                     | 0.48              |
| 8:CB:1609:A:C2    | 8:CB:1616:A:N7     | 2.81                     | 0.48              |
| 8:CB:1788:C:C4    | 8:CB:1789:A:C8     | 3.01                     | 0.48              |
| 8:CB:1945:G:C4    | 8:CB:1946:U:C5     | 3.02                     | 0.48              |
| 8:CB:1998:A:C8    | 8:CB:1998:A:H3'    | 2.48                     | 0.48              |
| 8:CB:2097:A:C5    | 8:CB:2098:U:C5     | 3.01                     | 0.48              |
| 8:CB:2232:C:O2    | 8:CB:2232:C:H2'    | 2.12                     | 0.48              |
| 8:CB:2341:G:C8    | 8:CB:2342:C:C5     | 3.01                     | 0.48              |
| 8:CB:2378:A:C8    | 8:CB:2378:A:C3'    | 2.95                     | 0.48              |
| 8:CB:2391:G:C2    | 8:CB:2424:C:C6     | 3.01                     | 0.48              |
| 8:CB:2453:A:C2    | 8:CB:2504:U:O2     | 2.66                     | 0.48              |
| 8:CB:2488:G:N3    | 8:CB:2489:U:C6     | 2.81                     | 0.48              |
| 8:CB:2589:A:C2    | 8:CB:2590:A:C4     | 3.02                     | 0.48              |
| 8:CB:2720:U:C2    | 8:CB:2872:A:N7     | 2.81                     | 0.48              |
| 8:CB:2800:A:H2'   | 8:CB:2801:G:C1'    | 2.43                     | 0.48              |
| 9:CC:125:PRO:HA   | 9:CC:192:GLY:HA2   | 1.95                     | 0.48              |
| 9:CC:140:VAL:HG23 | 9:CC:193:GLU:OE1   | 2.14                     | 0.48              |
| 9:CC:153:LEU:HD13 | 9:CC:161:VAL:HG22  | 1.95                     | 0.48              |
| 10:CD:18:ASP:O    | 17:CK:73:ASP:HA    | 2.13                     | 0.48              |
| 10:CD:31:ALA:O    | 10:CD:32:ASN:ND2   | 2.46                     | 0.48              |
| 10:CD:37:VAL:HG22 | 10:CD:42:ASN:CB    | 2.42                     | 0.48              |
| 12:CF:37:MET:CE   | 12:CF:148:VAL:HG12 | 2.43                     | 0.48              |
| 12:CF:98:PHE:CD2  | 12:CF:98:PHE:C     | 2.86                     | 0.48              |
| 14:CH:117:LEU:H   | 14:CH:130:VAL:HG13 | 1.77                     | 0.48              |
| 15:CI:77:VAL:CA   | 15:CI:80:LYS:HB2   | 2.39                     | 0.48              |
| 16:CJ:113:PRO:O   | 16:CJ:114:LEU:HB3  | 2.13                     | 0.48              |
| 17:CK:11:ALA:O    | 17:CK:99:ILE:HG23  | 2.13                     | 0.48              |
| 17:CK:113:MET:SD  | 17:CK:113:MET:N    | 2.86                     | 0.48              |
| 19:CM:50:ARG:CA   | 19:CM:50:ARG:NE    | 2.76                     | 0.48              |
| 21:CO:27:VAL:HG21 | 21:CO:38:GLN:CA    | 2.43                     | 0.48              |
| 21:CO:90:VAL:HA   | 21:CO:116:GLN:HB2  | 1.95                     | 0.48              |
| 24:CR:11:GLN:HB3  | 24:CR:21:ARG:NH1   | 2.28                     | 0.48              |
| 24:CR:39:LEU:C    | 24:CR:41:ILE:H     | 2.16                     | 0.48              |
| 25:CS:40:ASN:O    | 25:CS:41:LYS:HG2   | 2.13                     | 0.48              |
| 26:CT:10:VAL:HG23 | 26:CT:11:LEU:N     | 2.28                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:CV:80:HIS:O     | 28:CV:81:PRO:C     | 2.51                     | 0.48              |
| 29:CW:39:GLN:HE21  | 29:CW:66:VAL:HG23  | 1.78                     | 0.48              |
| 30:CX:22:LEU:HB3   | 30:CX:25:GLN:OE1   | 2.13                     | 0.48              |
| 30:CX:44:LYS:O     | 30:CX:44:LYS:CG    | 2.60                     | 0.48              |
| 33:DA:218:U:H2'    | 33:DA:219:U:O4'    | 2.12                     | 0.48              |
| 33:DA:323:U:H3'    | 33:DA:323:U:C6     | 2.48                     | 0.48              |
| 33:DA:393:A:C6     | 33:DA:394:G:C8     | 3.02                     | 0.48              |
| 33:DA:430:A:O2'    | 33:DA:431:A:C5'    | 2.58                     | 0.48              |
| 33:DA:544:G:C4     | 33:DA:545:C:C5     | 3.01                     | 0.48              |
| 33:DA:597:G:N2     | 40:DH:85:TYR:HE2   | 2.11                     | 0.48              |
| 33:DA:703:G:O2'    | 33:DA:704:A:P      | 2.71                     | 0.48              |
| 33:DA:1067:A:O5'   | 33:DA:1067:A:H2'   | 2.14                     | 0.48              |
| 33:DA:1118:U:OP2   | 33:DA:1118:U:H3'   | 2.13                     | 0.48              |
| 33:DA:1259:C:C2    | 33:DA:1260:G:H1'   | 2.48                     | 0.48              |
| 33:DA:1533:C:C6    | 33:DA:1533:C:C3'   | 2.96                     | 0.48              |
| 34:DB:23:ASN:O     | 34:DB:25:LYS:N     | 2.46                     | 0.48              |
| 35:DC:50:SER:CB    | 35:DC:114:LEU:HD11 | 2.39                     | 0.48              |
| 35:DC:121:SER:O    | 35:DC:125:ARG:HG3  | 2.13                     | 0.48              |
| 35:DC:190:THR:HG22 | 35:DC:191:THR:OG1  | 2.11                     | 0.48              |
| 36:DD:19:PHE:HE1   | 36:DD:103:ARG:NH2  | 2.10                     | 0.48              |
| 36:DD:25:ARG:HB2   | 36:DD:25:ARG:NH1   | 2.28                     | 0.48              |
| 39:DG:15:PRO:HD3   | 39:DG:23:ALA:CB    | 2.42                     | 0.48              |
| 39:DG:87:PRO:HB3   | 39:DG:144:ALA:CB   | 2.44                     | 0.48              |
| 40:DH:85:TYR:N     | 40:DH:85:TYR:CD1   | 2.80                     | 0.48              |
| 41:DI:33:SER:O     | 41:DI:36:GLN:HB2   | 2.12                     | 0.48              |
| 42:DJ:66:GLU:CB    | 46:DN:98:ALA:HB2   | 2.41                     | 0.48              |
| 42:DJ:83:THR:C     | 42:DJ:85:ASP:N     | 2.66                     | 0.48              |
| 43:DK:73:VAL:O     | 43:DK:78:ILE:HG12  | 2.13                     | 0.48              |
| 45:DM:23:GLY:HA2   | 45:DM:68:LEU:CD1   | 2.42                     | 0.48              |
| 45:DM:43:LYS:O     | 45:DM:46:GLU:HG3   | 2.13                     | 0.48              |
| 46:DN:17:ASP:OD1   | 46:DN:17:ASP:N     | 2.47                     | 0.48              |
| 51:DS:38:THR:OG1   | 51:DS:69:LYS:HD3   | 2.12                     | 0.48              |
| 53:DU:16:ARG:O     | 53:DU:17:ARG:C     | 2.51                     | 0.48              |
| 1:A0:52:LYS:HD2    | 1:A0:52:LYS:H      | 1.74                     | 0.48              |
| 4:A3:51:LYS:HD2    | 18:AL:59:ARG:NH2   | 2.28                     | 0.48              |
| 7:AA:84:G:N2       | 7:AA:93:C:O2       | 2.46                     | 0.48              |
| 7:AA:112:G:C6      | 7:AA:113:C:C4      | 3.01                     | 0.48              |
| 8:AB:45:G:H5''     | 8:AB:46:G:H5'      | 1.95                     | 0.48              |
| 8:AB:100:U:O2      | 8:AB:101:A:C5      | 2.65                     | 0.48              |
| 8:AB:111:A:C6      | 8:AB:112:U:C4      | 3.01                     | 0.48              |
| 8:AB:227:A:O5'     | 8:AB:227:A:H2'     | 2.13                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:429:A:C2      | 8:AB:430:A:C6     | 3.01                     | 0.48              |
| 8:AB:483:A:C8      | 27:AU:43:LYS:HD3  | 2.48                     | 0.48              |
| 8:AB:533:G:N2      | 23:AQ:44:TYR:CE2  | 2.77                     | 0.48              |
| 8:AB:689:A:C2      | 8:AB:690:G:C5     | 3.01                     | 0.48              |
| 8:AB:819:A:C2      | 8:AB:820:A:C4     | 3.01                     | 0.48              |
| 8:AB:942:G:C5'     | 18:AL:40:SER:CB   | 2.90                     | 0.48              |
| 8:AB:1030:C:H42    | 8:AB:1124:G:H1    | 1.61                     | 0.48              |
| 8:AB:1125:G:H3'    | 8:AB:1126:A:C8    | 2.47                     | 0.48              |
| 8:AB:1228:G:C4     | 8:AB:1229:C:C5    | 3.02                     | 0.48              |
| 8:AB:1251:C:OP2    | 23:AQ:5:ARG:NH2   | 2.46                     | 0.48              |
| 8:AB:1433:A:C2     | 8:AB:1434:A:C6    | 3.00                     | 0.48              |
| 8:AB:1526:C:O2'    | 8:AB:1527:G:H5'   | 2.13                     | 0.48              |
| 8:AB:1808:A:H3'    | 8:AB:1809:A:C8    | 2.45                     | 0.48              |
| 8:AB:1809:A:C6     | 8:AB:1810:A:N6    | 2.81                     | 0.48              |
| 8:AB:1866:A:C2     | 8:AB:1867:G:H1'   | 2.47                     | 0.48              |
| 8:AB:1926:U:H2'    | 8:AB:1928:A:N7    | 2.28                     | 0.48              |
| 8:AB:1957:C:O2'    | 8:AB:1985:C:H1'   | 2.13                     | 0.48              |
| 8:AB:2187:U:H3'    | 8:AB:2188:U:H6    | 1.78                     | 0.48              |
| 8:AB:2282:G:C4     | 8:AB:2425:A:N1    | 2.82                     | 0.48              |
| 8:AB:2345:G:C4     | 8:AB:2381:A:N3    | 2.82                     | 0.48              |
| 8:AB:2380:C:O2'    | 8:AB:2381:A:H5'   | 2.12                     | 0.48              |
| 8:AB:2396:G:C5'    | 8:AB:2396:G:H8    | 2.26                     | 0.48              |
| 8:AB:2400:G:C6     | 8:AB:2401:U:C4    | 3.01                     | 0.48              |
| 8:AB:2443:C:H2'    | 8:AB:2444:G:C8    | 2.48                     | 0.48              |
| 8:AB:2573:C:P      | 55:AB:4666:HOH:O  | 2.71                     | 0.48              |
| 8:AB:2607:G:H2'    | 8:AB:2608:G:O4'   | 2.12                     | 0.48              |
| 8:AB:2656:U:C4     | 8:AB:2664:G:N2    | 2.81                     | 0.48              |
| 9:AC:21:PRO:C      | 9:AC:202:ARG:CZ   | 2.82                     | 0.48              |
| 9:AC:51:ARG:HD3    | 9:AC:51:ARG:C     | 2.31                     | 0.48              |
| 9:AC:135:PRO:O     | 9:AC:165:ALA:O    | 2.32                     | 0.48              |
| 9:AC:222:THR:OG1   | 9:AC:223:ALA:N    | 2.46                     | 0.48              |
| 10:AD:27:ILE:HG12  | 10:AD:28:GLU:N    | 2.28                     | 0.48              |
| 11:AE:123:LYS:HD2  | 11:AE:123:LYS:N   | 2.28                     | 0.48              |
| 12:AF:98:PHE:C     | 12:AF:98:PHE:CD2  | 2.86                     | 0.48              |
| 12:AF:176:PHE:O    | 12:AF:177:ARG:HB3 | 2.13                     | 0.48              |
| 13:AG:156:TYR:CB   | 13:AG:157:LYS:HE3 | 2.33                     | 0.48              |
| 14:AH:89:LYS:CE    | 14:AH:123:ARG:HD3 | 2.43                     | 0.48              |
| 17:AK:75:SER:HA    | 22:AP:76:HIS:HE2  | 1.78                     | 0.48              |
| 18:AL:103:ILE:HD13 | 18:AL:105:ILE:CD1 | 2.43                     | 0.48              |
| 19:AM:86:LYS:O     | 19:AM:88:ASN:ND2  | 2.47                     | 0.48              |
| 22:AP:65:ASN:H     | 22:AP:71:ARG:HA   | 1.78                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:AP:71:ARG:NH2  | 22:AP:102:ARG:CA   | 2.77                     | 0.48              |
| 23:AQ:93:ILE:HG22 | 23:AQ:94:LEU:HD13  | 1.95                     | 0.48              |
| 23:AQ:103:VAL:HA  | 23:AQ:106:THR:HB   | 1.96                     | 0.48              |
| 24:AR:69:GLY:HA2  | 24:AR:96:VAL:HA    | 1.95                     | 0.48              |
| 27:AU:3:LYS:O     | 27:AU:4:ILE:HB     | 2.12                     | 0.48              |
| 27:AU:25:LYS:HB3  | 27:AU:25:LYS:NZ    | 2.27                     | 0.48              |
| 27:AU:39:ASN:ND2  | 27:AU:42:LYS:CD    | 2.74                     | 0.48              |
| 31:AY:4:ILE:HG22  | 31:AY:5:LYS:HG3    | 1.95                     | 0.48              |
| 33:BA:98:A:O2'    | 33:BA:99:C:H5'     | 2.13                     | 0.48              |
| 33:BA:105:G:C5    | 33:BA:106:C:C4     | 3.01                     | 0.48              |
| 33:BA:425:G:C6    | 33:BA:426:U:C4     | 3.01                     | 0.48              |
| 33:BA:446:G:C6    | 33:BA:447:G:C2     | 3.01                     | 0.48              |
| 33:BA:529:G:O6    | 44:BL:45:ASN:ND2   | 2.47                     | 0.48              |
| 33:BA:685:G:H2'   | 33:BA:686:U:H6     | 1.78                     | 0.48              |
| 33:BA:704:A:C8    | 33:BA:704:A:H5'    | 2.48                     | 0.48              |
| 33:BA:805:C:O2    | 33:BA:806:C:C5     | 2.65                     | 0.48              |
| 33:BA:818:G:C2    | 33:BA:820:U:H2'    | 2.49                     | 0.48              |
| 33:BA:886:G:C2    | 33:BA:912:C:O2     | 2.66                     | 0.48              |
| 33:BA:919:A:C4    | 33:BA:920:U:C5     | 3.01                     | 0.48              |
| 33:BA:932:C:H2'   | 33:BA:933:G:H8     | 1.79                     | 0.48              |
| 33:BA:1053:G:O4'  | 33:BA:1200:C:H5    | 1.95                     | 0.48              |
| 33:BA:1270:G:O5'  | 33:BA:1270:G:C8    | 2.63                     | 0.48              |
| 33:BA:1314:C:C5   | 51:BS:5:LYS:HD3    | 2.39                     | 0.48              |
| 33:BA:1376:U:C4   | 33:BA:1377:A:N6    | 2.81                     | 0.48              |
| 33:BA:1405:G:H21  | 33:BA:1518:A:H1'   | 1.78                     | 0.48              |
| 37:BE:37:VAL:HG11 | 37:BE:113:VAL:HG12 | 1.94                     | 0.48              |
| 40:BH:11:THR:HG23 | 40:BH:14:ARG:NH1   | 2.28                     | 0.48              |
| 47:BO:80:LEU:HD23 | 47:BO:84:LEU:HD13  | 1.95                     | 0.48              |
| 48:BP:3:THR:HG22  | 48:BP:66:THR:CB    | 2.38                     | 0.48              |
| 51:BS:48:ILE:HD12 | 51:BS:48:ILE:N     | 2.28                     | 0.48              |
| 53:BU:11:PHE:HB2  | 35:DC:105:VAL:HG11 | 1.96                     | 0.48              |
| 5:C4:24:ARG:CD    | 5:C4:37:GLN:HA     | 2.43                     | 0.48              |
| 7:CA:74:U:C4      | 7:CA:75:G:C6       | 3.01                     | 0.48              |
| 8:CB:438:G:H2'    | 8:CB:439:A:C8      | 2.48                     | 0.48              |
| 8:CB:482:A:C8     | 8:CB:506:G:C2      | 3.01                     | 0.48              |
| 8:CB:715:A:C6     | 8:CB:716:A:C6      | 3.01                     | 0.48              |
| 8:CB:733:G:H3'    | 8:CB:733:G:C8      | 2.48                     | 0.48              |
| 8:CB:738:G:C2     | 8:CB:759:G:C6      | 3.01                     | 0.48              |
| 8:CB:762:U:H4'    | 8:CB:763:G:O5'     | 2.13                     | 0.48              |
| 8:CB:790:U:C5     | 8:CB:791:C:C5      | 2.98                     | 0.48              |
| 8:CB:827:U:P      | 8:CB:828:U:H5      | 2.35                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1056:G:P      | 8:CB:1057:A:H5'   | 2.53                     | 0.48              |
| 8:CB:1113:U:O5'    | 8:CB:1113:U:H6    | 1.97                     | 0.48              |
| 8:CB:1291:C:C6     | 8:CB:1291:C:C5'   | 2.86                     | 0.48              |
| 8:CB:1323:C:C5'    | 25:CS:84:ARG:HH12 | 2.26                     | 0.48              |
| 8:CB:1608:A:C4     | 8:CB:1611:C:C5    | 3.00                     | 0.48              |
| 8:CB:1681:G:C4     | 8:CB:1762:A:N3    | 2.82                     | 0.48              |
| 8:CB:1720:U:H2'    | 8:CB:1720:U:O2    | 2.14                     | 0.48              |
| 8:CB:1754:A:OP1    | 22:CP:95:LYS:HB2  | 2.14                     | 0.48              |
| 8:CB:1912:A:N6     | 33:DA:1408:A:H5'  | 2.28                     | 0.48              |
| 8:CB:1960:A:C8     | 8:CB:1961:C:C5    | 3.01                     | 0.48              |
| 8:CB:1999:C:O2'    | 8:CB:2000:C:H5'   | 2.13                     | 0.48              |
| 8:CB:2027:G:N2     | 8:CB:2028:U:C2    | 2.82                     | 0.48              |
| 8:CB:2199:A:O2'    | 32:CZ:34:LEU:HD21 | 2.12                     | 0.48              |
| 8:CB:2361:G:H2'    | 8:CB:2362:C:C5'   | 2.43                     | 0.48              |
| 8:CB:2485:G:C6     | 8:CB:2486:C:C5    | 3.01                     | 0.48              |
| 8:CB:2747:G:N2     | 8:CB:2757:A:H62   | 2.11                     | 0.48              |
| 8:CB:2829:A:C6     | 8:CB:2830:C:C4    | 3.00                     | 0.48              |
| 8:CB:2884:U:H2'    | 8:CB:2885:G:O5'   | 2.13                     | 0.48              |
| 9:CC:27:LYS:N      | 9:CC:28:PRO:CD    | 2.76                     | 0.48              |
| 9:CC:170:TYR:C     | 9:CC:171:VAL:HG22 | 2.33                     | 0.48              |
| 10:CD:92:VAL:HG23  | 10:CD:92:VAL:O    | 2.12                     | 0.48              |
| 12:CF:4:HIS:O      | 12:CF:8:LYS:HG3   | 2.13                     | 0.48              |
| 14:CH:112:LYS:HA   | 14:CH:132:PHE:HZ  | 1.78                     | 0.48              |
| 18:CL:33:ARG:HD2   | 24:CR:85:LYS:HZ3  | 1.76                     | 0.48              |
| 19:CM:13:HIS:ND1   | 19:CM:13:HIS:N    | 2.61                     | 0.48              |
| 19:CM:110:GLU:C    | 19:CM:112:LEU:N   | 2.67                     | 0.48              |
| 20:CN:1:MET:HG2    | 20:CN:3:HIS:ND1   | 2.28                     | 0.48              |
| 21:CO:57:ALA:CB    | 21:CO:61:GLN:HG3  | 2.42                     | 0.48              |
| 21:CO:106:LEU:HD23 | 21:CO:106:LEU:C   | 2.34                     | 0.48              |
| 22:CP:52:ARG:HG2   | 22:CP:60:VAL:HG11 | 1.94                     | 0.48              |
| 22:CP:93:LYS:CE    | 22:CP:97:TYR:CE2  | 2.94                     | 0.48              |
| 23:CQ:82:LEU:O     | 23:CQ:85:ALA:HB3  | 2.13                     | 0.48              |
| 24:CR:7:SER:CB     | 24:CR:24:LYS:HZ3  | 2.24                     | 0.48              |
| 27:CU:92:VAL:CG2   | 27:CU:94:PHE:HB2  | 2.43                     | 0.48              |
| 28:CV:8:VAL:HA     | 28:CV:39:ALA:O    | 2.13                     | 0.48              |
| 29:CW:3:LYS:HZ2    | 29:CW:10:ARG:NH2  | 2.10                     | 0.48              |
| 29:CW:42:THR:HG23  | 29:CW:66:VAL:C    | 2.34                     | 0.48              |
| 29:CW:44:PHE:CD1   | 29:CW:44:PHE:O    | 2.65                     | 0.48              |
| 33:DA:257:G:C6     | 33:DA:258:G:N7    | 2.81                     | 0.48              |
| 33:DA:450:G:C3'    | 33:DA:451:A:H5''  | 2.43                     | 0.48              |
| 33:DA:478:A:C6     | 33:DA:479:U:O2    | 2.66                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:502:A:H2'   | 33:DA:503:C:C6    | 2.44                     | 0.48              |
| 33:DA:513:C:C5    | 33:DA:514:C:C5    | 3.01                     | 0.48              |
| 33:DA:602:A:H8    | 33:DA:602:A:O5'   | 1.97                     | 0.48              |
| 33:DA:673:A:H1'   | 50:DR:63:TYR:CE1  | 2.49                     | 0.48              |
| 33:DA:685:G:N2    | 33:DA:706:A:H62   | 1.96                     | 0.48              |
| 33:DA:765:G:C1'   | 33:DA:812:G:N2    | 2.72                     | 0.48              |
| 33:DA:1083:U:C5   | 33:DA:1084:G:C5   | 3.00                     | 0.48              |
| 33:DA:1091:U:C2   | 33:DA:1093:A:OP2  | 2.65                     | 0.48              |
| 33:DA:1178:G:N7   | 41:DI:98:ARG:HD3  | 2.28                     | 0.48              |
| 33:DA:1261:A:H8   | 33:DA:1261:A:O5'  | 1.96                     | 0.48              |
| 33:DA:1386:G:C2   | 33:DA:1387:G:C6   | 3.01                     | 0.48              |
| 33:DA:1415:G:O6   | 33:DA:1485:U:C2   | 2.67                     | 0.48              |
| 33:DA:1446:A:H62  | 33:DA:1447:A:N6   | 2.11                     | 0.48              |
| 33:DA:1454:G:N2   | 33:DA:1455:G:C4   | 2.81                     | 0.48              |
| 33:DA:1501:C:N4   | 33:DA:1504:G:N3   | 2.61                     | 0.48              |
| 33:DA:1524:C:H2'  | 33:DA:1524:C:O2   | 2.13                     | 0.48              |
| 34:DB:18:GLN:NE2  | 34:DB:203:ASP:OD2 | 2.46                     | 0.48              |
| 34:DB:70:GLY:O    | 34:DB:92:ASN:HA   | 2.12                     | 0.48              |
| 37:DE:32:PHE:O    | 37:DE:33:THR:HG23 | 2.13                     | 0.48              |
| 41:DI:114:LYS:HZ2 | 41:DI:121:ARG:HG2 | 1.77                     | 0.48              |
| 42:DJ:8:ILE:HA    | 42:DJ:100:ILE:HA  | 1.96                     | 0.48              |
| 43:DK:12:ARG:N    | 43:DK:14:GLN:OE1  | 2.46                     | 0.48              |
| 43:DK:16:SER:OG   | 43:DK:78:ILE:HA   | 2.13                     | 0.48              |
| 45:DM:100:ARG:NH2 | 45:DM:102:LYS:HE3 | 2.27                     | 0.48              |
| 49:DQ:4:ILE:HD13  | 49:DQ:6:THR:HG23  | 1.96                     | 0.48              |
| 51:DS:19:GLU:HA   | 51:DS:22:VAL:CG2  | 2.43                     | 0.48              |
| 51:DS:55:GLN:HA   | 51:DS:55:GLN:NE2  | 2.28                     | 0.48              |
| 3:A2:33:ARG:CA    | 3:A2:37:LYS:HG3   | 2.39                     | 0.48              |
| 4:A3:4:LYS:CE     | 4:A3:60:CYS:HB2   | 2.44                     | 0.48              |
| 5:A4:36:ARG:C     | 5:A4:38:GLY:H     | 2.17                     | 0.48              |
| 7:AA:18:G:C2      | 7:AA:67:G:O6      | 2.66                     | 0.48              |
| 7:AA:115:A:N3     | 7:AA:116:G:C8     | 2.81                     | 0.48              |
| 8:AB:126:A:N3     | 8:AB:126:A:C2'    | 2.76                     | 0.48              |
| 8:AB:142:A:H2'    | 8:AB:143:C:C6     | 2.49                     | 0.48              |
| 8:AB:605:G:C2     | 8:AB:606:U:O2     | 2.66                     | 0.48              |
| 8:AB:612:G:O5'    | 8:AB:612:G:H8     | 1.96                     | 0.48              |
| 8:AB:647:G:O6     | 8:AB:648:G:C6     | 2.66                     | 0.48              |
| 8:AB:772:C:C2     | 8:AB:773:U:C6     | 3.01                     | 0.48              |
| 8:AB:773:U:O2     | 8:AB:773:U:C2'    | 2.61                     | 0.48              |
| 8:AB:849:A:H2'    | 8:AB:850:U:H6     | 1.77                     | 0.48              |
| 8:AB:949:G:C2     | 8:AB:950:G:N7     | 2.81                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:977:G:C2     | 8:AB:978:G:C8     | 3.02                     | 0.48              |
| 8:AB:1077:A:N3    | 8:AB:1077:A:H2'   | 2.27                     | 0.48              |
| 8:AB:1103:A:N7    | 8:AB:1104:C:C4    | 2.81                     | 0.48              |
| 8:AB:1120:G:C2    | 8:AB:1121:C:C6    | 3.01                     | 0.48              |
| 8:AB:1136:G:H2'   | 8:AB:1137:G:O4'   | 2.12                     | 0.48              |
| 8:AB:1329:U:O2'   | 8:AB:1330:C:H5'   | 2.13                     | 0.48              |
| 8:AB:1350:C:C5'   | 8:AB:1351:C:OP2   | 2.61                     | 0.48              |
| 8:AB:1381:G:N7    | 8:AB:1382:G:N2    | 2.62                     | 0.48              |
| 8:AB:1557:C:C5    | 8:AB:1558:C:H2'   | 2.48                     | 0.48              |
| 8:AB:1568:G:N2    | 9:AC:58:LYS:HE3   | 2.27                     | 0.48              |
| 8:AB:1570:A:C5    | 8:AB:1571:A:C5    | 3.02                     | 0.48              |
| 8:AB:1702:G:C5    | 8:AB:1703:G:C8    | 3.01                     | 0.48              |
| 8:AB:1720:U:H2'   | 8:AB:1720:U:O2    | 2.14                     | 0.48              |
| 8:AB:1788:C:H2'   | 8:AB:1789:A:C4'   | 2.43                     | 0.48              |
| 8:AB:2149:U:H2'   | 8:AB:2150:C:C6    | 2.48                     | 0.48              |
| 8:AB:2156:G:H8    | 8:AB:2156:G:O5'   | 1.94                     | 0.48              |
| 8:AB:2288:A:HO2'  | 8:AB:2288:A:H8    | 1.60                     | 0.48              |
| 8:AB:2316:G:C2    | 8:AB:2317:A:N7    | 2.81                     | 0.48              |
| 8:AB:2391:G:N2    | 8:AB:2424:C:N1    | 2.61                     | 0.48              |
| 8:AB:2539:C:C5    | 8:AB:2540:C:H5    | 2.28                     | 0.48              |
| 8:AB:2829:A:C6    | 8:AB:2830:C:C4    | 3.01                     | 0.48              |
| 8:AB:2892:G:C8    | 8:AB:2892:G:C3'   | 2.97                     | 0.48              |
| 9:AC:107:LYS:N    | 9:AC:194:VAL:CG2  | 2.71                     | 0.48              |
| 10:AD:61:THR:O    | 10:AD:64:GLU:HB3  | 2.13                     | 0.48              |
| 10:AD:98:VAL:HG23 | 10:AD:101:PHE:HE2 | 1.70                     | 0.48              |
| 11:AE:9:GLN:O     | 11:AE:10:SER:C    | 2.52                     | 0.48              |
| 11:AE:169:VAL:O   | 11:AE:171:ASP:OD2 | 2.31                     | 0.48              |
| 12:AF:33:ILE:HG13 | 12:AF:34:THR:N    | 2.28                     | 0.48              |
| 13:AG:5:LYS:HG3   | 13:AG:6:ALA:H     | 1.78                     | 0.48              |
| 19:AM:5:LYS:HG3   | 19:AM:91:TYR:HB2  | 1.95                     | 0.48              |
| 25:AS:29:VAL:HG23 | 25:AS:71:VAL:HG23 | 1.96                     | 0.48              |
| 28:AV:24:ASN:HB3  | 28:AV:44:HIS:CB   | 2.43                     | 0.48              |
| 28:AV:80:HIS:O    | 28:AV:81:PRO:C    | 2.51                     | 0.48              |
| 29:AW:42:THR:CB   | 29:AW:65:LYS:HA   | 2.38                     | 0.48              |
| 31:AY:31:ILE:HD13 | 31:AY:31:ILE:H    | 1.79                     | 0.48              |
| 33:BA:113:G:O2'   | 33:BA:114:U:H5'   | 2.13                     | 0.48              |
| 33:BA:446:G:H8    | 33:BA:446:G:C5'   | 2.25                     | 0.48              |
| 33:BA:451:A:H4'   | 33:BA:452:A:H8    | 1.75                     | 0.48              |
| 33:BA:463:U:H2'   | 33:BA:464:U:N1    | 2.28                     | 0.48              |
| 33:BA:492:C:C4    | 33:BA:493:A:H2    | 2.31                     | 0.48              |
| 33:BA:815:A:O2'   | 33:BA:816:A:P     | 2.71                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:1149:C:N4    | 33:BA:1150:A:N6   | 2.61                     | 0.48              |
| 33:BA:1391:U:H2'   | 33:BA:1392:G:C8   | 2.48                     | 0.48              |
| 33:BA:1502:A:H8    | 33:BA:1505:G:N2   | 2.09                     | 0.48              |
| 44:BL:113:ARG:HH21 | 44:BL:120:ARG:N   | 2.11                     | 0.48              |
| 52:BT:69:ASN:O     | 52:BT:72:ALA:HB3  | 2.12                     | 0.48              |
| 1:C0:6:LYS:HD3     | 1:C0:7:PRO:CD     | 2.43                     | 0.48              |
| 5:C4:5:ALA:CB      | 8:CB:2465:C:O3'   | 2.61                     | 0.48              |
| 7:CA:34:A:O2'      | 7:CA:35:C:H5''    | 2.14                     | 0.48              |
| 7:CA:46:A:H5''     | 21:CO:1:MET:HG2   | 1.96                     | 0.48              |
| 8:CB:4:U:N3        | 8:CB:2900:A:C2    | 2.81                     | 0.48              |
| 8:CB:92:U:O4       | 8:CB:93:G:C5      | 2.66                     | 0.48              |
| 8:CB:123:G:C2      | 8:CB:129:C:N3     | 2.81                     | 0.48              |
| 8:CB:308:G:N2      | 8:CB:477:A:C8     | 2.81                     | 0.48              |
| 8:CB:310:A:O2'     | 8:CB:311:A:H5''   | 2.12                     | 0.48              |
| 8:CB:553:G:N7      | 8:CB:554:U:C5     | 2.82                     | 0.48              |
| 8:CB:696:G:H2'     | 8:CB:697:G:C8     | 2.48                     | 0.48              |
| 8:CB:873:C:C6      | 8:CB:873:C:H3'    | 2.47                     | 0.48              |
| 8:CB:1026:G:C2     | 8:CB:1027:A:C8    | 3.01                     | 0.48              |
| 8:CB:1048:A:N6     | 8:CB:1111:A:C5    | 2.81                     | 0.48              |
| 8:CB:1076:C:C2     | 8:CB:1077:A:H8    | 2.30                     | 0.48              |
| 8:CB:1651:G:O6     | 8:CB:1652:A:C6    | 2.67                     | 0.48              |
| 8:CB:1695:G:H2'    | 8:CB:1696:G:O4'   | 2.13                     | 0.48              |
| 8:CB:2010:G:C8     | 8:CB:2010:G:H3'   | 2.48                     | 0.48              |
| 8:CB:2027:G:N1     | 8:CB:2028:U:C4    | 2.82                     | 0.48              |
| 8:CB:2039:U:H2'    | 8:CB:2040:G:O4'   | 2.13                     | 0.48              |
| 8:CB:2048:G:H8     | 8:CB:2048:G:C5'   | 2.25                     | 0.48              |
| 8:CB:2221:G:C2     | 8:CB:2222:C:C2    | 3.01                     | 0.48              |
| 8:CB:2331:G:H2'    | 8:CB:2332:C:O4'   | 2.13                     | 0.48              |
| 8:CB:2396:G:C5'    | 8:CB:2396:G:H8    | 2.26                     | 0.48              |
| 8:CB:2435:A:C2     | 8:CB:2436:G:H1'   | 2.48                     | 0.48              |
| 8:CB:2849:U:C4     | 8:CB:2867:G:N7    | 2.82                     | 0.48              |
| 9:CC:17:LYS:O      | 9:CC:18:VAL:HG13  | 2.12                     | 0.48              |
| 9:CC:63:ILE:O      | 9:CC:64:VAL:CG1   | 2.59                     | 0.48              |
| 11:CE:2:GLU:OE2    | 11:CE:4:VAL:HB    | 2.13                     | 0.48              |
| 11:CE:6:LYS:O      | 11:CE:11:ALA:HB1  | 2.13                     | 0.48              |
| 13:CG:37:ASN:HB2   | 13:CG:40:VAL:HG23 | 1.96                     | 0.48              |
| 13:CG:40:VAL:HG13  | 13:CG:51:PHE:CE2  | 2.48                     | 0.48              |
| 14:CH:82:SER:C     | 14:CH:83:LYS:HD2  | 2.33                     | 0.48              |
| 16:CJ:10:THR:HG21  | 16:CJ:50:THR:OG1  | 2.13                     | 0.48              |
| 16:CJ:109:LEU:O    | 16:CJ:111:LYS:HG3 | 2.13                     | 0.48              |
| 18:CL:14:LYS:HE2   | 18:CL:15:ALA:H    | 1.77                     | 0.48              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 19:CM:133:LYS:O  | 19:CM:134:THR:HG23 | 2.13                     | 0.48              |
| 20:CN:21:PHE:HD1 | 20:CN:21:PHE:N     | 2.12                     | 0.48              |
| 22:CP:36:LYS:O   | 22:CP:38:ARG:N     | 2.43                     | 0.48              |
| 23:CQ:75:TYR:CE1 | 23:CQ:79:ILE:HD11  | 2.48                     | 0.48              |
| 24:CR:79:ARG:CG  | 24:CR:80:ARG:N     | 2.75                     | 0.48              |
| 27:CU:84:PHE:H   | 27:CU:92:VAL:HG23  | 1.79                     | 0.48              |
| 27:CU:90:LYS:O   | 27:CU:91:LYS:HG3   | 2.12                     | 0.48              |
| 28:CV:29:ILE:CD1 | 28:CV:30:ILE:N     | 2.64                     | 0.48              |
| 29:CW:3:LYS:HA   | 29:CW:3:LYS:CE     | 2.32                     | 0.48              |
| 33:DA:232:G:H8   | 33:DA:232:G:H5'    | 1.77                     | 0.48              |
| 33:DA:363:A:C6   | 33:DA:364:A:C6     | 3.00                     | 0.48              |
| 33:DA:495:A:C6   | 33:DA:496:A:N6     | 2.82                     | 0.48              |
| 33:DA:583:A:H2'  | 33:DA:584:G:O4'    | 2.14                     | 0.48              |
| 33:DA:706:A:C5   | 33:DA:707:U:C5     | 3.00                     | 0.48              |
| 33:DA:798:U:O2   | 33:DA:798:U:H2'    | 2.13                     | 0.48              |
| 33:DA:888:G:C5   | 33:DA:889:A:C8     | 3.01                     | 0.48              |
| 33:DA:973:G:O2'  | 42:DJ:56:HIS:HA    | 2.13                     | 0.48              |
| 33:DA:977:A:H2'  | 33:DA:1223:C:N4    | 2.28                     | 0.48              |
| 33:DA:1000:A:N6  | 33:DA:1040:U:H3    | 2.11                     | 0.48              |
| 33:DA:1074:G:H2' | 33:DA:1075:U:C6    | 2.47                     | 0.48              |
| 33:DA:1079:G:C2  | 33:DA:1080:A:N1    | 2.82                     | 0.48              |
| 33:DA:1221:G:O2' | 33:DA:1222:G:H5'   | 2.14                     | 0.48              |
| 33:DA:1326:U:H2' | 33:DA:1327:C:H6    | 1.78                     | 0.48              |
| 33:DA:1371:G:C6  | 33:DA:1372:U:C4    | 3.01                     | 0.48              |
| 34:DB:174:GLU:O  | 34:DB:178:LEU:HD12 | 2.12                     | 0.48              |
| 36:DD:19:PHE:HE1 | 36:DD:103:ARG:HH22 | 1.60                     | 0.48              |
| 37:DE:19:ARG:HG3 | 37:DE:20:VAL:H     | 1.78                     | 0.48              |
| 38:DF:80:PHE:O   | 38:DF:82:ASP:N     | 2.46                     | 0.48              |
| 39:DG:144:ALA:HA | 39:DG:147:ASN:HB3  | 1.95                     | 0.48              |
| 41:DI:6:TYR:CG   | 41:DI:7:GLY:N      | 2.81                     | 0.48              |
| 43:DK:116:PRO:O  | 43:DK:118:ASN:N    | 2.45                     | 0.48              |
| 44:DL:75:GLU:O   | 44:DL:77:SER:N     | 2.47                     | 0.48              |
| 48:DP:61:VAL:C   | 48:DP:63:GLN:H     | 2.15                     | 0.48              |
| 52:DT:26:MET:SD  | 52:DT:27:MET:N     | 2.87                     | 0.48              |
| 5:A4:9:LYS:HG2   | 5:A4:10:LEU:N      | 2.29                     | 0.48              |
| 5:A4:24:ARG:HG3  | 5:A4:26:ILE:HG23   | 1.96                     | 0.48              |
| 6:A5:156:GLN:C   | 6:A5:158:VAL:H     | 2.16                     | 0.48              |
| 8:AB:37:C:C2'    | 11:AE:46:GLN:HG2   | 2.44                     | 0.48              |
| 8:AB:456:C:O2    | 26:AT:70:HIS:CE1   | 2.67                     | 0.48              |
| 8:AB:597:G:N1    | 8:AB:661:A:C2      | 2.81                     | 0.48              |
| 8:AB:666:A:N3    | 8:AB:667:U:C5      | 2.82                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:681:G:C4     | 8:AB:682:G:C8      | 3.01                     | 0.48              |
| 8:AB:692:C:H2'    | 8:AB:693:A:H8      | 1.78                     | 0.48              |
| 8:AB:751:A:C6     | 8:AB:789:A:C6      | 3.02                     | 0.48              |
| 8:AB:795:C:N3     | 8:AB:796:C:C4      | 2.80                     | 0.48              |
| 8:AB:796:C:H2'    | 8:AB:797:G:O4'     | 2.13                     | 0.48              |
| 8:AB:1123:C:H5'   | 8:AB:1123:C:C6     | 2.38                     | 0.48              |
| 8:AB:1347:A:C4    | 8:AB:1348:C:C6     | 3.01                     | 0.48              |
| 8:AB:1378:A:N7    | 8:AB:1380:G:C5     | 2.82                     | 0.48              |
| 8:AB:1396:U:O2    | 8:AB:1396:U:O4'    | 2.32                     | 0.48              |
| 8:AB:1435:G:C4    | 8:AB:1436:G:N7     | 2.81                     | 0.48              |
| 8:AB:1473:G:H2'   | 8:AB:1474:U:H6     | 1.78                     | 0.48              |
| 8:AB:1525:A:C4    | 8:AB:1526:C:C6     | 3.02                     | 0.48              |
| 8:AB:1626:A:HO2'  | 8:AB:1627:G:P      | 2.36                     | 0.48              |
| 8:AB:1672:A:C6    | 8:AB:1673:G:C6     | 3.02                     | 0.48              |
| 8:AB:1685:C:O2'   | 8:AB:1686:C:H5'    | 2.13                     | 0.48              |
| 8:AB:1801:A:C4    | 8:AB:2203:U:C5     | 3.01                     | 0.48              |
| 8:AB:1809:A:C2'   | 8:AB:1810:A:H8     | 2.20                     | 0.48              |
| 8:AB:1975:G:C4    | 8:AB:1976:U:C5     | 3.01                     | 0.48              |
| 8:AB:2230:G:N3    | 8:AB:2231:U:C6     | 2.80                     | 0.48              |
| 8:AB:2268:A:H3'   | 8:AB:2268:A:C8     | 2.49                     | 0.48              |
| 8:AB:2408:U:O5'   | 8:AB:2408:U:H6     | 1.96                     | 0.48              |
| 8:AB:2438:U:C2'   | 8:AB:2439:A:H5''   | 2.43                     | 0.48              |
| 8:AB:2511:U:HO2'  | 10:AD:144:GLY:HA2  | 1.76                     | 0.48              |
| 8:AB:2694:G:H5'   | 8:AB:2694:G:C8     | 2.49                     | 0.48              |
| 8:AB:2765:A:C2'   | 8:AB:2766:A:H5'    | 2.44                     | 0.48              |
| 8:AB:2854:G:O2'   | 8:AB:2855:C:H5'    | 2.14                     | 0.48              |
| 10:AD:103:ASP:C   | 10:AD:105:LYS:HG3  | 2.33                     | 0.48              |
| 11:AE:25:GLU:OE2  | 18:AL:17:LYS:HE3   | 2.13                     | 0.48              |
| 12:AF:147:ARG:O   | 12:AF:148:VAL:C    | 2.51                     | 0.48              |
| 14:AH:73:ASN:ND2  | 14:AH:74:ALA:N     | 2.61                     | 0.48              |
| 14:AH:138:VAL:O   | 14:AH:138:VAL:HG23 | 2.13                     | 0.48              |
| 15:AI:20:SER:N    | 15:AI:21:PRO:CD    | 2.73                     | 0.48              |
| 15:AI:96:LYS:C    | 15:AI:98:GLY:H     | 2.16                     | 0.48              |
| 17:AK:7:MET:HA    | 17:AK:19:VAL:O     | 2.13                     | 0.48              |
| 19:AM:16:ARG:CG   | 19:AM:18:ARG:HH21  | 2.26                     | 0.48              |
| 22:AP:38:ARG:HG3  | 22:AP:39:LEU:H     | 1.78                     | 0.48              |
| 24:AR:3:ALA:O     | 24:AR:4:VAL:HB     | 2.14                     | 0.48              |
| 24:AR:49:ILE:HG22 | 24:AR:51:VAL:HG23  | 1.94                     | 0.48              |
| 24:AR:59:ILE:O    | 24:AR:59:ILE:HG13  | 2.13                     | 0.48              |
| 24:AR:90:ARG:NH1  | 24:AR:92:TRP:CD1   | 2.81                     | 0.48              |
| 27:AU:46:LYS:HD2  | 27:AU:55:GLY:CA    | 2.40                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AZ:3:LYS:HG2   | 32:AZ:8:LYS:CA     | 2.44                     | 0.48              |
| 32:AZ:31:ASP:HB2  | 32:AZ:47:LYS:O     | 2.14                     | 0.48              |
| 33:BA:203:G:H2'   | 33:BA:204:G:C8     | 2.49                     | 0.48              |
| 33:BA:248:C:C4    | 33:BA:249:U:C4     | 3.02                     | 0.48              |
| 33:BA:293:G:C6    | 33:BA:305:G:C2     | 3.01                     | 0.48              |
| 33:BA:363:A:C6    | 33:BA:364:A:C6     | 3.01                     | 0.48              |
| 33:BA:370:C:C2    | 33:BA:371:A:C8     | 3.01                     | 0.48              |
| 33:BA:514:C:O2    | 33:BA:538:G:N1     | 2.47                     | 0.48              |
| 33:BA:550:G:O2'   | 44:BL:115:LYS:HE3  | 2.14                     | 0.48              |
| 33:BA:570:G:H2'   | 33:BA:571:U:C6     | 2.43                     | 0.48              |
| 33:BA:592:G:C5    | 33:BA:593:U:C6     | 3.02                     | 0.48              |
| 33:BA:712:A:C5'   | 33:BA:712:A:H8     | 2.25                     | 0.48              |
| 33:BA:740:U:H2'   | 33:BA:741:G:H5''   | 1.95                     | 0.48              |
| 33:BA:805:C:H2'   | 33:BA:806:C:H5     | 1.76                     | 0.48              |
| 33:BA:1029:U:H3'  | 33:BA:1029:U:C6    | 2.48                     | 0.48              |
| 33:BA:1320:C:C1'  | 51:BS:72:GLU:HG2   | 2.43                     | 0.48              |
| 33:BA:1375:A:H2'  | 33:BA:1376:U:O4'   | 2.14                     | 0.48              |
| 33:BA:1530:G:H2'  | 33:BA:1531:A:H8    | 1.77                     | 0.48              |
| 34:BB:14:HIS:O    | 34:BB:15:PHE:C     | 2.51                     | 0.48              |
| 34:BB:77:GLU:O    | 34:BB:79:VAL:N     | 2.44                     | 0.48              |
| 35:BC:69:THR:HG21 | 35:BC:75:VAL:HG21  | 1.94                     | 0.48              |
| 36:BD:103:ARG:NH1 | 36:BD:169:TRP:CZ2  | 2.81                     | 0.48              |
| 37:BE:109:ALA:O   | 37:BE:113:VAL:HG22 | 2.14                     | 0.48              |
| 40:BH:24:VAL:HG22 | 40:BH:25:THR:H     | 1.78                     | 0.48              |
| 42:BJ:74:VAL:O    | 42:BJ:75:ASP:HB3   | 2.13                     | 0.48              |
| 45:BM:21:ILE:HB   | 45:BM:24:VAL:HG22  | 1.95                     | 0.48              |
| 47:BO:26:VAL:O    | 47:BO:28:VAL:N     | 2.46                     | 0.48              |
| 47:BO:86:LEU:HD12 | 47:BO:86:LEU:N     | 2.28                     | 0.48              |
| 49:BQ:4:ILE:HD13  | 49:BQ:6:THR:HG23   | 1.95                     | 0.48              |
| 2:C1:46:VAL:CG1   | 2:C1:47:ILE:HG13   | 2.40                     | 0.48              |
| 3:C2:18:PHE:HD2   | 3:C2:18:PHE:H      | 1.59                     | 0.48              |
| 7:CA:78:A:H2'     | 7:CA:79:G:H8       | 1.78                     | 0.48              |
| 8:CB:110:G:O5'    | 8:CB:110:G:C8      | 2.59                     | 0.48              |
| 8:CB:117:G:C6     | 8:CB:119:A:N6      | 2.82                     | 0.48              |
| 8:CB:144:A:C5     | 26:CT:3:ARG:NH2    | 2.82                     | 0.48              |
| 8:CB:420:C:C2     | 8:CB:421:C:C5      | 3.01                     | 0.48              |
| 8:CB:449:A:N6     | 8:CB:450:G:C6      | 2.81                     | 0.48              |
| 8:CB:462:C:H3'    | 8:CB:462:C:C6      | 2.49                     | 0.48              |
| 8:CB:563:A:C2     | 8:CB:2018:G:C4     | 3.01                     | 0.48              |
| 8:CB:601:C:O5'    | 8:CB:601:C:H6      | 1.96                     | 0.48              |
| 8:CB:614:A:H4'    | 8:CB:615:U:OP1     | 2.13                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:680:C:C2      | 8:CB:681:G:C8     | 3.01                     | 0.48              |
| 8:CB:870:U:C2'     | 8:CB:871:U:H5'    | 2.44                     | 0.48              |
| 8:CB:988:A:C2      | 8:CB:989:G:C2     | 3.02                     | 0.48              |
| 8:CB:999:U:C5      | 8:CB:1154:G:C5    | 3.01                     | 0.48              |
| 8:CB:1063:G:O4'    | 15:CI:90:GLY:HA3  | 2.13                     | 0.48              |
| 8:CB:1097:U:H2'    | 8:CB:1098:A:O4'   | 2.14                     | 0.48              |
| 8:CB:1273:U:C5     | 8:CB:2003:A:O4'   | 2.66                     | 0.48              |
| 8:CB:1296:G:N3     | 8:CB:1645:G:C2    | 2.82                     | 0.48              |
| 8:CB:1387:A:H8     | 8:CB:1387:A:O5'   | 1.96                     | 0.48              |
| 8:CB:1392:A:C6     | 8:CB:1393:A:C6    | 3.02                     | 0.48              |
| 8:CB:1521:G:H8     | 8:CB:1521:G:O5'   | 1.96                     | 0.48              |
| 8:CB:1805:A:C2'    | 8:CB:1806:C:H5''  | 2.44                     | 0.48              |
| 8:CB:1970:A:C4     | 8:CB:1972:G:N7    | 2.82                     | 0.48              |
| 8:CB:2046:G:N1     | 8:CB:2047:C:N3    | 2.61                     | 0.48              |
| 8:CB:2319:G:C8     | 8:CB:2319:G:O5'   | 2.67                     | 0.48              |
| 8:CB:2486:C:H2'    | 8:CB:2487:G:O5'   | 2.13                     | 0.48              |
| 8:CB:2489:U:C2'    | 8:CB:2490:G:H5'   | 2.44                     | 0.48              |
| 8:CB:2515:C:H2'    | 8:CB:2516:A:H8    | 1.78                     | 0.48              |
| 8:CB:2760:C:C3'    | 8:CB:2761:A:H5''  | 2.42                     | 0.48              |
| 9:CC:35:LYS:NZ     | 9:CC:101:ARG:HA   | 2.28                     | 0.48              |
| 9:CC:104:LEU:C     | 9:CC:106:PRO:HD3  | 2.32                     | 0.48              |
| 9:CC:237:ARG:HE    | 9:CC:237:ARG:CA   | 2.26                     | 0.48              |
| 10:CD:11:MET:HG3   | 10:CD:12:THR:N    | 2.22                     | 0.48              |
| 13:CG:120:ILE:HG23 | 13:CG:133:LYS:C   | 2.34                     | 0.48              |
| 14:CH:5:LEU:HA     | 14:CH:35:LYS:HE3  | 1.95                     | 0.48              |
| 16:CJ:85:LYS:HE2   | 16:CJ:85:LYS:CA   | 2.40                     | 0.48              |
| 16:CJ:130:HIS:N    | 16:CJ:132:HIS:HB2 | 2.28                     | 0.48              |
| 19:CM:93:VAL:HG13  | 19:CM:93:VAL:O    | 2.13                     | 0.48              |
| 23:CQ:10:ARG:HB3   | 23:CQ:14:LYS:HZ3  | 1.78                     | 0.48              |
| 23:CQ:46:TYR:HD1   | 24:CR:79:ARG:CB   | 2.26                     | 0.48              |
| 23:CQ:69:ARG:HB2   | 23:CQ:69:ARG:CZ   | 2.42                     | 0.48              |
| 25:CS:29:VAL:HG11  | 25:CS:69:LEU:CB   | 2.34                     | 0.48              |
| 26:CT:31:VAL:HG23  | 26:CT:32:LEU:N    | 2.21                     | 0.48              |
| 28:CV:26:PHE:CE1   | 28:CV:42:LEU:HD12 | 2.48                     | 0.48              |
| 28:CV:54:ALA:C     | 28:CV:56:PHE:H    | 2.17                     | 0.48              |
| 29:CW:44:PHE:CB    | 29:CW:78:PHE:HA   | 2.44                     | 0.48              |
| 30:CX:36:GLN:HA    | 30:CX:40:SER:HB2  | 1.95                     | 0.48              |
| 33:DA:164:G:N3     | 33:DA:164:G:H2'   | 2.27                     | 0.48              |
| 33:DA:214:C:O2'    | 33:DA:215:C:H5'   | 2.14                     | 0.48              |
| 33:DA:391:G:C2     | 33:DA:392:C:C2    | 3.02                     | 0.48              |
| 33:DA:408:A:N7     | 33:DA:409:U:C5    | 2.82                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:491:G:C2    | 33:DA:492:C:C5    | 3.01                     | 0.48              |
| 33:DA:600:A:N3    | 33:DA:639:G:N2    | 2.62                     | 0.48              |
| 33:DA:713:G:C2    | 33:DA:714:G:C6    | 3.02                     | 0.48              |
| 33:DA:825:A:N6    | 33:DA:875:U:H3    | 2.11                     | 0.48              |
| 33:DA:1038:C:H2'  | 33:DA:1039:G:C8   | 2.48                     | 0.48              |
| 33:DA:1416:G:C2   | 33:DA:1417:G:C1'  | 2.95                     | 0.48              |
| 33:DA:1430:A:N6   | 33:DA:1431:A:C6   | 2.82                     | 0.48              |
| 34:DB:56:LEU:O    | 34:DB:60:ALA:HB3  | 2.12                     | 0.48              |
| 34:DB:157:PRO:O   | 34:DB:159:ALA:N   | 2.46                     | 0.48              |
| 35:DC:10:ARG:HG3  | 35:DC:10:ARG:NH1  | 2.28                     | 0.48              |
| 36:DD:50:TYR:CG   | 36:DD:51:GLY:N    | 2.81                     | 0.48              |
| 36:DD:115:GLN:O   | 36:DD:117:VAL:N   | 2.47                     | 0.48              |
| 37:DE:47:PHE:CD2  | 37:DE:47:PHE:C    | 2.85                     | 0.48              |
| 38:DF:47:LEU:HD21 | 38:DF:57:ALA:HB3  | 1.93                     | 0.48              |
| 40:DH:6:ILE:HB    | 40:DH:76:ARG:HH12 | 1.77                     | 0.48              |
| 40:DH:11:THR:HG22 | 40:DH:14:ARG:HH12 | 1.78                     | 0.48              |
| 40:DH:35:ILE:O    | 40:DH:39:LEU:HD22 | 2.14                     | 0.48              |
| 41:DI:82:ILE:O    | 41:DI:85:ALA:HB3  | 2.14                     | 0.48              |
| 44:DL:19:ASN:HB3  | 44:DL:85:ARG:NE   | 2.28                     | 0.48              |
| 44:DL:20:VAL:HG12 | 44:DL:22:ALA:H    | 1.78                     | 0.48              |
| 46:DN:26:LEU:O    | 46:DN:44:VAL:HG11 | 2.14                     | 0.48              |
| 46:DN:40:ARG:NH1  | 51:DS:6:LYS:H     | 2.11                     | 0.48              |
| 47:DO:2:LEU:CG    | 47:DO:3:SER:N     | 2.77                     | 0.48              |
| 1:A0:6:LYS:HD3    | 1:A0:7:PRO:CD     | 2.43                     | 0.48              |
| 8:AB:31:C:H3'     | 8:AB:31:C:C6      | 2.49                     | 0.48              |
| 8:AB:90:U:N3      | 8:AB:91:A:N6      | 2.58                     | 0.48              |
| 8:AB:115:C:N3     | 8:AB:116:C:H5     | 2.09                     | 0.48              |
| 8:AB:245:G:C6     | 8:AB:246:C:C5     | 3.01                     | 0.48              |
| 8:AB:299:A:H2'    | 8:AB:300:A:C8     | 2.48                     | 0.48              |
| 8:AB:321:U:P      | 11:AE:130:LYS:HE3 | 2.53                     | 0.48              |
| 8:AB:460:A:C2     | 8:AB:470:A:C2     | 3.02                     | 0.48              |
| 8:AB:673:C:C2'    | 8:AB:674:G:H5'    | 2.43                     | 0.48              |
| 8:AB:825:A:H5''   | 8:AB:825:A:C8     | 2.49                     | 0.48              |
| 8:AB:1030:C:H3'   | 8:AB:1030:C:C6    | 2.48                     | 0.48              |
| 8:AB:1125:G:C6    | 8:AB:1126:A:N6    | 2.81                     | 0.48              |
| 8:AB:1131:G:C4    | 8:AB:2025:C:O2'   | 2.64                     | 0.48              |
| 8:AB:1229:C:H2'   | 8:AB:1230:A:H8    | 1.79                     | 0.48              |
| 8:AB:1392:A:C6    | 8:AB:1393:A:N6    | 2.81                     | 0.48              |
| 8:AB:1642:G:C2    | 8:AB:1643:G:C8    | 3.01                     | 0.48              |
| 8:AB:1805:A:C2'   | 8:AB:1806:C:H5''  | 2.44                     | 0.48              |
| 8:AB:1821:A:H2'   | 8:AB:1822:C:C6    | 2.49                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1890:A:N7    | 8:AB:1891:G:C8    | 2.81                     | 0.48              |
| 8:AB:1959:G:H4'   | 33:BA:1418:A:O4'  | 2.14                     | 0.48              |
| 8:AB:2023:C:O2'   | 8:AB:2024:G:H5'   | 2.13                     | 0.48              |
| 8:AB:2039:U:C5'   | 8:AB:2039:U:H6    | 2.26                     | 0.48              |
| 8:AB:2188:U:H2'   | 8:AB:2189:U:C6    | 2.48                     | 0.48              |
| 8:AB:2194:U:H2'   | 8:AB:2195:U:C6    | 2.49                     | 0.48              |
| 8:AB:2231:U:O2    | 8:AB:2232:C:C6    | 2.67                     | 0.48              |
| 8:AB:2258:C:C2    | 8:AB:2426:A:C4'   | 2.96                     | 0.48              |
| 8:AB:2310:C:H6    | 8:AB:2310:C:H5''  | 1.78                     | 0.48              |
| 8:AB:2592:G:N1    | 8:AB:2593:U:O2    | 2.47                     | 0.48              |
| 8:AB:2676:C:C6    | 8:AB:2676:C:C3'   | 2.96                     | 0.48              |
| 8:AB:2846:G:OP1   | 22:AP:54:LEU:HD12 | 2.14                     | 0.48              |
| 9:AC:22:GLU:HB2   | 9:AC:202:ARG:HE   | 1.79                     | 0.48              |
| 10:AD:1:MET:H2    | 10:AD:81:GLU:HB3  | 1.73                     | 0.48              |
| 10:AD:12:THR:OG1  | 10:AD:19:GLY:O    | 2.31                     | 0.48              |
| 11:AE:158:PHE:HD1 | 11:AE:158:PHE:C   | 2.15                     | 0.48              |
| 14:AH:26:ALA:HB2  | 14:AH:30:LEU:HB3  | 1.95                     | 0.48              |
| 16:AJ:85:LYS:HE2  | 16:AJ:85:LYS:CA   | 2.39                     | 0.48              |
| 17:AK:20:MET:O    | 17:AK:20:MET:HG3  | 2.11                     | 0.48              |
| 18:AL:90:VAL:HG12 | 18:AL:91:ASP:N    | 2.29                     | 0.48              |
| 19:AM:90:GLU:OE2  | 19:AM:92:TRP:CZ2  | 2.67                     | 0.48              |
| 24:AR:14:VAL:HG12 | 24:AR:15:SER:H    | 1.78                     | 0.48              |
| 24:AR:80:ARG:CG   | 24:AR:81:LYS:N    | 2.77                     | 0.48              |
| 27:AU:21:ARG:CG   | 27:AU:21:ARG:NH1  | 2.73                     | 0.48              |
| 29:AW:28:GLU:OE1  | 29:AW:28:GLU:HA   | 2.13                     | 0.48              |
| 29:AW:48:ALA:H    | 29:AW:72:GLY:CA   | 2.14                     | 0.48              |
| 30:AX:16:THR:O    | 30:AX:20:ASN:N    | 2.46                     | 0.48              |
| 33:BA:81:A:H5''   | 33:BA:81:A:H8     | 1.77                     | 0.48              |
| 33:BA:124:C:N3    | 33:BA:125:U:C5    | 2.81                     | 0.48              |
| 33:BA:136:C:O2'   | 33:BA:137:U:H5'   | 2.13                     | 0.48              |
| 33:BA:237:G:C6    | 33:BA:238:A:N6    | 2.82                     | 0.48              |
| 33:BA:255:G:C6    | 33:BA:256:U:C4    | 3.01                     | 0.48              |
| 33:BA:299:G:C6    | 33:BA:300:A:N1    | 2.82                     | 0.48              |
| 33:BA:307:C:H5'   | 33:BA:308:C:OP2   | 2.13                     | 0.48              |
| 33:BA:355:C:N3    | 33:BA:356:A:N7    | 2.61                     | 0.48              |
| 33:BA:497:G:N2    | 33:BA:498:A:C5    | 2.81                     | 0.48              |
| 33:BA:559:A:C5'   | 33:BA:560:A:H5''  | 2.43                     | 0.48              |
| 33:BA:604:G:C5    | 33:BA:635:A:C6    | 3.01                     | 0.48              |
| 33:BA:667:G:C2    | 33:BA:740:U:O2    | 2.67                     | 0.48              |
| 33:BA:789:U:C6    | 33:BA:791:G:OP2   | 2.67                     | 0.48              |
| 33:BA:825:A:H2'   | 33:BA:826:C:H6    | 1.78                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:907:A:N1    | 33:BA:908:A:C2     | 2.81                     | 0.48              |
| 33:BA:918:A:N1    | 33:BA:919:A:C2     | 2.81                     | 0.48              |
| 33:BA:1368:A:O2'  | 33:BA:1369:C:H5'   | 2.13                     | 0.48              |
| 33:BA:1466:C:O2   | 33:BA:1466:C:C2'   | 2.55                     | 0.48              |
| 33:BA:1525:G:C2'  | 33:BA:1526:G:H5'   | 2.43                     | 0.48              |
| 34:BB:95:TRP:CZ3  | 34:BB:170:ILE:HG22 | 2.49                     | 0.48              |
| 36:BD:16:THR:HG22 | 36:BD:17:ASP:H     | 1.78                     | 0.48              |
| 36:BD:55:ARG:O    | 36:BD:57:LYS:N     | 2.47                     | 0.48              |
| 36:BD:158:LEU:O   | 36:BD:161:ALA:HB3  | 2.13                     | 0.48              |
| 40:BH:48:PHE:HB2  | 40:BH:58:LEU:HD21  | 1.96                     | 0.48              |
| 43:BK:101:ALA:C   | 43:BK:103:GLY:H    | 2.17                     | 0.48              |
| 1:C0:52:LYS:HD3   | 1:C0:52:LYS:C      | 2.34                     | 0.48              |
| 8:CB:86:G:N2      | 8:CB:97:C:C4       | 2.82                     | 0.48              |
| 8:CB:101:A:OP2    | 8:CB:101:A:H4'     | 2.07                     | 0.48              |
| 8:CB:167:A:N6     | 8:CB:168:G:C2      | 2.81                     | 0.48              |
| 8:CB:196:A:C3'    | 8:CB:197:A:C5'     | 2.82                     | 0.48              |
| 8:CB:222:A:C8     | 8:CB:224:U:C5      | 3.02                     | 0.48              |
| 8:CB:223:A:N6     | 8:CB:422:A:C5      | 2.80                     | 0.48              |
| 8:CB:305:C:C5     | 8:CB:306:U:C5      | 3.00                     | 0.48              |
| 8:CB:464:U:H2'    | 8:CB:465:G:H5''    | 1.94                     | 0.48              |
| 8:CB:527:C:H5''   | 8:CB:2779:U:H3     | 1.79                     | 0.48              |
| 8:CB:527:C:H5'    | 55:CB:5080:HOH:O   | 2.13                     | 0.48              |
| 8:CB:646:U:OP2    | 8:CB:646:U:C6      | 2.57                     | 0.48              |
| 8:CB:856:G:C2     | 8:CB:857:G:O6      | 2.67                     | 0.48              |
| 8:CB:856:G:C2     | 8:CB:922:C:N4      | 2.81                     | 0.48              |
| 8:CB:974:G:C6     | 8:CB:989:G:C6      | 3.02                     | 0.48              |
| 8:CB:978:G:H5''   | 8:CB:979:A:OP2     | 2.13                     | 0.48              |
| 8:CB:1024:G:H2'   | 8:CB:1025:G:OP1    | 2.13                     | 0.48              |
| 8:CB:1437:C:H1'   | 8:CB:1515:A:H2     | 1.78                     | 0.48              |
| 8:CB:1796:U:O2'   | 9:CC:251:THR:N     | 2.46                     | 0.48              |
| 8:CB:1864:U:C2'   | 8:CB:1865:U:H5'    | 2.44                     | 0.48              |
| 8:CB:2405:G:N2    | 8:CB:2413:G:O6     | 2.46                     | 0.48              |
| 8:CB:2500:U:O2    | 8:CB:2504:U:C6     | 2.66                     | 0.48              |
| 8:CB:2580:U:H4'   | 10:CD:134:HIS:HB3  | 1.95                     | 0.48              |
| 8:CB:2587:A:H8    | 8:CB:2587:A:C5'    | 2.26                     | 0.48              |
| 8:CB:2631:G:C5    | 8:CB:2632:A:C8     | 3.02                     | 0.48              |
| 8:CB:2760:C:C2'   | 8:CB:2761:A:H5''   | 2.43                     | 0.48              |
| 8:CB:2798:U:H3'   | 8:CB:2798:U:P      | 2.53                     | 0.48              |
| 9:CC:22:GLU:N     | 9:CC:202:ARG:NH2   | 2.61                     | 0.48              |
| 9:CC:62:ARG:CD    | 9:CC:62:ARG:O      | 2.62                     | 0.48              |
| 10:CD:80:TRP:HE3  | 10:CD:80:TRP:C     | 2.17                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:CD:125:TRP:CD1  | 10:CD:127:PHE:HB2  | 2.48                     | 0.48              |
| 10:CD:138:LEU:O    | 10:CD:139:SER:C    | 2.51                     | 0.48              |
| 11:CE:175:ILE:HG22 | 11:CE:176:ASP:N    | 2.29                     | 0.48              |
| 12:CF:75:GLY:O     | 12:CF:77:LYS:N     | 2.37                     | 0.48              |
| 12:CF:140:ILE:HG22 | 12:CF:142:TYR:N    | 2.28                     | 0.48              |
| 13:CG:61:TRP:CE3   | 13:CG:61:TRP:O     | 2.67                     | 0.48              |
| 13:CG:123:GLU:O    | 13:CG:131:VAL:HG13 | 2.14                     | 0.48              |
| 16:CJ:38:GLY:HA3   | 16:CJ:41:LYS:HB2   | 1.95                     | 0.48              |
| 16:CJ:116:ARG:CG   | 16:CJ:116:ARG:NH1  | 2.67                     | 0.48              |
| 17:CK:73:ASP:O     | 22:CP:76:HIS:CE1   | 2.66                     | 0.48              |
| 18:CL:111:ILE:HD11 | 18:CL:113:ALA:CB   | 2.42                     | 0.48              |
| 19:CM:5:LYS:HG3    | 19:CM:68:PHE:CE1   | 2.49                     | 0.48              |
| 19:CM:81:ARG:O     | 19:CM:82:MET:HB2   | 2.14                     | 0.48              |
| 20:CN:64:ARG:CG    | 20:CN:65:LEU:N     | 2.70                     | 0.48              |
| 21:CO:13:ARG:HG2   | 21:CO:95:SER:HB2   | 1.95                     | 0.48              |
| 24:CR:35:PHE:HB3   | 24:CR:64:VAL:CG1   | 2.34                     | 0.48              |
| 26:CT:25:GLU:OE2   | 26:CT:25:GLU:CA    | 2.60                     | 0.48              |
| 26:CT:84:TYR:O     | 26:CT:85:VAL:HG22  | 2.14                     | 0.48              |
| 31:CY:24:LEU:HD13  | 31:CY:24:LEU:HA    | 1.59                     | 0.48              |
| 33:DA:198:G:H8     | 33:DA:198:G:O5'    | 1.97                     | 0.48              |
| 33:DA:251:G:N3     | 33:DA:266:G:C6     | 2.82                     | 0.48              |
| 33:DA:530:G:H4'    | 33:DA:531:U:H5''   | 1.96                     | 0.48              |
| 33:DA:582:C:O5'    | 33:DA:582:C:H6     | 1.96                     | 0.48              |
| 33:DA:646:G:C6     | 33:DA:647:C:N3     | 2.81                     | 0.48              |
| 33:DA:728:A:N1     | 33:DA:729:A:N1     | 2.61                     | 0.48              |
| 33:DA:854:U:H3'    | 33:DA:871:U:O4     | 2.13                     | 0.48              |
| 33:DA:922:G:H4'    | 37:DE:24:VAL:C     | 2.34                     | 0.48              |
| 33:DA:1079:G:N3    | 33:DA:1080:A:C2    | 2.82                     | 0.48              |
| 33:DA:1179:A:N1    | 33:DA:1180:A:N3    | 2.61                     | 0.48              |
| 33:DA:1236:A:H2'   | 33:DA:1237:C:C6    | 2.49                     | 0.48              |
| 33:DA:1426:G:N9    | 33:DA:1475:G:N2    | 2.61                     | 0.48              |
| 34:DB:128:LEU:HD11 | 34:DB:132:GLU:CG   | 2.43                     | 0.48              |
| 35:DC:17:TRP:CZ3   | 46:DN:94:GLY:N     | 2.79                     | 0.48              |
| 35:DC:104:GLU:H    | 35:DC:106:ARG:NH1  | 2.12                     | 0.48              |
| 42:DJ:51:VAL:CG2   | 46:DN:80:ARG:HB2   | 2.43                     | 0.48              |
| 43:DK:30:ILE:HA    | 43:DK:45:THR:OG1   | 2.13                     | 0.48              |
| 44:DL:21:PRO:CD    | 44:DL:94:TYR:OH    | 2.62                     | 0.48              |
| 48:DP:39:PHE:CE2   | 48:DP:41:PRO:CG    | 2.86                     | 0.48              |
| 8:AB:199:A:C8      | 8:AB:2433:A:C6     | 3.02                     | 0.48              |
| 8:AB:294:A:C8      | 8:AB:345:A:C2      | 3.02                     | 0.48              |
| 8:AB:346:A:N1      | 8:AB:347:A:C2      | 2.82                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:379:G:C6     | 8:AB:396:G:O6     | 2.67                     | 0.48              |
| 8:AB:418:C:C4     | 8:AB:419:U:C4     | 3.02                     | 0.48              |
| 8:AB:465:G:C6     | 8:AB:466:A:N6     | 2.81                     | 0.48              |
| 8:AB:508:A:N1     | 25:AS:9:HIS:NE2   | 2.62                     | 0.48              |
| 8:AB:611:C:C2'    | 8:AB:612:G:H5'    | 2.43                     | 0.48              |
| 8:AB:647:G:N2     | 8:AB:2350:C:H4'   | 2.29                     | 0.48              |
| 8:AB:677:A:C2'    | 8:AB:678:C:H5'    | 2.44                     | 0.48              |
| 8:AB:772:C:N3     | 8:AB:773:U:H5     | 2.12                     | 0.48              |
| 8:AB:830:G:H4'    | 8:AB:831:G:OP2    | 2.14                     | 0.48              |
| 8:AB:869:G:C2     | 8:AB:870:U:C1'    | 2.94                     | 0.48              |
| 8:AB:910:A:H2     | 8:AB:911:A:C2     | 2.32                     | 0.48              |
| 8:AB:928:A:C2     | 8:AB:929:U:C2     | 3.02                     | 0.48              |
| 8:AB:973:A:O4'    | 8:AB:1188:U:C6    | 2.67                     | 0.48              |
| 8:AB:1139:G:C8    | 8:AB:1139:G:C5'   | 2.95                     | 0.48              |
| 8:AB:1161:C:O2'   | 24:AR:22:LEU:CD1  | 2.61                     | 0.48              |
| 8:AB:1268:A:N6    | 8:AB:1269:A:N3    | 2.61                     | 0.48              |
| 8:AB:1358:G:N7    | 55:AB:4480:HOH:O  | 2.35                     | 0.48              |
| 8:AB:1392:A:N7    | 8:AB:1393:A:N6    | 2.62                     | 0.48              |
| 8:AB:1736:U:H3'   | 8:AB:1737:G:H8    | 1.78                     | 0.48              |
| 8:AB:1823:G:C8    | 8:AB:1823:G:H3'   | 2.49                     | 0.48              |
| 8:AB:1899:A:O2'   | 8:AB:1900:A:H5''  | 2.13                     | 0.48              |
| 8:AB:1941:C:C4    | 8:AB:1942:C:N3    | 2.82                     | 0.48              |
| 8:AB:2179:C:C6    | 8:AB:2180:U:H5    | 2.32                     | 0.48              |
| 8:AB:2329:U:O2'   | 8:AB:2330:G:H5'   | 2.13                     | 0.48              |
| 8:AB:2354:C:H6    | 8:AB:2354:C:H5''  | 1.78                     | 0.48              |
| 8:AB:2478:A:C6    | 8:AB:2529:G:C2    | 3.02                     | 0.48              |
| 8:AB:2881:U:C4    | 8:AB:2882:A:N7    | 2.82                     | 0.48              |
| 9:AC:120:ASP:H    | 9:AC:133:ASN:ND2  | 2.12                     | 0.48              |
| 9:AC:161:VAL:O    | 9:AC:174:ARG:O    | 2.32                     | 0.48              |
| 10:AD:37:VAL:CG1  | 10:AD:38:LYS:N    | 2.76                     | 0.48              |
| 11:AE:194:LYS:NZ  | 11:AE:194:LYS:HB2 | 2.28                     | 0.48              |
| 12:AF:121:PHE:HE2 | 12:AF:165:GLY:HA3 | 1.78                     | 0.48              |
| 16:AJ:7:LYS:HE3   | 16:AJ:48:VAL:CG2  | 2.44                     | 0.48              |
| 16:AJ:25:LEU:HG   | 16:AJ:64:VAL:CA   | 2.43                     | 0.48              |
| 16:AJ:37:ARG:HG3  | 16:AJ:118:MET:HE1 | 1.94                     | 0.48              |
| 18:AL:57:LEU:O    | 18:AL:59:ARG:CD   | 2.62                     | 0.48              |
| 18:AL:92:LEU:O    | 18:AL:92:LEU:HD23 | 2.14                     | 0.48              |
| 20:AN:62:ASN:C    | 20:AN:64:ARG:N    | 2.66                     | 0.48              |
| 21:AO:25:ARG:O    | 21:AO:39:VAL:HA   | 2.13                     | 0.48              |
| 21:AO:26:LEU:HA   | 21:AO:38:GLN:O    | 2.13                     | 0.48              |
| 22:AP:52:ARG:O    | 22:AP:52:ARG:HG2  | 2.13                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 24:AR:74:ILE:HA    | 24:AR:90:ARG:NH2  | 2.29                     | 0.48              |
| 32:AZ:17:SER:HB3   | 32:AZ:20:ASN:CA   | 2.44                     | 0.48              |
| 33:BA:89:U:H2'     | 33:BA:90:C:C6     | 2.48                     | 0.48              |
| 33:BA:417:G:H5'    | 33:BA:418:C:OP2   | 2.14                     | 0.48              |
| 33:BA:636:U:H3'    | 33:BA:636:U:C6    | 2.49                     | 0.48              |
| 33:BA:947:G:P      | 45:BM:106:ARG:HB3 | 2.54                     | 0.48              |
| 33:BA:1182:G:C4'   | 33:BA:1183:U:H5'  | 2.31                     | 0.48              |
| 33:BA:1236:A:H5''  | 33:BA:1236:A:C8   | 2.39                     | 0.48              |
| 33:BA:1430:A:N1    | 33:BA:1431:A:N3   | 2.62                     | 0.48              |
| 33:BA:1437:A:C2    | 33:BA:1438:G:C5   | 3.02                     | 0.48              |
| 35:BC:28:PHE:HE2   | 46:BN:93:PRO:HG2  | 1.77                     | 0.48              |
| 36:BD:18:LEU:HD22  | 36:BD:63:ILE:CD1  | 2.42                     | 0.48              |
| 36:BD:109:THR:HG22 | 36:BD:112:GLU:HB2 | 1.94                     | 0.48              |
| 37:BE:82:HIS:HD2   | 40:BH:95:MET:HG2  | 1.75                     | 0.48              |
| 39:BG:72:VAL:HG11  | 39:BG:145:GLU:CD  | 2.34                     | 0.48              |
| 41:BI:16:ALA:CB    | 41:BI:66:VAL:HB   | 2.43                     | 0.48              |
| 44:BL:20:VAL:CG1   | 44:BL:22:ALA:H    | 2.25                     | 0.48              |
| 44:BL:36:VAL:HG23  | 44:BL:36:VAL:O    | 2.14                     | 0.48              |
| 44:BL:47:ALA:O     | 44:BL:48:LEU:HD23 | 2.14                     | 0.48              |
| 50:BR:25:ILE:O     | 50:BR:25:ILE:CG1  | 2.61                     | 0.48              |
| 52:BT:35:TYR:CE1   | 52:BT:39:GLU:HG3  | 2.47                     | 0.48              |
| 53:BU:3:ILE:HG22   | 53:BU:3:ILE:O     | 2.14                     | 0.48              |
| 53:BU:7:GLU:OE1    | 53:BU:13:VAL:HG11 | 2.14                     | 0.48              |
| 7:CA:49:C:H4'      | 21:CO:68:LYS:HE2  | 1.96                     | 0.48              |
| 7:CA:65:U:O2'      | 7:CA:66:A:H5'     | 2.14                     | 0.48              |
| 8:CB:98:G:C3'      | 8:CB:99:U:H5''    | 2.44                     | 0.48              |
| 8:CB:219:A:H2'     | 8:CB:220:G:C8     | 2.49                     | 0.48              |
| 8:CB:226:A:H2'     | 8:CB:227:A:C8     | 2.48                     | 0.48              |
| 8:CB:279:A:C2      | 8:CB:362:A:H4'    | 2.49                     | 0.48              |
| 8:CB:323:C:O2      | 8:CB:323:C:H2'    | 2.14                     | 0.48              |
| 8:CB:597:G:N1      | 8:CB:661:A:C2     | 2.82                     | 0.48              |
| 8:CB:655:A:O5'     | 8:CB:655:A:H2'    | 2.14                     | 0.48              |
| 8:CB:682:G:N3      | 8:CB:683:U:C6     | 2.82                     | 0.48              |
| 8:CB:700:G:O2'     | 8:CB:1632:A:H1'   | 2.12                     | 0.48              |
| 8:CB:705:A:C2      | 8:CB:706:A:C4     | 3.01                     | 0.48              |
| 8:CB:737:C:O2      | 8:CB:737:C:H2'    | 2.13                     | 0.48              |
| 8:CB:952:G:H3'     | 8:CB:953:G:H5''   | 1.95                     | 0.48              |
| 8:CB:974:G:O4'     | 8:CB:1186:G:N2    | 2.47                     | 0.48              |
| 8:CB:986:C:C2'     | 8:CB:987:C:H5'    | 2.43                     | 0.48              |
| 8:CB:1254:A:N6     | 11:CE:77:ILE:HD12 | 2.29                     | 0.48              |
| 8:CB:1255:U:H6     | 8:CB:2502:G:N2    | 2.12                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1399:C:H2'    | 8:CB:1400:U:C6    | 2.49                     | 0.48              |
| 8:CB:1620:G:C6     | 8:CB:1621:U:N3    | 2.82                     | 0.48              |
| 8:CB:1801:A:C4     | 8:CB:2203:U:C5    | 3.01                     | 0.48              |
| 8:CB:1848:A:C2'    | 8:CB:1849:G:H8    | 2.02                     | 0.48              |
| 8:CB:2298:A:C2     | 8:CB:2299:U:O2    | 2.66                     | 0.48              |
| 8:CB:2316:G:O5'    | 8:CB:2316:G:H8    | 1.97                     | 0.48              |
| 8:CB:2428:G:O2'    | 18:CL:56:PRO:CG   | 2.62                     | 0.48              |
| 8:CB:2603:G:C5     | 8:CB:2604:U:C5    | 3.02                     | 0.48              |
| 8:CB:2620:C:H4'    | 10:CD:161:MET:HB2 | 1.96                     | 0.48              |
| 8:CB:2683:C:H6     | 8:CB:2683:C:C5'   | 2.26                     | 0.48              |
| 9:CC:51:ARG:HD3    | 9:CC:51:ARG:C     | 2.23                     | 0.48              |
| 10:CD:1:MET:CB     | 10:CD:81:GLU:HG2  | 2.44                     | 0.48              |
| 10:CD:80:TRP:HE3   | 10:CD:81:GLU:N    | 2.12                     | 0.48              |
| 10:CD:109:VAL:HG21 | 10:CD:193:VAL:HB  | 1.95                     | 0.48              |
| 11:CE:89:PRO:O     | 11:CE:90:GLN:HG2  | 2.13                     | 0.48              |
| 11:CE:134:LEU:O    | 11:CE:136:GLN:N   | 2.47                     | 0.48              |
| 12:CF:176:PHE:O    | 12:CF:177:ARG:HB3 | 2.13                     | 0.48              |
| 17:CK:95:ILE:O     | 17:CK:95:ILE:CG2  | 2.61                     | 0.48              |
| 17:CK:113:MET:HA   | 17:CK:116:ILE:CG1 | 2.43                     | 0.48              |
| 21:CO:25:ARG:NH2   | 21:CO:40:ILE:CD1  | 2.76                     | 0.48              |
| 23:CQ:103:VAL:HA   | 23:CQ:106:THR:HB  | 1.95                     | 0.48              |
| 24:CR:4:VAL:HB     | 24:CR:41:ILE:CG1  | 2.39                     | 0.48              |
| 25:CS:84:ARG:HH21  | 25:CS:98:LYS:HD3  | 1.79                     | 0.48              |
| 33:DA:19:A:H1'     | 33:DA:864:A:C1'   | 2.43                     | 0.48              |
| 33:DA:114:U:H2'    | 33:DA:115:G:C8    | 2.48                     | 0.48              |
| 33:DA:385:C:H6     | 33:DA:385:C:H3'   | 1.79                     | 0.48              |
| 33:DA:396:C:C6     | 33:DA:396:C:C3'   | 2.96                     | 0.48              |
| 33:DA:453:G:C4     | 33:DA:454:G:C8    | 3.01                     | 0.48              |
| 33:DA:520:A:H2'    | 33:DA:521:G:O4'   | 2.14                     | 0.48              |
| 33:DA:666:G:C5     | 33:DA:741:G:C6    | 3.01                     | 0.48              |
| 33:DA:713:G:H2'    | 33:DA:714:G:C1'   | 2.43                     | 0.48              |
| 33:DA:756:C:C2'    | 33:DA:757:U:H5'   | 2.43                     | 0.48              |
| 33:DA:769:G:H4'    | 33:DA:1513:A:H4'  | 1.94                     | 0.48              |
| 33:DA:958:A:C6     | 51:DS:53:GLY:HA3  | 2.47                     | 0.48              |
| 33:DA:1095:U:P     | 33:DA:1108:G:H1   | 2.37                     | 0.48              |
| 33:DA:1246:A:C2    | 33:DA:1292:G:C5   | 3.01                     | 0.48              |
| 33:DA:1288:A:N1    | 33:DA:1371:G:H1'  | 2.29                     | 0.48              |
| 33:DA:1304:G:C2    | 33:DA:1305:G:N2   | 2.81                     | 0.48              |
| 33:DA:1425:U:C2'   | 33:DA:1426:G:H5'  | 2.44                     | 0.48              |
| 33:DA:1428:A:N1    | 33:DA:1473:G:C2   | 2.81                     | 0.48              |
| 33:DA:1508:A:C4    | 33:DA:1509:C:C6   | 3.02                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DC:137:VAL:HG13 | 35:DC:148:ILE:HG21 | 1.96                     | 0.48              |
| 36:DD:67:LEU:O     | 36:DD:71:PHE:CB    | 2.61                     | 0.48              |
| 36:DD:96:ARG:HH21  | 36:DD:114:ARG:NH1  | 2.11                     | 0.48              |
| 38:DF:3:HIS:O      | 38:DF:92:THR:N     | 2.44                     | 0.48              |
| 41:DI:98:ARG:NH1   | 41:DI:103:VAL:HG11 | 2.28                     | 0.48              |
| 43:DK:74:LYS:HE2   | 43:DK:79:LYS:HE2   | 1.96                     | 0.48              |
| 43:DK:96:ILE:C     | 43:DK:98:ALA:N     | 2.66                     | 0.48              |
| 45:DM:101:THR:O    | 45:DM:102:LYS:O    | 2.31                     | 0.48              |
| 48:DP:39:PHE:O     | 48:DP:41:PRO:HD3   | 2.13                     | 0.48              |
| 48:DP:39:PHE:HD1   | 48:DP:50:THR:HG21  | 1.79                     | 0.48              |
| 50:DR:32:ILE:HD12  | 50:DR:67:LEU:HD22  | 1.96                     | 0.48              |
| 1:A0:29:VAL:HG12   | 1:A0:31:LYS:N      | 2.11                     | 0.48              |
| 4:A3:7:ARG:NH2     | 4:A3:11:LYS:CE     | 2.77                     | 0.48              |
| 8:AB:10:A:H2'      | 8:AB:11:C:C6       | 2.49                     | 0.48              |
| 8:AB:65:U:OP2      | 26:AT:76:ARG:NH1   | 2.47                     | 0.48              |
| 8:AB:70:G:N2       | 8:AB:114:U:O2      | 2.46                     | 0.48              |
| 8:AB:83:A:C6       | 8:AB:101:A:OP2     | 2.67                     | 0.48              |
| 8:AB:363:G:C2      | 8:AB:364:C:C4      | 3.01                     | 0.48              |
| 8:AB:374:A:C5      | 8:AB:401:A:N7      | 2.82                     | 0.48              |
| 8:AB:452:G:N2      | 8:AB:458:G:C4      | 2.82                     | 0.48              |
| 8:AB:538:A:C8      | 8:AB:539:G:C8      | 3.02                     | 0.48              |
| 8:AB:577:G:C6      | 8:AB:578:G:O6      | 2.67                     | 0.48              |
| 8:AB:607:U:H2'     | 8:AB:608:A:C5'     | 2.43                     | 0.48              |
| 8:AB:638:G:N1      | 8:AB:639:U:C2      | 2.82                     | 0.48              |
| 8:AB:646:U:OP2     | 8:AB:646:U:C6      | 2.60                     | 0.48              |
| 8:AB:688:U:H5'     | 8:AB:1780:A:C2     | 2.49                     | 0.48              |
| 8:AB:708:G:N2      | 8:AB:724:U:H1'     | 2.28                     | 0.48              |
| 8:AB:825:A:C6      | 8:AB:826:U:C4      | 3.02                     | 0.48              |
| 8:AB:949:G:N1      | 8:AB:950:G:N7      | 2.62                     | 0.48              |
| 8:AB:1010:A:H3'    | 8:AB:1010:A:H8     | 1.77                     | 0.48              |
| 8:AB:1024:G:O6     | 8:AB:1025:G:C6     | 2.67                     | 0.48              |
| 8:AB:1150:C:N4     | 8:AB:1151:A:H62    | 2.12                     | 0.48              |
| 8:AB:1286:A:C4     | 8:AB:1289:C:N4     | 2.81                     | 0.48              |
| 8:AB:1531:C:C2     | 8:AB:1532:A:C8     | 3.01                     | 0.48              |
| 8:AB:1695:G:H2'    | 8:AB:1696:G:O4'    | 2.14                     | 0.48              |
| 8:AB:2228:G:C5     | 8:AB:2229:U:C4     | 3.02                     | 0.48              |
| 8:AB:2262:U:C4     | 8:AB:2279:G:C2     | 3.01                     | 0.48              |
| 8:AB:2357:G:C2     | 8:AB:2361:G:C6     | 3.02                     | 0.48              |
| 8:AB:2391:G:C2     | 8:AB:2424:C:C6     | 3.01                     | 0.48              |
| 8:AB:2492:U:O2'    | 8:AB:2493:U:H5'    | 2.13                     | 0.48              |
| 8:AB:2720:U:C2     | 8:AB:2872:A:N7     | 2.82                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2766:A:H5''   | 8:AB:2767:C:OP2    | 2.14                     | 0.48              |
| 11:AE:178:VAL:HG23 | 11:AE:179:SER:H    | 1.79                     | 0.48              |
| 13:AG:33:THR:O     | 13:AG:34:ARG:HB2   | 2.13                     | 0.48              |
| 13:AG:88:LEU:HD21  | 13:AG:161:VAL:HG22 | 1.94                     | 0.48              |
| 16:AJ:20:ALA:O     | 16:AJ:21:THR:C     | 2.52                     | 0.48              |
| 16:AJ:109:LEU:CB   | 16:AJ:110:PRO:HD2  | 2.35                     | 0.48              |
| 16:AJ:113:PRO:O    | 16:AJ:115:GLY:N    | 2.46                     | 0.48              |
| 17:AK:95:ILE:O     | 17:AK:95:ILE:CG2   | 2.62                     | 0.48              |
| 18:AL:61:LEU:O     | 18:AL:62:PRO:O     | 2.32                     | 0.48              |
| 18:AL:85:VAL:HG13  | 18:AL:85:VAL:O     | 2.14                     | 0.48              |
| 18:AL:141:LYS:C    | 18:AL:142:ILE:HG23 | 2.34                     | 0.48              |
| 20:AN:17:ARG:O     | 20:AN:20:MET:N     | 2.47                     | 0.48              |
| 22:AP:25:VAL:HG12  | 22:AP:27:VAL:CG1   | 2.41                     | 0.48              |
| 22:AP:52:ARG:HG3   | 22:AP:54:LEU:HB2   | 1.96                     | 0.48              |
| 22:AP:93:LYS:NZ    | 22:AP:97:TYR:CE2   | 2.81                     | 0.48              |
| 25:AS:10:ALA:O     | 25:AS:11:ARG:HB3   | 2.13                     | 0.48              |
| 26:AT:10:VAL:CG2   | 26:AT:11:LEU:N     | 2.76                     | 0.48              |
| 26:AT:58:VAL:HA    | 26:AT:85:VAL:HA    | 1.96                     | 0.48              |
| 26:AT:69:ARG:O     | 26:AT:70:HIS:HB2   | 2.13                     | 0.48              |
| 30:AX:36:GLN:NE2   | 30:AX:38:GLN:HG2   | 2.29                     | 0.48              |
| 32:AZ:49:ARG:CG    | 32:AZ:50:ASP:N     | 2.76                     | 0.48              |
| 33:BA:116:A:H8     | 33:BA:116:A:O5'    | 1.96                     | 0.48              |
| 33:BA:642:A:H1'    | 40:BH:104:SER:OG   | 2.13                     | 0.48              |
| 33:BA:648:A:C2     | 33:BA:649:A:N7     | 2.81                     | 0.48              |
| 33:BA:735:C:O2     | 33:BA:735:C:C2'    | 2.57                     | 0.48              |
| 33:BA:785:G:C5     | 33:BA:786:G:C8     | 3.02                     | 0.48              |
| 33:BA:810:C:C4     | 33:BA:811:C:C5     | 3.02                     | 0.48              |
| 33:BA:863:U:O2     | 33:BA:863:U:C2'    | 2.60                     | 0.48              |
| 33:BA:932:C:N3     | 33:BA:1386:G:N1    | 2.62                     | 0.48              |
| 33:BA:987:G:C6     | 33:BA:988:G:C6     | 3.00                     | 0.48              |
| 33:BA:1155:A:C5'   | 33:BA:1155:A:H8    | 2.26                     | 0.48              |
| 33:BA:1220:G:OP1   | 51:BS:36:ARG:HD2   | 2.13                     | 0.48              |
| 33:BA:1392:G:N1    | 33:BA:1393:U:O4    | 2.47                     | 0.48              |
| 33:BA:1445:U:O2    | 33:BA:1458:G:N1    | 2.46                     | 0.48              |
| 34:BB:79:VAL:HA    | 34:BB:213:LEU:HD13 | 1.96                     | 0.48              |
| 35:BC:81:GLU:HG3   | 35:BC:82:ASP:OD1   | 2.14                     | 0.48              |
| 37:BE:24:VAL:CG2   | 37:BE:25:LYS:N     | 2.76                     | 0.48              |
| 52:BT:74:HIS:O     | 52:BT:78:LEU:HD12  | 2.14                     | 0.48              |
| 1:C0:29:VAL:HG13   | 1:C0:30:ASP:N      | 2.29                     | 0.48              |
| 4:C3:5:THR:HG23    | 4:C3:5:THR:O       | 2.14                     | 0.48              |
| 4:C3:59:ALA:HB1    | 4:C3:63:TYR:OH     | 2.14                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:C4:3:VAL:HG12   | 5:C4:4:ARG:N      | 2.29                     | 0.48              |
| 5:C4:9:LYS:HG2    | 5:C4:10:LEU:N     | 2.28                     | 0.48              |
| 7:CA:13:G:H1'     | 7:CA:69:G:N2      | 2.28                     | 0.48              |
| 7:CA:31:C:H41     | 21:CO:32:PRO:CB   | 2.26                     | 0.48              |
| 7:CA:78:A:H2'     | 7:CA:79:G:O4'     | 2.14                     | 0.48              |
| 8:CB:31:C:H3'     | 8:CB:31:C:C6      | 2.49                     | 0.48              |
| 8:CB:80:G:H4'     | 8:CB:346:A:C4     | 2.49                     | 0.48              |
| 8:CB:187:G:C8     | 8:CB:187:G:C3'    | 2.96                     | 0.48              |
| 8:CB:244:A:N3     | 8:CB:255:A:C6     | 2.82                     | 0.48              |
| 8:CB:398:C:P      | 32:CZ:49:ARG:NE   | 2.87                     | 0.48              |
| 8:CB:825:A:C2     | 8:CB:826:U:C2     | 3.01                     | 0.48              |
| 8:CB:836:G:N7     | 8:CB:837:C:N4     | 2.62                     | 0.48              |
| 8:CB:1035:U:O5'   | 8:CB:1035:U:H6    | 1.97                     | 0.48              |
| 8:CB:1107:G:H2'   | 8:CB:1108:U:H5'   | 1.96                     | 0.48              |
| 8:CB:1401:G:C2    | 8:CB:1402:U:C2    | 3.01                     | 0.48              |
| 8:CB:1443:U:C6    | 8:CB:1443:U:C3'   | 2.97                     | 0.48              |
| 8:CB:1455:G:N2    | 8:CB:1456:G:H1'   | 2.28                     | 0.48              |
| 8:CB:1459:G:O5'   | 8:CB:1459:G:C8    | 2.67                     | 0.48              |
| 8:CB:1531:C:C2    | 8:CB:1532:A:C8    | 3.02                     | 0.48              |
| 8:CB:1675:C:H42   | 8:CB:1993:U:H1'   | 1.79                     | 0.48              |
| 8:CB:1796:U:H1'   | 8:CB:1824:G:N2    | 2.29                     | 0.48              |
| 8:CB:1801:A:C8    | 8:CB:2203:U:C6    | 3.02                     | 0.48              |
| 8:CB:1912:A:N1    | 33:DA:1407:C:O2'  | 2.42                     | 0.48              |
| 8:CB:2065:C:C5    | 8:CB:2066:C:H5    | 2.31                     | 0.48              |
| 8:CB:2532:G:H2'   | 8:CB:2533:U:H6    | 1.77                     | 0.48              |
| 8:CB:2535:G:H5''  | 8:CB:2535:G:C8    | 2.48                     | 0.48              |
| 8:CB:2588:G:C4    | 8:CB:2589:A:C8    | 3.02                     | 0.48              |
| 8:CB:2722:G:C4    | 8:CB:2723:C:C6    | 3.02                     | 0.48              |
| 8:CB:2750:A:H4'   | 13:CG:2:ARG:HE    | 1.79                     | 0.48              |
| 8:CB:2824:C:C5    | 8:CB:2825:G:C5    | 3.01                     | 0.48              |
| 8:CB:2886:A:C2    | 8:CB:2887:A:C5    | 3.02                     | 0.48              |
| 9:CC:89:ASN:N     | 9:CC:89:ASN:ND2   | 2.61                     | 0.48              |
| 10:CD:119:ALA:HB1 | 10:CD:123:LYS:HB2 | 1.94                     | 0.48              |
| 11:CE:88:ARG:HD2  | 11:CE:88:ARG:H    | 1.78                     | 0.48              |
| 11:CE:116:ASP:O   | 11:CE:117:ARG:HD3 | 2.13                     | 0.48              |
| 11:CE:140:ASP:O   | 11:CE:141:MET:HB2 | 2.14                     | 0.48              |
| 11:CE:156:ASN:CG  | 11:CE:157:LEU:H   | 2.15                     | 0.48              |
| 13:CG:10:VAL:HG22 | 13:CG:14:VAL:HG11 | 1.96                     | 0.48              |
| 17:CK:66:LYS:HG2  | 17:CK:80:ASP:HA   | 1.94                     | 0.48              |
| 22:CP:29:VAL:O    | 22:CP:30:TRP:C    | 2.52                     | 0.48              |
| 23:CQ:53:LYS:O    | 23:CQ:55:GLN:N    | 2.46                     | 0.48              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 23:CQ:90:ASP:OD2   | 24:CR:10:LYS:CG   | 2.59                     | 0.48              |
| 25:CS:28:LYS:O     | 25:CS:30:SER:N    | 2.47                     | 0.48              |
| 25:CS:56:ALA:CA    | 25:CS:59:GLU:HB2  | 2.38                     | 0.48              |
| 25:CS:95:ARG:CG    | 25:CS:95:ARG:NH1  | 2.76                     | 0.48              |
| 27:CU:84:PHE:H     | 27:CU:92:VAL:CB   | 2.27                     | 0.48              |
| 31:CY:2:LYS:HA     | 31:CY:43:ILE:HG13 | 1.96                     | 0.48              |
| 33:DA:148:G:N3     | 33:DA:1446:A:H2   | 2.12                     | 0.48              |
| 33:DA:220:G:O2'    | 33:DA:221:C:H5'   | 2.14                     | 0.48              |
| 33:DA:291:U:OP2    | 33:DA:305:G:C6    | 2.67                     | 0.48              |
| 33:DA:408:A:N6     | 33:DA:409:U:C2    | 2.81                     | 0.48              |
| 33:DA:496:A:H2'    | 33:DA:497:G:C8    | 2.49                     | 0.48              |
| 33:DA:506:G:C2     | 33:DA:507:C:N3    | 2.82                     | 0.48              |
| 33:DA:559:A:H4'    | 33:DA:560:A:C5'   | 2.38                     | 0.48              |
| 33:DA:669:G:C2     | 33:DA:670:G:C4    | 3.02                     | 0.48              |
| 33:DA:677:U:H3     | 33:DA:714:G:H22   | 1.62                     | 0.48              |
| 33:DA:806:C:C2     | 33:DA:807:A:N7    | 2.81                     | 0.48              |
| 33:DA:1067:A:H1'   | 33:DA:1068:G:C8   | 2.49                     | 0.48              |
| 33:DA:1068:G:H5''  | 33:DA:1068:G:C8   | 2.32                     | 0.48              |
| 33:DA:1102:A:C6    | 33:DA:1103:C:N4   | 2.81                     | 0.48              |
| 33:DA:1161:C:H2'   | 33:DA:1162:C:H6   | 1.78                     | 0.48              |
| 33:DA:1264:U:H3    | 33:DA:1271:A:N6   | 2.11                     | 0.48              |
| 33:DA:1382:C:H5'   | 39:DG:78:ARG:NE   | 2.29                     | 0.48              |
| 33:DA:1435:G:N1    | 33:DA:1436:U:C4   | 2.82                     | 0.48              |
| 35:DC:53:ARG:O     | 35:DC:54:ILE:CB   | 2.62                     | 0.48              |
| 35:DC:143:LEU:HD13 | 35:DC:143:LEU:N   | 2.28                     | 0.48              |
| 38:DF:73:GLU:O     | 38:DF:74:LEU:C    | 2.52                     | 0.48              |
| 40:DH:9:MET:O      | 40:DH:10:LEU:HD22 | 2.13                     | 0.48              |
| 40:DH:48:PHE:HA    | 40:DH:59:GLU:O    | 2.14                     | 0.48              |
| 42:DJ:57:VAL:HG13  | 42:DJ:58:ASN:N    | 2.29                     | 0.48              |
| 43:DK:21:HIS:ND1   | 43:DK:34:THR:HG21 | 2.29                     | 0.48              |
| 43:DK:115:ILE:HA   | 43:DK:116:PRO:HD3 | 1.67                     | 0.48              |
| 4:A3:11:LYS:CB     | 18:AL:63:LYS:HG3  | 2.43                     | 0.48              |
| 4:A3:23:HIS:C      | 4:A3:45:PRO:HB3   | 2.34                     | 0.48              |
| 5:A4:2:LYS:HG3     | 8:AB:2526:G:H1'   | 1.94                     | 0.48              |
| 5:A4:2:LYS:HE2     | 5:A4:36:ARG:CB    | 2.42                     | 0.48              |
| 7:AA:44:G:N2       | 7:AA:46:A:N6      | 2.56                     | 0.48              |
| 7:AA:99:A:C2'      | 7:AA:100:G:H5'    | 2.44                     | 0.48              |
| 8:AB:64:A:C2       | 26:AT:69:ARG:NH2  | 2.81                     | 0.48              |
| 8:AB:193:U:C4      | 8:AB:194:G:N7     | 2.82                     | 0.48              |
| 8:AB:289:G:C6      | 8:AB:352:A:C6     | 3.02                     | 0.48              |
| 8:AB:396:G:OP1     | 32:AZ:11:GLU:OE2  | 2.31                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:536:G:C8     | 8:AB:537:G:C8     | 3.01                     | 0.48              |
| 8:AB:604:G:O6     | 8:AB:625:G:N1     | 2.47                     | 0.48              |
| 8:AB:612:G:C2     | 8:AB:617:G:O6     | 2.67                     | 0.48              |
| 8:AB:738:G:C2     | 8:AB:759:G:C6     | 3.01                     | 0.48              |
| 8:AB:813:U:C2     | 8:AB:814:C:C5     | 3.02                     | 0.48              |
| 8:AB:837:C:H6     | 8:AB:837:C:O5'    | 1.95                     | 0.48              |
| 8:AB:1000:A:C5    | 8:AB:1155:A:C5    | 3.02                     | 0.48              |
| 8:AB:1028:A:H2    | 8:AB:1029:A:C2    | 2.31                     | 0.48              |
| 8:AB:1053:C:N4    | 8:AB:1107:G:N1    | 2.62                     | 0.48              |
| 8:AB:1068:G:O2'   | 8:AB:1096:A:H1'   | 2.14                     | 0.48              |
| 8:AB:1182:G:C2    | 8:AB:1183:U:H1'   | 2.49                     | 0.48              |
| 8:AB:1236:G:O2'   | 8:AB:1237:A:H8    | 1.95                     | 0.48              |
| 8:AB:1298:C:O2    | 8:AB:1302:A:O2'   | 2.31                     | 0.48              |
| 8:AB:1375:U:C5    | 8:AB:1376:C:H5    | 2.32                     | 0.48              |
| 8:AB:1704:C:H2'   | 8:AB:1704:C:O2    | 2.14                     | 0.48              |
| 8:AB:1734:G:C2    | 8:AB:1735:A:C8    | 3.02                     | 0.48              |
| 8:AB:1972:G:N3    | 8:AB:1972:G:H2'   | 2.29                     | 0.48              |
| 8:AB:2277:G:C5    | 8:AB:2278:A:N7    | 2.82                     | 0.48              |
| 8:AB:2394:C:OP1   | 18:AL:63:LYS:CB   | 2.61                     | 0.48              |
| 8:AB:2454:G:C6    | 8:AB:2499:C:N4    | 2.82                     | 0.48              |
| 8:AB:2485:G:C6    | 8:AB:2486:C:C5    | 3.01                     | 0.48              |
| 8:AB:2736:A:N3    | 8:AB:2736:A:H2'   | 2.28                     | 0.48              |
| 9:AC:181:ARG:HH22 | 9:AC:260:LYS:HZ3  | 1.62                     | 0.48              |
| 9:AC:181:ARG:HB2  | 9:AC:263:ASP:CB   | 2.44                     | 0.48              |
| 10:AD:148:GLN:HB3 | 10:AD:151:THR:CG2 | 2.43                     | 0.48              |
| 11:AE:49:ARG:C    | 11:AE:51:GLU:H    | 2.15                     | 0.48              |
| 13:AG:86:LEU:HA   | 13:AG:162:ARG:O   | 2.14                     | 0.48              |
| 14:AH:78:VAL:HG11 | 14:AH:102:ALA:CB  | 2.28                     | 0.48              |
| 16:AJ:87:ALA:O    | 16:AJ:88:THR:HG23 | 2.14                     | 0.48              |
| 19:AM:110:GLU:C   | 19:AM:112:LEU:N   | 2.66                     | 0.48              |
| 20:AN:87:PHE:C    | 20:AN:89:SER:H    | 2.16                     | 0.48              |
| 20:AN:92:GLY:O    | 20:AN:94:TYR:N    | 2.46                     | 0.48              |
| 22:AP:76:HIS:O    | 22:AP:77:SER:OG   | 2.27                     | 0.48              |
| 23:AQ:67:ALA:HB1  | 23:AQ:105:PHE:CE2 | 2.49                     | 0.48              |
| 25:AS:24:ILE:CB   | 25:AS:28:LYS:HD2  | 2.43                     | 0.48              |
| 25:AS:31:GLN:O    | 25:AS:35:ILE:HG22 | 2.14                     | 0.48              |
| 27:AU:61:GLU:OE2  | 27:AU:63:ALA:HB2  | 2.13                     | 0.48              |
| 28:AV:54:ALA:C    | 28:AV:56:PHE:H    | 2.16                     | 0.48              |
| 30:AX:16:THR:HG23 | 30:AX:20:ASN:CG   | 2.35                     | 0.48              |
| 33:BA:15:G:C2     | 33:BA:16:A:C4     | 3.02                     | 0.48              |
| 33:BA:233:C:C2'   | 33:BA:234:C:H5'   | 2.44                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:247:G:C6    | 33:BA:248:C:C5     | 3.02                     | 0.48              |
| 33:BA:444:G:C6    | 33:BA:491:G:N1     | 2.82                     | 0.48              |
| 33:BA:486:U:H2'   | 33:BA:487:A:C8     | 2.49                     | 0.48              |
| 33:BA:593:U:C2    | 33:BA:594:U:C6     | 3.01                     | 0.48              |
| 33:BA:624:C:H2'   | 33:BA:625:U:H6     | 1.77                     | 0.48              |
| 33:BA:734:G:H21   | 33:BA:735:C:H1'    | 1.78                     | 0.48              |
| 33:BA:785:G:C6    | 33:BA:786:G:C8     | 3.02                     | 0.48              |
| 33:BA:837:U:H6    | 33:BA:837:U:O5'    | 1.97                     | 0.48              |
| 33:BA:885:G:H1'   | 33:BA:914:A:N1     | 2.28                     | 0.48              |
| 33:BA:937:A:H2    | 33:BA:1377:A:HO2'  | 1.62                     | 0.48              |
| 33:BA:966:G:H4'   | 33:BA:969:A:H62    | 1.78                     | 0.48              |
| 33:BA:1008:U:H2'  | 33:BA:1009:U:O4'   | 2.14                     | 0.48              |
| 33:BA:1221:G:N2   | 33:BA:1222:G:H1'   | 2.28                     | 0.48              |
| 33:BA:1283:U:O2   | 33:BA:1284:C:C6    | 2.66                     | 0.48              |
| 33:BA:1465:A:C8   | 33:BA:1465:A:H3'   | 2.49                     | 0.48              |
| 34:BB:107:ARG:HA  | 34:BB:110:ILE:CD1  | 2.43                     | 0.48              |
| 35:BC:39:ARG:HE   | 35:BC:56:ILE:HD11  | 1.79                     | 0.48              |
| 35:BC:50:SER:C    | 35:BC:114:LEU:HD21 | 2.35                     | 0.48              |
| 36:BD:53:GLN:HB3  | 36:BD:202:LEU:HD22 | 1.95                     | 0.48              |
| 38:BF:11:HIS:CG   | 38:BF:12:PRO:HD2   | 2.49                     | 0.48              |
| 38:BF:78:PHE:HD1  | 38:BF:78:PHE:H     | 1.60                     | 0.48              |
| 39:BG:17:PHE:HE2  | 39:BG:58:LEU:HD22  | 1.78                     | 0.48              |
| 39:BG:102:TRP:CD1 | 39:BG:102:TRP:N    | 2.72                     | 0.48              |
| 41:BI:9:GLY:HA2   | 41:BI:80:HIS:HB3   | 1.95                     | 0.48              |
| 47:BO:35:ILE:HD12 | 47:BO:55:LEU:CD1   | 2.44                     | 0.48              |
| 48:BP:50:THR:HG22 | 48:BP:51:ARG:H     | 1.77                     | 0.48              |
| 50:BR:41:SER:O    | 50:BR:45:GLY:HA2   | 2.13                     | 0.48              |
| 52:BT:8:LYS:O     | 52:BT:12:GLN:N     | 2.41                     | 0.48              |
| 2:C1:8:ILE:O      | 2:C1:24:LYS:HB2    | 2.14                     | 0.48              |
| 3:C2:3:ARG:HG3    | 8:CB:1613:G:H4'    | 1.96                     | 0.48              |
| 3:C2:33:ARG:CA    | 3:C2:37:LYS:HG3    | 2.40                     | 0.48              |
| 4:C3:23:HIS:CD2   | 4:C3:47:ALA:O      | 2.67                     | 0.48              |
| 4:C3:39:ARG:HH21  | 8:CB:2363:G:H5''   | 1.78                     | 0.48              |
| 5:C4:24:ARG:HB2   | 5:C4:36:ARG:C      | 2.34                     | 0.48              |
| 7:CA:109:A:O2'    | 7:CA:110:C:H5'     | 2.14                     | 0.48              |
| 8:CB:374:A:N3     | 8:CB:375:G:C8      | 2.82                     | 0.48              |
| 8:CB:518:G:H5''   | 8:CB:518:G:C8      | 2.48                     | 0.48              |
| 8:CB:570:G:H22    | 8:CB:2498:C:H4'    | 1.79                     | 0.48              |
| 8:CB:583:G:C2     | 8:CB:584:C:C4      | 3.01                     | 0.48              |
| 8:CB:690:G:H5''   | 8:CB:690:G:C8      | 2.48                     | 0.48              |
| 8:CB:748:G:N7     | 8:CB:750:A:C8      | 2.81                     | 0.48              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 8:CB:796:C:H6    | 8:CB:796:C:C3'     | 2.17                     | 0.48              |
| 8:CB:910:A:H2    | 8:CB:911:A:C2      | 2.31                     | 0.48              |
| 8:CB:945:A:C2    | 8:CB:2448:A:N9     | 2.82                     | 0.48              |
| 8:CB:1257:C:O2   | 8:CB:1257:C:C2'    | 2.59                     | 0.48              |
| 8:CB:1356:G:H2'  | 8:CB:1357:C:C6     | 2.48                     | 0.48              |
| 8:CB:1559:U:C6   | 8:CB:1559:U:H5''   | 2.48                     | 0.48              |
| 8:CB:1657:U:OP2  | 10:CD:141:ARG:HG3  | 2.14                     | 0.48              |
| 8:CB:1684:G:C5   | 8:CB:1685:C:C4     | 3.01                     | 0.48              |
| 8:CB:1734:G:N3   | 8:CB:1735:A:C8     | 2.82                     | 0.48              |
| 8:CB:1812:U:H2'  | 8:CB:1813:G:C8     | 2.49                     | 0.48              |
| 8:CB:1960:A:C8   | 8:CB:1961:C:H5     | 2.32                     | 0.48              |
| 8:CB:2003:A:H8   | 8:CB:2003:A:O5'    | 1.97                     | 0.48              |
| 8:CB:2011:U:C5   | 8:CB:2012:G:N7     | 2.82                     | 0.48              |
| 8:CB:2090:A:C2   | 8:CB:2230:G:C6     | 3.01                     | 0.48              |
| 8:CB:2135:A:C6   | 8:CB:2136:G:C8     | 3.01                     | 0.48              |
| 8:CB:2213:U:C2   | 8:CB:2213:U:C3'    | 2.97                     | 0.48              |
| 8:CB:2519:U:C4   | 8:CB:2542:A:C5     | 3.02                     | 0.48              |
| 8:CB:2542:A:H5'' | 8:CB:2766:A:O2'    | 2.14                     | 0.48              |
| 8:CB:2549:G:C2'  | 8:CB:2550:G:H5'    | 2.43                     | 0.48              |
| 8:CB:2552:U:C4   | 8:CB:2554:U:C5'    | 2.97                     | 0.48              |
| 8:CB:2574:G:C2   | 10:CD:147:GLY:HA3  | 2.49                     | 0.48              |
| 8:CB:2685:G:N3   | 8:CB:2686:G:C8     | 2.82                     | 0.48              |
| 8:CB:2688:G:N7   | 8:CB:2719:G:C6     | 2.82                     | 0.48              |
| 8:CB:2689:U:C2   | 8:CB:2713:U:C6     | 3.01                     | 0.48              |
| 8:CB:2760:C:H5'  | 8:CB:2761:A:OP2    | 2.14                     | 0.48              |
| 10:CD:112:THR:O  | 10:CD:113:SER:C    | 2.51                     | 0.48              |
| 10:CD:186:LEU:O  | 10:CD:187:LEU:C    | 2.52                     | 0.48              |
| 11:CE:49:ARG:C   | 11:CE:51:GLU:N     | 2.67                     | 0.48              |
| 11:CE:50:ALA:O   | 11:CE:74:LYS:CE    | 2.61                     | 0.48              |
| 11:CE:67:ARG:HD2 | 11:CE:67:ARG:N     | 2.29                     | 0.48              |
| 12:CF:172:PHE:N  | 12:CF:172:PHE:CD1  | 2.80                     | 0.48              |
| 16:CJ:40:HIS:O   | 16:CJ:41:LYS:C     | 2.52                     | 0.48              |
| 17:CK:7:MET:HA   | 17:CK:19:VAL:O     | 2.14                     | 0.48              |
| 17:CK:49:ARG:HB2 | 17:CK:49:ARG:HH11  | 1.78                     | 0.48              |
| 18:CL:42:SER:OG  | 18:CL:47:ARG:NH2   | 2.46                     | 0.48              |
| 19:CM:114:ARG:HE | 19:CM:117:PHE:HD2  | 1.62                     | 0.48              |
| 20:CN:21:PHE:N   | 20:CN:21:PHE:CD1   | 2.82                     | 0.48              |
| 21:CO:10:ARG:NE  | 21:CO:94:ARG:HD3   | 2.29                     | 0.48              |
| 21:CO:83:LEU:N   | 21:CO:87:ILE:HG21  | 2.29                     | 0.48              |
| 21:CO:100:HIS:H  | 21:CO:103:VAL:HG23 | 1.77                     | 0.48              |
| 22:CP:109:ILE:O  | 22:CP:110:LYS:O    | 2.31                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 23:CQ:68:ALA:HB1  | 23:CQ:73:ILE:HG21  | 1.92                     | 0.48              |
| 24:CR:35:PHE:CE1  | 24:CR:65:ALA:O     | 2.67                     | 0.48              |
| 24:CR:76:LYS:O    | 24:CR:77:PHE:CG    | 2.66                     | 0.48              |
| 26:CT:62:VAL:O    | 26:CT:80:TRP:HB3   | 2.14                     | 0.48              |
| 27:CU:59:GLU:CD   | 27:CU:62:ALA:HB2   | 2.35                     | 0.48              |
| 29:CW:43:LYS:HB2  | 29:CW:76:ARG:O     | 2.13                     | 0.48              |
| 31:CY:31:ILE:HD13 | 31:CY:31:ILE:H     | 1.79                     | 0.48              |
| 32:CZ:18:CYS:O    | 32:CZ:19:GLY:O     | 2.31                     | 0.48              |
| 32:CZ:31:ASP:O    | 32:CZ:32:LEU:CB    | 2.62                     | 0.48              |
| 33:DA:318:G:C6    | 33:DA:319:G:N7     | 2.81                     | 0.48              |
| 33:DA:408:A:N1    | 33:DA:409:U:H1'    | 2.27                     | 0.48              |
| 33:DA:534:U:O5'   | 33:DA:534:U:C6     | 2.67                     | 0.48              |
| 33:DA:540:G:C6    | 33:DA:541:G:C5     | 3.01                     | 0.48              |
| 33:DA:545:C:H5'   | 36:DD:68:GLU:CG    | 2.43                     | 0.48              |
| 33:DA:579:A:C5    | 33:DA:580:C:H5     | 2.31                     | 0.48              |
| 33:DA:654:G:C5    | 33:DA:655:A:N7     | 2.81                     | 0.48              |
| 33:DA:718:A:H5'   | 33:DA:720:C:H41    | 1.78                     | 0.48              |
| 33:DA:745:G:OP1   | 33:DA:852:G:H5'    | 2.13                     | 0.48              |
| 33:DA:1165:U:H3'  | 33:DA:1166:G:H8    | 1.79                     | 0.48              |
| 33:DA:1169:A:C5   | 33:DA:1170:A:N7    | 2.82                     | 0.48              |
| 33:DA:1187:G:H2'  | 33:DA:1188:A:H8    | 1.79                     | 0.48              |
| 33:DA:1234:C:O2'  | 33:DA:1235:U:H5'   | 2.13                     | 0.48              |
| 33:DA:1258:G:H2'  | 33:DA:1259:C:C6    | 2.49                     | 0.48              |
| 33:DA:1258:G:C2   | 33:DA:1278:G:N2    | 2.81                     | 0.48              |
| 33:DA:1315:U:H2'  | 33:DA:1316:G:C1'   | 2.43                     | 0.48              |
| 34:DB:62:ARG:C    | 34:DB:64:GLY:N     | 2.65                     | 0.48              |
| 34:DB:116:LEU:CB  | 34:DB:140:LEU:HD21 | 2.40                     | 0.48              |
| 35:DC:67:ILE:CG1  | 35:DC:68:HIS:N     | 2.77                     | 0.48              |
| 39:DG:10:LYS:NZ   | 39:DG:20:GLU:OE2   | 2.46                     | 0.48              |
| 47:DO:52:ARG:CA   | 47:DO:55:LEU:HB3   | 2.44                     | 0.48              |
| 53:DU:20:ARG:HG2  | 53:DU:24:LYS:HE3   | 1.96                     | 0.48              |
| 4:A3:4:LYS:HE2    | 4:A3:59:ALA:C      | 2.35                     | 0.48              |
| 5:A4:27:CYS:SG    | 5:A4:33:HIS:NE2    | 2.87                     | 0.48              |
| 7:AA:7:G:O2'      | 7:AA:8:C:H5'       | 2.14                     | 0.48              |
| 7:AA:16:G:O2'     | 7:AA:17:C:H5'      | 2.13                     | 0.48              |
| 8:AB:41:C:H6      | 8:AB:41:C:O5'      | 1.96                     | 0.48              |
| 8:AB:73:A:H2'     | 8:AB:74:A:OP2      | 2.13                     | 0.48              |
| 8:AB:197:A:N7     | 8:AB:2430:A:C4     | 2.82                     | 0.48              |
| 8:AB:198:C:O2'    | 8:AB:199:A:O5'     | 2.31                     | 0.48              |
| 8:AB:309:A:C5     | 8:AB:330:A:N1      | 2.82                     | 0.48              |
| 8:AB:326:G:H2'    | 8:AB:327:G:C8      | 2.49                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:337:C:O2     | 8:AB:338:G:O4'    | 2.32                     | 0.48              |
| 8:AB:340:A:H2'    | 8:AB:341:C:C5'    | 2.44                     | 0.48              |
| 8:AB:410:G:C2     | 8:AB:2407:A:C6    | 3.02                     | 0.48              |
| 8:AB:478:A:N6     | 8:AB:480:A:N6     | 2.61                     | 0.48              |
| 8:AB:581:C:H2'    | 8:AB:582:A:C8     | 2.49                     | 0.48              |
| 8:AB:600:G:H1'    | 11:AE:100:MET:CE  | 2.43                     | 0.48              |
| 8:AB:687:C:C4     | 8:AB:688:U:N3     | 2.81                     | 0.48              |
| 8:AB:759:G:H2'    | 8:AB:760:G:H5'    | 1.96                     | 0.48              |
| 8:AB:954:G:OP1    | 19:AM:17:ASN:O    | 2.32                     | 0.48              |
| 8:AB:979:A:C2     | 8:AB:982:C:N3     | 2.82                     | 0.48              |
| 8:AB:1273:U:C5    | 8:AB:2003:A:O4'   | 2.67                     | 0.48              |
| 8:AB:1586:A:C8    | 8:AB:1586:A:C3'   | 2.97                     | 0.48              |
| 8:AB:1675:C:C5    | 8:AB:1676:A:C5    | 3.01                     | 0.48              |
| 8:AB:1797:G:O3'   | 9:AC:253:GLY:HA2  | 2.14                     | 0.48              |
| 8:AB:1858:A:N6    | 8:AB:1884:G:H1'   | 2.29                     | 0.48              |
| 8:AB:2010:G:C2'   | 8:AB:2011:U:H5'   | 2.44                     | 0.48              |
| 8:AB:2100:G:C5    | 8:AB:2190:G:C2    | 3.02                     | 0.48              |
| 8:AB:2148:G:O5'   | 8:AB:2148:G:C8    | 2.66                     | 0.48              |
| 8:AB:2270:A:C8    | 8:AB:2271:G:C8    | 3.02                     | 0.48              |
| 8:AB:2442:C:C4    | 8:AB:2443:C:C5    | 3.02                     | 0.48              |
| 8:AB:2447:G:N3    | 8:AB:2501:C:C4    | 2.81                     | 0.48              |
| 8:AB:2684:U:H4'   | 17:AK:76:VAL:CG2  | 2.39                     | 0.48              |
| 9:AC:124:LYS:CB   | 9:AC:125:PRO:CD   | 2.91                     | 0.48              |
| 9:AC:141:HIS:HE1  | 9:AC:156:SER:OG   | 1.97                     | 0.48              |
| 9:AC:164:VAL:O    | 9:AC:165:ALA:HB3  | 2.14                     | 0.48              |
| 9:AC:167:ASP:CB   | 9:AC:172:THR:HG23 | 2.44                     | 0.48              |
| 10:AD:92:VAL:HG13 | 10:AD:94:GLN:H    | 1.79                     | 0.48              |
| 11:AE:64:GLY:C    | 11:AE:66:GLY:H    | 2.16                     | 0.48              |
| 15:AI:96:LYS:HD2  | 15:AI:96:LYS:N    | 2.29                     | 0.48              |
| 16:AJ:116:ARG:CG  | 16:AJ:116:ARG:NH1 | 2.69                     | 0.48              |
| 18:AL:5:THR:O     | 18:AL:6:LEU:HB2   | 2.14                     | 0.48              |
| 19:AM:7:THR:CG2   | 19:AM:10:ARG:CZ   | 2.92                     | 0.48              |
| 19:AM:133:LYS:NZ  | 28:AV:76:ASP:HA   | 2.29                     | 0.48              |
| 20:AN:39:PRO:O    | 20:AN:40:LYS:C    | 2.51                     | 0.48              |
| 22:AP:6:GLN:OE1   | 22:AP:6:GLN:N     | 2.47                     | 0.48              |
| 23:AQ:80:ASN:HD21 | 23:AQ:84:LYS:HE2  | 1.79                     | 0.48              |
| 26:AT:84:TYR:O    | 26:AT:85:VAL:HG22 | 2.14                     | 0.48              |
| 29:AW:28:GLU:HB3  | 29:AW:30:VAL:HG23 | 1.95                     | 0.48              |
| 31:AY:56:VAL:O    | 31:AY:57:GLU:C    | 2.52                     | 0.48              |
| 33:BA:42:G:H22    | 33:BA:401:C:C1'   | 2.15                     | 0.48              |
| 33:BA:101:A:C6    | 33:BA:102:G:C8    | 3.01                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:363:A:N6    | 33:BA:364:A:N1    | 2.62                     | 0.48              |
| 33:BA:479:U:H2'   | 33:BA:480:U:H5'   | 1.96                     | 0.48              |
| 33:BA:547:A:H5'   | 33:BA:548:G:OP1   | 2.14                     | 0.48              |
| 33:BA:704:A:H2'   | 33:BA:705:G:O4'   | 2.14                     | 0.48              |
| 33:BA:778:G:H3'   | 33:BA:778:G:C8    | 2.49                     | 0.48              |
| 33:BA:830:G:C2    | 33:BA:857:C:N3    | 2.82                     | 0.48              |
| 33:BA:949:A:C4    | 33:BA:1233:G:N2   | 2.82                     | 0.48              |
| 33:BA:957:U:H3    | 33:BA:960:U:H5''  | 1.79                     | 0.48              |
| 33:BA:1014:A:O4'  | 51:BS:33:TRP:CE3  | 2.67                     | 0.48              |
| 33:BA:1142:G:H3'  | 33:BA:1143:G:H8   | 1.78                     | 0.48              |
| 33:BA:1284:C:O5'  | 33:BA:1285:A:H5'' | 2.14                     | 0.48              |
| 33:BA:1308:U:OP1  | 45:BM:95:PRO:HA   | 2.14                     | 0.48              |
| 33:BA:1378:C:H4'  | 33:BA:1378:C:OP1  | 2.13                     | 0.48              |
| 33:BA:1500:A:P    | 55:BA:5276:HOH:O  | 2.72                     | 0.48              |
| 34:BB:139:GLU:O   | 34:BB:142:LYS:HB2 | 2.14                     | 0.48              |
| 35:BC:70:ALA:CB   | 35:BC:108:PRO:HG3 | 2.44                     | 0.48              |
| 39:BG:70:PRO:HB3  | 39:BG:141:HIS:HE1 | 1.79                     | 0.48              |
| 40:BH:24:VAL:HG22 | 40:BH:25:THR:N    | 2.29                     | 0.48              |
| 44:BL:35:ARG:HH22 | 44:BL:75:GLU:CG   | 2.25                     | 0.48              |
| 2:C1:31:GLU:O     | 2:C1:33:LEU:N     | 2.47                     | 0.48              |
| 7:CA:29:A:C2      | 7:CA:56:G:N2      | 2.80                     | 0.48              |
| 7:CA:99:A:C6      | 7:CA:100:G:C5     | 3.02                     | 0.48              |
| 8:CB:92:U:N3      | 8:CB:93:G:C8      | 2.82                     | 0.48              |
| 8:CB:185:G:O2'    | 8:CB:186:G:H5'    | 2.13                     | 0.48              |
| 8:CB:300:A:C5     | 8:CB:334:C:H4'    | 2.48                     | 0.48              |
| 8:CB:321:U:H1'    | 11:CE:159:LEU:HG  | 1.94                     | 0.48              |
| 8:CB:644:A:C2     | 8:CB:646:U:O4     | 2.62                     | 0.48              |
| 8:CB:751:A:C5     | 8:CB:789:A:N1     | 2.82                     | 0.48              |
| 8:CB:780:G:N2     | 9:CC:228:ASP:OD2  | 2.44                     | 0.48              |
| 8:CB:1026:G:N3    | 8:CB:1027:A:N7    | 2.61                     | 0.48              |
| 8:CB:1027:A:C6    | 8:CB:1126:A:N3    | 2.82                     | 0.48              |
| 8:CB:1028:A:C2    | 8:CB:1029:A:C6    | 3.01                     | 0.48              |
| 8:CB:1042:G:C6    | 8:CB:1043:C:C4    | 3.01                     | 0.48              |
| 8:CB:1115:G:H5''  | 8:CB:1115:G:C8    | 2.48                     | 0.48              |
| 8:CB:1223:G:C6    | 8:CB:1227:G:C6    | 3.01                     | 0.48              |
| 8:CB:1265:A:C8    | 8:CB:1267:U:C5    | 3.01                     | 0.48              |
| 8:CB:1276:A:H5''  | 8:CB:1276:A:H8    | 1.79                     | 0.48              |
| 8:CB:1430:G:C4    | 8:CB:1431:A:C8    | 3.01                     | 0.48              |
| 8:CB:1433:A:C2    | 8:CB:1434:A:C5    | 3.02                     | 0.48              |
| 8:CB:1662:U:H2'   | 8:CB:1662:U:O2    | 2.14                     | 0.48              |
| 8:CB:1734:G:H8    | 8:CB:1734:G:O5'   | 1.97                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1765:U:O2    | 8:CB:1765:U:C2'   | 2.61                     | 0.48              |
| 8:CB:1797:G:C5    | 8:CB:1798:U:C4    | 3.02                     | 0.48              |
| 8:CB:1890:A:N1    | 8:CB:2234:G:O2'   | 2.41                     | 0.48              |
| 8:CB:1947:C:C2    | 8:CB:1948:G:C8    | 3.01                     | 0.48              |
| 8:CB:1998:A:C5    | 8:CB:1999:C:C5    | 3.02                     | 0.48              |
| 8:CB:2104:C:H3'   | 8:CB:2104:C:H6    | 1.75                     | 0.48              |
| 8:CB:2199:A:N1    | 8:CB:2225:A:C4    | 2.82                     | 0.48              |
| 8:CB:2207:C:C2    | 8:CB:2218:G:C2    | 3.02                     | 0.48              |
| 8:CB:2280:G:H2'   | 8:CB:2388:A:N1    | 2.29                     | 0.48              |
| 8:CB:2309:A:H5''  | 8:CB:2310:C:OP2   | 2.14                     | 0.48              |
| 8:CB:2526:G:C2'   | 8:CB:2527:C:H5'   | 2.43                     | 0.48              |
| 8:CB:2682:A:C2    | 8:CB:2683:C:C4    | 3.01                     | 0.48              |
| 8:CB:2837:A:C5    | 8:CB:2838:G:N7    | 2.82                     | 0.48              |
| 9:CC:119:VAL:O    | 9:CC:120:ASP:C    | 2.52                     | 0.48              |
| 10:CD:41:ALA:O    | 10:CD:42:ASN:HB3  | 2.14                     | 0.48              |
| 11:CE:113:VAL:O   | 11:CE:114:ARG:C   | 2.51                     | 0.48              |
| 14:CH:25:TYR:O    | 14:CH:31:VAL:CG2  | 2.61                     | 0.48              |
| 17:CK:68:GLY:HA3  | 17:CK:78:ARG:HB3  | 1.95                     | 0.48              |
| 18:CL:55:MET:CB   | 18:CL:56:PRO:CD   | 2.89                     | 0.48              |
| 19:CM:36:VAL:CG1  | 19:CM:125:PRO:HD3 | 2.44                     | 0.48              |
| 19:CM:71:LYS:O    | 19:CM:73:ILE:N    | 2.44                     | 0.48              |
| 20:CN:2:ARG:HH21  | 20:CN:3:HIS:C     | 2.17                     | 0.48              |
| 20:CN:18:GLN:O    | 20:CN:19:ALA:C    | 2.49                     | 0.48              |
| 21:CO:93:ASP:OD2  | 21:CO:117:PHE:CE2 | 2.66                     | 0.48              |
| 22:CP:13:LYS:HB3  | 22:CP:13:LYS:NZ   | 2.28                     | 0.48              |
| 22:CP:18:SER:C    | 22:CP:20:ARG:N    | 2.67                     | 0.48              |
| 23:CQ:67:ALA:HB1  | 23:CQ:105:PHE:CE2 | 2.48                     | 0.48              |
| 23:CQ:99:VAL:HG13 | 23:CQ:100:PHE:N   | 2.28                     | 0.48              |
| 25:CS:27:LYS:HD3  | 25:CS:28:LYS:HE3  | 1.95                     | 0.48              |
| 25:CS:56:ALA:C    | 25:CS:59:GLU:H    | 2.17                     | 0.48              |
| 27:CU:98:ASN:N    | 27:CU:98:ASN:ND2  | 2.62                     | 0.48              |
| 29:CW:42:THR:CG2  | 29:CW:67:LYS:HB2  | 2.40                     | 0.48              |
| 33:DA:98:A:O2'    | 33:DA:99:C:H5'    | 2.13                     | 0.48              |
| 33:DA:115:G:C2    | 33:DA:313:A:C2    | 3.02                     | 0.48              |
| 33:DA:309:A:C2    | 33:DA:310:G:C5    | 3.02                     | 0.48              |
| 33:DA:362:G:C8    | 33:DA:362:G:C3'   | 2.97                     | 0.48              |
| 33:DA:375:U:H4'   | 48:DP:17:TYR:HE2  | 1.79                     | 0.48              |
| 33:DA:523:A:H61   | 44:DL:88:ASP:HB2  | 1.78                     | 0.48              |
| 33:DA:636:U:OP1   | 49:DQ:5:ARG:CZ    | 2.62                     | 0.48              |
| 33:DA:639:G:C4    | 33:DA:640:A:H8    | 2.32                     | 0.48              |
| 33:DA:657:U:H1'   | 47:DO:22:GLY:HA2  | 1.96                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:770:C:O2    | 33:DA:770:C:H2'   | 2.13                     | 0.48              |
| 33:DA:773:G:H2'   | 33:DA:774:G:O5'   | 2.14                     | 0.48              |
| 33:DA:800:G:C3'   | 33:DA:800:G:C8    | 2.97                     | 0.48              |
| 33:DA:1060:U:H3'  | 35:DC:1:GLY:HA3   | 1.96                     | 0.48              |
| 33:DA:1251:A:O4'  | 33:DA:1370:G:H4'  | 2.14                     | 0.48              |
| 33:DA:1413:A:C2   | 33:DA:1414:U:C2   | 3.01                     | 0.48              |
| 33:DA:1475:G:C2'  | 33:DA:1476:A:O5'  | 2.62                     | 0.48              |
| 34:DB:41:ASN:OD1  | 34:DB:43:GLU:HG3  | 2.14                     | 0.48              |
| 36:DD:11:SER:O    | 36:DD:12:ARG:C    | 2.52                     | 0.48              |
| 36:DD:64:TYR:HB2  | 36:DD:66:VAL:HG12 | 1.96                     | 0.48              |
| 39:DG:14:ASP:HB2  | 39:DG:19:SER:H    | 1.78                     | 0.48              |
| 39:DG:19:SER:HB2  | 39:DG:21:LEU:HG   | 1.96                     | 0.48              |
| 40:DH:77:VAL:O    | 40:DH:84:ILE:HD12 | 2.14                     | 0.48              |
| 42:DJ:66:GLU:OE2  | 42:DJ:68:ARG:NH2  | 2.46                     | 0.48              |
| 44:DL:30:ARG:HB3  | 44:DL:57:THR:HG21 | 1.96                     | 0.48              |
| 46:DN:100:TRP:HE3 | 46:DN:100:TRP:N   | 2.12                     | 0.48              |
| 48:DP:6:LEU:HD22  | 48:DP:6:LEU:N     | 2.29                     | 0.48              |
| 48:DP:43:ALA:HA   | 48:DP:46:LYS:NZ   | 2.28                     | 0.48              |
| 7:AA:101:A:C8     | 7:AA:102:G:C8     | 3.02                     | 0.47              |
| 8:AB:24:G:H2'     | 8:AB:25:U:O4'     | 2.14                     | 0.47              |
| 8:AB:27:G:H1'     | 8:AB:513:A:H61    | 1.76                     | 0.47              |
| 8:AB:38:A:O4'     | 11:AE:46:GLN:HG2  | 2.10                     | 0.47              |
| 8:AB:87:U:H6      | 8:AB:87:U:H3'     | 1.79                     | 0.47              |
| 8:AB:279:A:C2     | 8:AB:362:A:H4'    | 2.49                     | 0.47              |
| 8:AB:287:G:C2     | 8:AB:354:A:C2     | 3.02                     | 0.47              |
| 8:AB:312:G:O2'    | 8:AB:313:G:H5''   | 2.13                     | 0.47              |
| 8:AB:373:U:C2     | 8:AB:374:A:N7     | 2.82                     | 0.47              |
| 8:AB:570:G:O6     | 55:AB:4318:HOH:O  | 2.19                     | 0.47              |
| 8:AB:617:G:OP1    | 11:AE:102:ARG:HG2 | 2.14                     | 0.47              |
| 8:AB:690:G:C6     | 8:AB:691:C:C5     | 3.02                     | 0.47              |
| 8:AB:959:A:C6     | 8:AB:960:A:C6     | 3.02                     | 0.47              |
| 8:AB:1183:U:H2'   | 8:AB:1184:U:H6    | 1.77                     | 0.47              |
| 8:AB:1293:C:H2'   | 8:AB:1294:U:C6    | 2.49                     | 0.47              |
| 8:AB:1305:C:N4    | 8:AB:1306:C:H5    | 2.12                     | 0.47              |
| 8:AB:1341:G:C6    | 26:AT:84:TYR:CE2  | 3.01                     | 0.47              |
| 8:AB:1551:A:C5    | 8:AB:1552:A:C2    | 3.01                     | 0.47              |
| 8:AB:1930:G:H2'   | 8:AB:1968:G:C6    | 2.50                     | 0.47              |
| 8:AB:1997:C:O2'   | 8:AB:1998:A:H5'   | 2.14                     | 0.47              |
| 8:AB:2232:C:H2'   | 8:AB:2233:U:H5'   | 1.95                     | 0.47              |
| 8:AB:2259:U:O2    | 8:AB:2259:U:H2'   | 2.14                     | 0.47              |
| 8:AB:2488:G:H2'   | 8:AB:2489:U:H6    | 1.79                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2498:C:OP2    | 8:AB:2499:C:OP2   | 2.32                     | 0.47              |
| 8:AB:2671:G:N2     | 8:AB:2672:U:O2    | 2.47                     | 0.47              |
| 8:AB:2810:A:N6     | 8:AB:2890:G:H1'   | 2.27                     | 0.47              |
| 8:AB:2851:A:H2'    | 8:AB:2852:G:C8    | 2.48                     | 0.47              |
| 8:AB:2886:A:C2     | 8:AB:2887:A:C5    | 3.02                     | 0.47              |
| 11:AE:139:LYS:HA   | 11:AE:142:ALA:HA  | 1.96                     | 0.47              |
| 11:AE:196:VAL:O    | 11:AE:199:MET:HE3 | 2.14                     | 0.47              |
| 14:AH:92:GLY:HA2   | 33:DA:360:G:OP1   | 2.13                     | 0.47              |
| 18:AL:40:SER:H     | 18:AL:41:ARG:HH21 | 1.62                     | 0.47              |
| 18:AL:108:ALA:HB3  | 18:AL:125:LEU:CD1 | 2.44                     | 0.47              |
| 18:AL:111:ILE:HD11 | 18:AL:113:ALA:CB  | 2.44                     | 0.47              |
| 21:AO:1:MET:HE2    | 21:AO:3:LYS:HD3   | 1.95                     | 0.47              |
| 21:AO:57:ALA:HB3   | 21:AO:62:LEU:CA   | 2.38                     | 0.47              |
| 21:AO:74:VAL:C     | 21:AO:76:LYS:N    | 2.65                     | 0.47              |
| 22:AP:93:LYS:CE    | 22:AP:97:TYR:CE2  | 2.97                     | 0.47              |
| 24:AR:65:ALA:HB1   | 24:AR:99:THR:H    | 1.73                     | 0.47              |
| 24:AR:65:ALA:HB1   | 24:AR:99:THR:HG22 | 1.95                     | 0.47              |
| 24:AR:90:ARG:HH22  | 24:AR:92:TRP:CB   | 2.27                     | 0.47              |
| 24:AR:90:ARG:HH12  | 24:AR:92:TRP:H    | 1.58                     | 0.47              |
| 29:AW:19:ARG:CA    | 29:AW:33:GLY:HA2  | 2.43                     | 0.47              |
| 33:BA:251:G:N3     | 33:BA:266:G:C6    | 2.82                     | 0.47              |
| 33:BA:386:C:N4     | 33:BA:387:U:N3    | 2.62                     | 0.47              |
| 33:BA:405:U:O4     | 36:BD:1:ALA:HA    | 2.14                     | 0.47              |
| 33:BA:476:U:H2'    | 33:BA:477:C:C6    | 2.49                     | 0.47              |
| 33:BA:525:C:O2'    | 33:BA:526:C:H5'   | 2.13                     | 0.47              |
| 33:BA:623:C:C2'    | 33:BA:624:C:H5'   | 2.44                     | 0.47              |
| 33:BA:653:U:C2     | 40:BH:55:LYS:HD3  | 2.49                     | 0.47              |
| 33:BA:668:G:H2'    | 47:BO:45:HIS:HD2  | 1.78                     | 0.47              |
| 33:BA:745:G:N1     | 33:BA:746:A:C2    | 2.82                     | 0.47              |
| 33:BA:807:A:H5''   | 33:BA:808:C:OP2   | 2.14                     | 0.47              |
| 33:BA:1420:U:H6    | 33:BA:1420:U:H3'  | 1.79                     | 0.47              |
| 33:BA:1513:A:N1    | 33:BA:1514:G:C2   | 2.81                     | 0.47              |
| 35:BC:30:ASP:OD1   | 35:BC:30:ASP:N    | 2.44                     | 0.47              |
| 35:BC:181:ILE:HA   | 35:BC:201:ILE:O   | 2.13                     | 0.47              |
| 36:BD:109:THR:C    | 36:BD:111:ALA:H   | 2.17                     | 0.47              |
| 38:BF:61:LEU:HD12  | 38:BF:63:ASN:OD1  | 2.14                     | 0.47              |
| 42:BJ:5:ARG:CG     | 42:BJ:77:VAL:HA   | 2.43                     | 0.47              |
| 42:BJ:80:THR:HG22  | 42:BJ:81:GLU:N    | 2.29                     | 0.47              |
| 46:BN:33:VAL:HG22  | 46:BN:40:ARG:NH2  | 2.29                     | 0.47              |
| 50:BR:70:THR:HG22  | 50:BR:74:GLN:N    | 2.29                     | 0.47              |
| 4:C3:24:LYS:O      | 4:C3:25:HIS:C     | 2.53                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:C4:26:ILE:HB    | 5:C4:35:GLN:HG2    | 1.96                     | 0.47              |
| 7:CA:47:C:P       | 21:CO:1:MET:SD     | 3.12                     | 0.47              |
| 8:CB:160:A:H2'    | 8:CB:161:A:H8      | 1.78                     | 0.47              |
| 8:CB:197:A:N7     | 8:CB:2430:A:C5     | 2.82                     | 0.47              |
| 8:CB:221:A:C2     | 8:CB:233:A:C4      | 3.02                     | 0.47              |
| 8:CB:235:U:C2     | 8:CB:236:C:C5      | 3.02                     | 0.47              |
| 8:CB:308:G:H2'    | 8:CB:309:A:O4'     | 2.14                     | 0.47              |
| 8:CB:381:G:C5'    | 32:CZ:13:THR:HG22  | 2.44                     | 0.47              |
| 8:CB:479:A:H4'    | 8:CB:480:A:H5'     | 1.96                     | 0.47              |
| 8:CB:597:G:C6     | 8:CB:598:U:N3      | 2.82                     | 0.47              |
| 8:CB:627:A:H2'    | 8:CB:627:A:H5''    | 1.62                     | 0.47              |
| 8:CB:692:C:O2'    | 8:CB:693:A:H5'     | 2.14                     | 0.47              |
| 8:CB:697:G:C6     | 8:CB:698:C:N4      | 2.82                     | 0.47              |
| 8:CB:782:A:C4'    | 8:CB:783:A:OP1     | 2.46                     | 0.47              |
| 8:CB:930:G:H5''   | 8:CB:931:U:P       | 2.53                     | 0.47              |
| 8:CB:979:A:H2'    | 8:CB:979:A:N3      | 2.29                     | 0.47              |
| 8:CB:1011:G:O6    | 8:CB:1151:A:C6     | 2.66                     | 0.47              |
| 8:CB:1024:G:P     | 8:CB:1025:G:HO2'   | 2.37                     | 0.47              |
| 8:CB:1141:U:OP2   | 16:CJ:65:THR:HG22  | 2.14                     | 0.47              |
| 8:CB:1273:U:H5'   | 8:CB:1274:A:OP1    | 2.14                     | 0.47              |
| 8:CB:1611:C:C2    | 8:CB:1612:C:C5     | 3.02                     | 0.47              |
| 8:CB:1641:A:H5''  | 8:CB:1642:G:OP2    | 2.13                     | 0.47              |
| 8:CB:1687:G:C2    | 8:CB:1688:U:C4     | 3.02                     | 0.47              |
| 8:CB:1736:U:H3'   | 8:CB:1737:G:H8     | 1.79                     | 0.47              |
| 8:CB:1815:A:O5'   | 8:CB:1815:A:H8     | 1.97                     | 0.47              |
| 8:CB:1967:C:N4    | 8:CB:1968:G:C6     | 2.82                     | 0.47              |
| 8:CB:2025:C:H3'   | 8:CB:2026:U:C6     | 2.49                     | 0.47              |
| 8:CB:2051:A:C4    | 8:CB:2614:A:N6     | 2.82                     | 0.47              |
| 8:CB:2071:A:C4    | 8:CB:2072:C:C5     | 3.01                     | 0.47              |
| 8:CB:2080:A:N6    | 8:CB:2241:A:N6     | 2.62                     | 0.47              |
| 8:CB:2637:U:O2    | 8:CB:2782:G:N2     | 2.47                     | 0.47              |
| 8:CB:2697:G:C6    | 8:CB:2711:A:C6     | 3.02                     | 0.47              |
| 8:CB:2814:A:C6    | 8:CB:2815:C:C4     | 3.02                     | 0.47              |
| 9:CC:3:VAL:HG12   | 9:CC:4:LYS:H       | 1.79                     | 0.47              |
| 9:CC:92:LEU:O     | 9:CC:93:VAL:CB     | 2.60                     | 0.47              |
| 9:CC:171:VAL:HG12 | 9:CC:183:VAL:C     | 2.34                     | 0.47              |
| 9:CC:255:LYS:NZ   | 9:CC:258:SER:OG    | 2.47                     | 0.47              |
| 10:CD:146:ILE:CD1 | 10:CD:155:VAL:HG22 | 2.43                     | 0.47              |
| 11:CE:138:LEU:O   | 11:CE:143:LEU:HD11 | 2.11                     | 0.47              |
| 11:CE:139:LYS:C   | 11:CE:141:MET:H    | 2.18                     | 0.47              |
| 11:CE:156:ASN:CG  | 11:CE:157:LEU:N    | 2.66                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:CG:82:PHE:CZ   | 13:CG:137:LYS:HD3 | 2.49                     | 0.47              |
| 13:CG:140:ILE:O   | 13:CG:141:GLY:C   | 2.52                     | 0.47              |
| 16:CJ:112:GLY:O   | 16:CJ:116:ARG:N   | 2.46                     | 0.47              |
| 18:CL:7:SER:CB    | 18:CL:8:PRO:CD    | 2.92                     | 0.47              |
| 20:CN:4:ARG:NH2   | 20:CN:6:SER:OG    | 2.47                     | 0.47              |
| 20:CN:61:ALA:C    | 20:CN:63:ARG:H    | 2.16                     | 0.47              |
| 22:CP:31:VAL:HG12 | 22:CP:33:GLU:H    | 1.79                     | 0.47              |
| 23:CQ:69:ARG:CZ   | 23:CQ:69:ARG:HB3  | 2.44                     | 0.47              |
| 25:CS:70:LYS:O    | 25:CS:71:VAL:CB   | 2.61                     | 0.47              |
| 27:CU:78:LYS:CD   | 27:CU:96:LYS:CG   | 2.85                     | 0.47              |
| 30:CX:49:ASP:OD1  | 30:CX:49:ASP:C    | 2.52                     | 0.47              |
| 33:DA:16:A:C2     | 33:DA:17:U:C5     | 3.02                     | 0.47              |
| 33:DA:248:C:C4    | 33:DA:249:U:C4    | 3.02                     | 0.47              |
| 33:DA:318:G:N1    | 33:DA:319:G:C5    | 2.82                     | 0.47              |
| 33:DA:426:U:H2'   | 33:DA:427:U:C5    | 2.48                     | 0.47              |
| 33:DA:435:A:C6    | 33:DA:436:C:C6    | 3.01                     | 0.47              |
| 33:DA:565:U:C6    | 33:DA:566:G:C8    | 3.02                     | 0.47              |
| 33:DA:619:U:C2'   | 33:DA:620:C:H5'   | 2.43                     | 0.47              |
| 33:DA:629:A:C5    | 33:DA:630:A:N7    | 2.81                     | 0.47              |
| 33:DA:669:G:N3    | 33:DA:670:G:C8    | 2.82                     | 0.47              |
| 33:DA:846:G:N3    | 33:DA:846:G:C2'   | 2.76                     | 0.47              |
| 33:DA:934:C:H5'   | 55:DA:5189:HOH:O  | 2.14                     | 0.47              |
| 33:DA:997:U:O2'   | 33:DA:998:C:H5'   | 2.13                     | 0.47              |
| 33:DA:1018:G:O2'  | 33:DA:1019:A:C8   | 2.66                     | 0.47              |
| 33:DA:1320:C:C4   | 33:DA:1321:U:C4   | 3.02                     | 0.47              |
| 33:DA:1388:C:H6   | 33:DA:1388:C:O5'  | 1.96                     | 0.47              |
| 34:DB:79:VAL:HG21 | 34:DB:92:ASN:HB2  | 1.96                     | 0.47              |
| 34:DB:127:LYS:O   | 34:DB:127:LYS:HG3 | 2.10                     | 0.47              |
| 35:DC:155:ARG:NH2 | 35:DC:192:TYR:CD1 | 2.82                     | 0.47              |
| 37:DE:35:LEU:HG   | 37:DE:36:THR:H    | 1.79                     | 0.47              |
| 39:DG:77:ARG:HG3  | 39:DG:86:VAL:CG2  | 2.40                     | 0.47              |
| 40:DH:103:VAL:O   | 40:DH:109:VAL:HA  | 2.14                     | 0.47              |
| 43:DK:60:PHE:CD1  | 43:DK:61:ALA:N    | 2.82                     | 0.47              |
| 2:A1:10:LEU:H     | 2:A1:24:LYS:HA    | 1.79                     | 0.47              |
| 2:A1:11:VAL:CG1   | 2:A1:12:SER:H     | 2.27                     | 0.47              |
| 4:A3:23:HIS:NE2   | 4:A3:47:ALA:HA    | 2.28                     | 0.47              |
| 4:A3:49:VAL:O     | 4:A3:49:VAL:CG1   | 2.61                     | 0.47              |
| 7:AA:103:U:C2     | 7:AA:104:A:N7     | 2.82                     | 0.47              |
| 8:AB:18:U:C6      | 8:AB:19:A:N7      | 2.82                     | 0.47              |
| 8:AB:97:C:H2'     | 8:AB:98:G:H5''    | 1.96                     | 0.47              |
| 8:AB:161:A:N6     | 8:AB:162:U:H5     | 2.11                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:302:C:H42    | 8:AB:315:G:H1     | 1.62                     | 0.47              |
| 8:AB:303:G:H8     | 8:AB:303:G:O5'    | 1.97                     | 0.47              |
| 8:AB:367:G:H3'    | 8:AB:368:A:C8     | 2.44                     | 0.47              |
| 8:AB:405:U:H4'    | 8:AB:405:U:OP2    | 2.13                     | 0.47              |
| 8:AB:422:A:C2     | 8:AB:423:A:C5     | 3.02                     | 0.47              |
| 8:AB:788:A:H5''   | 8:AB:790:U:O4     | 2.14                     | 0.47              |
| 8:AB:788:A:OP1    | 8:AB:790:U:O4     | 2.33                     | 0.47              |
| 8:AB:1026:G:N7    | 8:AB:1134:A:C5    | 2.82                     | 0.47              |
| 8:AB:1223:G:C6    | 8:AB:1227:G:C6    | 3.02                     | 0.47              |
| 8:AB:1317:G:C2    | 8:AB:1318:U:O2    | 2.67                     | 0.47              |
| 8:AB:1361:G:O5'   | 8:AB:1361:G:H8    | 1.96                     | 0.47              |
| 8:AB:1407:G:C2    | 8:AB:1596:A:N3    | 2.82                     | 0.47              |
| 8:AB:1429:G:O2'   | 8:AB:1430:G:H5'   | 2.14                     | 0.47              |
| 8:AB:1713:A:H8    | 8:AB:1713:A:O5'   | 1.97                     | 0.47              |
| 8:AB:1945:G:C4    | 8:AB:1946:U:C5    | 3.02                     | 0.47              |
| 8:AB:2046:G:H22   | 8:AB:2623:G:H1'   | 1.79                     | 0.47              |
| 8:AB:2051:A:C2    | 8:AB:2614:A:C6    | 3.01                     | 0.47              |
| 8:AB:2229:U:H2'   | 8:AB:2230:G:H8    | 1.79                     | 0.47              |
| 8:AB:2230:G:N3    | 32:AZ:30:HIS:HE1  | 2.11                     | 0.47              |
| 8:AB:2230:G:N3    | 32:AZ:30:HIS:CE1  | 2.82                     | 0.47              |
| 8:AB:2373:G:N2    | 8:AB:2381:A:H1'   | 2.28                     | 0.47              |
| 8:AB:2466:C:C2    | 8:AB:2485:G:C2    | 3.02                     | 0.47              |
| 9:AC:20:ASN:CB    | 9:AC:202:ARG:NH1  | 2.53                     | 0.47              |
| 10:AD:67:HIS:CD2  | 10:AD:74:GLU:OE1  | 2.67                     | 0.47              |
| 11:AE:43:THR:HG21 | 11:AE:44:ARG:HH21 | 1.78                     | 0.47              |
| 13:AG:5:LYS:O     | 13:AG:6:ALA:CB    | 2.62                     | 0.47              |
| 13:AG:25:ILE:HG23 | 13:AG:25:ILE:O    | 2.14                     | 0.47              |
| 15:AI:80:LYS:HG2  | 15:AI:135:MET:HE1 | 1.94                     | 0.47              |
| 16:AJ:22:GLY:O    | 16:AJ:24:THR:N    | 2.47                     | 0.47              |
| 16:AJ:79:GLY:C    | 16:AJ:81:ILE:H    | 2.18                     | 0.47              |
| 17:AK:113:MET:N   | 17:AK:113:MET:SD  | 2.87                     | 0.47              |
| 19:AM:107:GLY:O   | 19:AM:109:PRO:HD3 | 2.13                     | 0.47              |
| 20:AN:18:GLN:O    | 20:AN:19:ALA:C    | 2.51                     | 0.47              |
| 20:AN:37:THR:OG1  | 20:AN:40:LYS:HD2  | 2.14                     | 0.47              |
| 22:AP:18:SER:C    | 22:AP:20:ARG:N    | 2.67                     | 0.47              |
| 23:AQ:52:ARG:HA   | 23:AQ:52:ARG:HD2  | 1.56                     | 0.47              |
| 28:AV:62:THR:CA   | 28:AV:70:ILE:HD11 | 2.44                     | 0.47              |
| 30:AX:46:VAL:C    | 30:AX:48:ARG:N    | 2.67                     | 0.47              |
| 32:AZ:27:THR:O    | 32:AZ:28:VAL:HG12 | 2.13                     | 0.47              |
| 33:BA:18:C:H2'    | 33:BA:19:A:H8     | 1.79                     | 0.47              |
| 33:BA:34:C:H2'    | 33:BA:35:G:H8     | 1.69                     | 0.47              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:BA:48:C:O2    | 33:BA:48:C:C2'    | 2.61                     | 0.47              |
| 33:BA:107:G:O6   | 52:BT:6:ALA:CB    | 2.62                     | 0.47              |
| 33:BA:145:G:C2   | 33:BA:146:G:C5    | 3.02                     | 0.47              |
| 33:BA:195:A:P    | 55:BA:5053:HOH:O  | 2.71                     | 0.47              |
| 33:BA:197:A:H4'  | 33:BA:198:G:O5'   | 2.14                     | 0.47              |
| 33:BA:523:A:N1   | 44:BL:88:ASP:HB2  | 2.29                     | 0.47              |
| 33:BA:524:G:H8   | 33:BA:524:G:O5'   | 1.96                     | 0.47              |
| 33:BA:541:G:O2'  | 33:BA:542:G:H5'   | 2.13                     | 0.47              |
| 33:BA:676:A:H2'  | 33:BA:677:U:C6    | 2.49                     | 0.47              |
| 33:BA:747:A:H5'  | 33:BA:748:G:OP2   | 2.14                     | 0.47              |
| 33:BA:755:G:C4   | 33:BA:756:C:H5    | 2.32                     | 0.47              |
| 33:BA:892:A:N1   | 33:BA:907:A:C4    | 2.82                     | 0.47              |
| 33:BA:1279:G:H3' | 33:BA:1279:G:H8   | 1.79                     | 0.47              |
| 34:BB:137:THR:O  | 34:BB:141:GLU:HG3 | 2.15                     | 0.47              |
| 35:BC:26:LYS:HE2 | 35:BC:27:GLU:OE2  | 2.14                     | 0.47              |
| 36:BD:125:ASN:N  | 36:BD:141:VAL:O   | 2.39                     | 0.47              |
| 37:BE:76:ASN:HB2 | 37:BE:81:GLN:HB3  | 1.95                     | 0.47              |
| 40:BH:5:PRO:C    | 40:BH:6:ILE:HD13  | 2.34                     | 0.47              |
| 41:BI:12:LYS:H   | 41:BI:109:GLN:NE2 | 1.98                     | 0.47              |
| 44:BL:98:ARG:HB2 | 44:BL:116:TYR:HA  | 1.96                     | 0.47              |
| 1:C0:21:LEU:HD21 | 25:CS:20:VAL:O    | 2.14                     | 0.47              |
| 1:C0:40:HIS:ND1  | 1:C0:41:HIS:C     | 2.63                     | 0.47              |
| 2:C1:26:LYS:O    | 2:C1:26:LYS:HG3   | 2.13                     | 0.47              |
| 3:C2:3:ARG:NH2   | 8:CB:789:A:C4     | 2.82                     | 0.47              |
| 4:C3:29:ARG:HD3  | 4:C3:29:ARG:C     | 2.34                     | 0.47              |
| 5:C4:1:MET:HE2   | 5:C4:2:LYS:CD     | 2.44                     | 0.47              |
| 8:CB:6:A:H4'     | 16:CJ:133:ALA:CB  | 2.32                     | 0.47              |
| 8:CB:42:A:C5     | 8:CB:43:G:N7      | 2.82                     | 0.47              |
| 8:CB:283:G:H2'   | 8:CB:284:U:H6     | 1.79                     | 0.47              |
| 8:CB:298:G:O5'   | 8:CB:298:G:C8     | 2.66                     | 0.47              |
| 8:CB:434:U:O5'   | 8:CB:434:U:H2'    | 2.14                     | 0.47              |
| 8:CB:486:C:C2    | 8:CB:495:G:C2     | 3.02                     | 0.47              |
| 8:CB:529:A:C6    | 8:CB:2042:A:N3    | 2.83                     | 0.47              |
| 8:CB:567:U:C4    | 8:CB:568:U:C5     | 3.00                     | 0.47              |
| 8:CB:582:A:P     | 23:CQ:31:TYR:CZ   | 3.07                     | 0.47              |
| 8:CB:677:A:C2'   | 8:CB:678:C:H5'    | 2.44                     | 0.47              |
| 8:CB:737:C:HO2'  | 8:CB:738:G:H5'    | 1.76                     | 0.47              |
| 8:CB:769:U:C6    | 8:CB:770:G:N7     | 2.82                     | 0.47              |
| 8:CB:906:U:C6    | 8:CB:906:U:C3'    | 2.97                     | 0.47              |
| 8:CB:961:C:N4    | 8:CB:2031:A:C8    | 2.82                     | 0.47              |
| 8:CB:968:C:C3'   | 8:CB:969:G:H5''   | 2.43                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:982:C:H6     | 8:CB:2029:G:OP1   | 1.97                     | 0.47              |
| 8:CB:1096:A:C8    | 8:CB:1096:A:H3'   | 2.48                     | 0.47              |
| 8:CB:1127:A:C2    | 8:CB:2518:A:C5    | 3.02                     | 0.47              |
| 8:CB:1175:A:H2'   | 8:CB:1176:U:H5'   | 1.96                     | 0.47              |
| 8:CB:1218:G:C6    | 8:CB:1232:G:C6    | 3.01                     | 0.47              |
| 8:CB:1323:C:P     | 25:CS:84:ARG:HH12 | 2.37                     | 0.47              |
| 8:CB:1694:C:H6    | 8:CB:1694:C:O5'   | 1.97                     | 0.47              |
| 8:CB:1703:G:H2'   | 8:CB:1704:C:H6    | 1.78                     | 0.47              |
| 8:CB:1794:A:O4'   | 8:CB:1900:A:C2    | 2.67                     | 0.47              |
| 8:CB:1807:G:N2    | 8:CB:1811:G:O6    | 2.48                     | 0.47              |
| 8:CB:1866:A:C2    | 8:CB:1867:G:H1'   | 2.49                     | 0.47              |
| 8:CB:1899:A:O2'   | 8:CB:1900:A:H5''  | 2.14                     | 0.47              |
| 8:CB:2614:A:H5''  | 55:CB:5226:HOH:O  | 2.14                     | 0.47              |
| 8:CB:2676:C:H3'   | 8:CB:2676:C:H6    | 1.78                     | 0.47              |
| 8:CB:2815:C:C2    | 8:CB:2816:G:C8    | 3.02                     | 0.47              |
| 8:CB:2828:G:C2'   | 8:CB:2829:A:H5'   | 2.44                     | 0.47              |
| 10:CD:35:THR:HB   | 10:CD:48:ILE:HD12 | 1.96                     | 0.47              |
| 10:CD:59:ARG:NE   | 10:CD:63:PRO:CB   | 2.77                     | 0.47              |
| 10:CD:174:SER:HB2 | 10:CD:208:LYS:CB  | 2.44                     | 0.47              |
| 11:CE:2:GLU:CB    | 11:CE:16:GLU:HA   | 2.43                     | 0.47              |
| 11:CE:15:SER:O    | 11:CE:16:GLU:C    | 2.51                     | 0.47              |
| 11:CE:131:THR:C   | 11:CE:132:LYS:NZ  | 2.66                     | 0.47              |
| 12:CF:87:LYS:HB3  | 12:CF:88:VAL:H    | 1.52                     | 0.47              |
| 13:CG:84:LYS:O    | 13:CG:132:LEU:HG  | 2.14                     | 0.47              |
| 15:CI:88:GLY:O    | 15:CI:97:VAL:HG21 | 2.14                     | 0.47              |
| 19:CM:16:ARG:CG   | 19:CM:18:ARG:HH21 | 2.26                     | 0.47              |
| 19:CM:134:THR:OG1 | 28:CV:52:ALA:HA   | 2.14                     | 0.47              |
| 20:CN:29:VAL:HG23 | 20:CN:75:ILE:HD11 | 1.95                     | 0.47              |
| 22:CP:27:VAL:O    | 22:CP:47:ILE:HG13 | 2.14                     | 0.47              |
| 23:CQ:86:SER:O    | 23:CQ:88:GLU:HB2  | 2.14                     | 0.47              |
| 24:CR:74:ILE:C    | 24:CR:75:VAL:HG22 | 2.34                     | 0.47              |
| 27:CU:66:VAL:HG22 | 27:CU:67:SER:N    | 2.29                     | 0.47              |
| 33:DA:408:A:C2    | 33:DA:409:U:C1'   | 2.94                     | 0.47              |
| 33:DA:598:U:H2'   | 33:DA:599:C:H6    | 1.79                     | 0.47              |
| 33:DA:657:U:O5'   | 33:DA:657:U:C6    | 2.65                     | 0.47              |
| 33:DA:688:G:N3    | 33:DA:704:A:C2    | 2.81                     | 0.47              |
| 33:DA:766:A:H61   | 33:DA:1511:G:H1'  | 1.79                     | 0.47              |
| 33:DA:826:C:OP1   | 40:DH:12:ARG:NH2  | 2.47                     | 0.47              |
| 33:DA:1088:G:N2   | 33:DA:1167:A:N6   | 2.63                     | 0.47              |
| 33:DA:1381:U:O2   | 33:DA:1381:U:C3'  | 2.61                     | 0.47              |
| 36:DD:48:SER:C    | 36:DD:52:VAL:HG23 | 2.33                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:DD:60:VAL:O     | 36:DD:60:VAL:HG12  | 2.13                     | 0.47              |
| 36:DD:84:ASN:N     | 36:DD:88:ASN:ND2   | 2.62                     | 0.47              |
| 36:DD:142:VAL:HG23 | 36:DD:180:THR:N    | 2.27                     | 0.47              |
| 37:DE:99:SER:H     | 37:DE:102:THR:HG23 | 1.79                     | 0.47              |
| 38:DF:12:PRO:HG2   | 38:DF:54:LEU:HD12  | 1.97                     | 0.47              |
| 44:DL:19:ASN:CB    | 44:DL:85:ARG:CD    | 2.91                     | 0.47              |
| 44:DL:27:PRO:HB2   | 44:DL:28:GLN:CD    | 2.34                     | 0.47              |
| 46:DN:74:ARG:H     | 46:DN:74:ARG:HG3   | 1.43                     | 0.47              |
| 47:DO:53:ARG:CA    | 47:DO:56:LEU:HD12  | 2.43                     | 0.47              |
| 49:DQ:4:ILE:HB     | 49:DQ:5:ARG:H      | 1.45                     | 0.47              |
| 51:DS:10:ILE:HD12  | 51:DS:15:LEU:HG    | 1.96                     | 0.47              |
| 53:DU:13:VAL:HA    | 53:DU:16:ARG:NH2   | 2.23                     | 0.47              |
| 2:A1:36:LYS:HE2    | 8:AB:2286:G:C8     | 2.49                     | 0.47              |
| 7:AA:76:G:N1       | 7:AA:101:A:N6      | 2.62                     | 0.47              |
| 8:AB:325:G:O6      | 8:AB:326:G:O6      | 2.32                     | 0.47              |
| 8:AB:336:C:C2      | 8:AB:337:C:C5      | 3.02                     | 0.47              |
| 8:AB:375:G:H2'     | 8:AB:376:G:O4'     | 2.13                     | 0.47              |
| 8:AB:419:U:H2'     | 8:AB:420:C:H6      | 1.78                     | 0.47              |
| 8:AB:452:G:N2      | 8:AB:458:G:N9      | 2.62                     | 0.47              |
| 8:AB:563:A:C6      | 8:AB:2018:G:C5     | 3.02                     | 0.47              |
| 8:AB:571:U:C4      | 8:AB:575:A:C6      | 3.02                     | 0.47              |
| 8:AB:630:G:H4'     | 8:AB:640:C:O2'     | 2.15                     | 0.47              |
| 8:AB:661:A:HO2'    | 18:AL:23:ILE:HG23  | 1.79                     | 0.47              |
| 8:AB:754:U:C4      | 8:AB:755:U:C4      | 3.01                     | 0.47              |
| 8:AB:834:G:H8      | 8:AB:834:G:O5'     | 1.97                     | 0.47              |
| 8:AB:899:A:H5''    | 8:AB:899:A:H8      | 1.80                     | 0.47              |
| 8:AB:948:C:C1'     | 8:AB:984:A:N3      | 2.76                     | 0.47              |
| 8:AB:978:G:O6      | 8:AB:986:C:N4      | 2.48                     | 0.47              |
| 8:AB:1031:G:C2     | 8:AB:1124:G:N3     | 2.83                     | 0.47              |
| 8:AB:1067:A:N1     | 8:AB:1068:G:C2     | 2.82                     | 0.47              |
| 8:AB:1087:G:H2'    | 8:AB:1089:A:C8     | 2.49                     | 0.47              |
| 8:AB:1119:U:H5''   | 8:AB:1120:G:OP2    | 2.12                     | 0.47              |
| 8:AB:1181:U:H2'    | 8:AB:1182:G:C8     | 2.49                     | 0.47              |
| 8:AB:1340:U:O2     | 8:AB:1340:U:O4'    | 2.33                     | 0.47              |
| 8:AB:1358:G:C2     | 8:AB:1374:G:O6     | 2.67                     | 0.47              |
| 8:AB:1469:A:C2     | 8:AB:1470:A:C2     | 3.02                     | 0.47              |
| 8:AB:1558:C:C2     | 8:AB:1560:G:C5     | 3.02                     | 0.47              |
| 8:AB:1640:A:H2'    | 8:AB:1641:A:H8     | 1.79                     | 0.47              |
| 8:AB:1704:C:C2     | 8:AB:1705:A:C8     | 3.02                     | 0.47              |
| 8:AB:1839:G:C6     | 8:AB:1840:G:N7     | 2.82                     | 0.47              |
| 8:AB:1996:C:H5     | 17:AK:32:TYR:OH    | 1.96                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2205:A:C4    | 8:AB:2206:C:C5     | 3.03                     | 0.47              |
| 8:AB:2258:C:C2    | 8:AB:2426:A:H4'    | 2.50                     | 0.47              |
| 8:AB:2305:U:C2    | 8:AB:2306:C:C6     | 3.03                     | 0.47              |
| 8:AB:2330:G:N3    | 29:AW:36:ILE:HD13  | 2.29                     | 0.47              |
| 8:AB:2333:A:O2'   | 21:AO:7:ARG:HD3    | 2.14                     | 0.47              |
| 8:AB:2516:A:C4    | 8:AB:2569:G:N2     | 2.82                     | 0.47              |
| 8:AB:2562:U:OP1   | 17:AK:40:LYS:NZ    | 2.41                     | 0.47              |
| 8:AB:2685:G:N1    | 8:AB:2725:A:C6     | 2.82                     | 0.47              |
| 8:AB:2699:C:N3    | 8:AB:2709:G:C6     | 2.83                     | 0.47              |
| 8:AB:2758:A:O2'   | 8:AB:2759:G:H5'    | 2.14                     | 0.47              |
| 8:AB:2779:U:H5''  | 8:AB:2780:G:H3'    | 1.96                     | 0.47              |
| 9:AC:63:ILE:C     | 9:AC:64:VAL:CG2    | 2.83                     | 0.47              |
| 9:AC:237:ARG:HE   | 9:AC:237:ARG:CA    | 2.22                     | 0.47              |
| 9:AC:257:ARG:CA   | 9:AC:261:ARG:NH1   | 2.77                     | 0.47              |
| 10:AD:20:VAL:O    | 10:AD:22:ILE:N     | 2.47                     | 0.47              |
| 10:AD:37:VAL:HG21 | 10:AD:46:ARG:CZ    | 2.44                     | 0.47              |
| 10:AD:55:LYS:HB2  | 10:AD:55:LYS:HZ2   | 1.79                     | 0.47              |
| 10:AD:83:ARG:HH11 | 10:AD:84:LEU:CA    | 2.27                     | 0.47              |
| 10:AD:119:ALA:HB3 | 10:AD:124:ARG:HG3  | 1.96                     | 0.47              |
| 11:AE:158:PHE:CG  | 11:AE:169:VAL:HG12 | 2.49                     | 0.47              |
| 12:AF:149:ARG:O   | 12:AF:150:GLY:C    | 2.53                     | 0.47              |
| 18:AL:141:LYS:O   | 18:AL:142:ILE:HG12 | 2.13                     | 0.47              |
| 19:AM:31:PHE:HE1  | 19:AM:126:ILE:HB   | 1.80                     | 0.47              |
| 19:AM:41:LEU:N    | 19:AM:41:LEU:HD23  | 2.28                     | 0.47              |
| 23:AQ:35:PHE:HA   | 23:AQ:38:VAL:CG1   | 2.44                     | 0.47              |
| 23:AQ:94:LEU:HD13 | 23:AQ:94:LEU:H     | 1.79                     | 0.47              |
| 25:AS:40:ASN:O    | 25:AS:41:LYS:HG2   | 2.15                     | 0.47              |
| 25:AS:95:ARG:CG   | 25:AS:95:ARG:NH1   | 2.76                     | 0.47              |
| 29:AW:22:VAL:O    | 29:AW:23:LYS:HG3   | 2.13                     | 0.47              |
| 33:BA:17:U:O2'    | 33:BA:18:C:C5'     | 2.62                     | 0.47              |
| 33:BA:152:A:N6    | 33:BA:170:U:C2     | 2.83                     | 0.47              |
| 33:BA:218:U:H2'   | 33:BA:219:U:O4'    | 2.15                     | 0.47              |
| 33:BA:406:G:C6    | 33:BA:407:U:C5     | 3.02                     | 0.47              |
| 33:BA:664:G:H22   | 33:BA:741:G:H1     | 1.61                     | 0.47              |
| 33:BA:765:G:O6    | 33:BA:811:C:C5     | 2.67                     | 0.47              |
| 33:BA:834:U:H2'   | 33:BA:835:U:H6     | 1.79                     | 0.47              |
| 33:BA:888:G:O3'   | 33:BA:1488:G:O2'   | 2.33                     | 0.47              |
| 33:BA:1085:U:O4'  | 33:BA:1094:G:N2    | 2.47                     | 0.47              |
| 33:BA:1110:A:N7   | 33:BA:1111:A:N6    | 2.59                     | 0.47              |
| 33:BA:1148:U:C6   | 41:BI:17:ARG:NH1   | 2.83                     | 0.47              |
| 33:BA:1174:G:H2'  | 33:BA:1175:G:H8    | 1.75                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:1237:C:O4'  | 33:BA:1334:G:N2    | 2.44                     | 0.47              |
| 33:BA:1514:G:H2'  | 33:BA:1515:G:O4'   | 2.14                     | 0.47              |
| 34:BB:26:MET:HE2  | 34:BB:188:THR:CG2  | 2.44                     | 0.47              |
| 35:BC:132:ALA:O   | 35:BC:133:MET:C    | 2.53                     | 0.47              |
| 36:BD:57:LYS:CG   | 36:BD:58:GLN:N     | 2.77                     | 0.47              |
| 37:BE:133:ILE:O   | 37:BE:133:ILE:HG22 | 2.14                     | 0.47              |
| 38:BF:47:LEU:HD21 | 38:BF:57:ALA:HB3   | 1.96                     | 0.47              |
| 41:BI:121:ARG:HB2 | 41:BI:121:ARG:NH1  | 2.28                     | 0.47              |
| 44:BL:100:ALA:O   | 44:BL:101:LEU:HB2  | 2.15                     | 0.47              |
| 45:BM:33:LEU:C    | 45:BM:35:ALA:N     | 2.66                     | 0.47              |
| 47:BO:53:ARG:CA   | 47:BO:56:LEU:HD12  | 2.44                     | 0.47              |
| 52:BT:6:ALA:HB1   | 52:BT:9:ARG:HB2    | 1.96                     | 0.47              |
| 1:C0:15:ARG:NH1   | 1:C0:16:ARG:NH1    | 2.62                     | 0.47              |
| 8:CB:158:U:O2     | 8:CB:169:G:C2      | 2.67                     | 0.47              |
| 8:CB:172:A:O2'    | 8:CB:173:A:H5'     | 2.14                     | 0.47              |
| 8:CB:255:A:H5''   | 8:CB:255:A:C8      | 2.48                     | 0.47              |
| 8:CB:317:G:N7     | 8:CB:318:C:C4      | 2.82                     | 0.47              |
| 8:CB:393:C:H2'    | 8:CB:394:C:C6      | 2.49                     | 0.47              |
| 8:CB:393:C:H5''   | 8:CB:394:C:OP2     | 2.13                     | 0.47              |
| 8:CB:415:A:H2'    | 8:CB:416:U:H5'     | 1.97                     | 0.47              |
| 8:CB:523:C:C6     | 8:CB:523:C:C3'     | 2.97                     | 0.47              |
| 8:CB:560:C:H2'    | 8:CB:561:G:C5'     | 2.43                     | 0.47              |
| 8:CB:567:U:C4     | 8:CB:568:U:H5      | 2.33                     | 0.47              |
| 8:CB:631:A:C2'    | 18:CL:66:PHE:HD1   | 2.28                     | 0.47              |
| 8:CB:936:A:H2'    | 8:CB:937:C:H6      | 1.79                     | 0.47              |
| 8:CB:1010:A:H4'   | 23:CQ:75:TYR:HD2   | 1.79                     | 0.47              |
| 8:CB:1018:U:H2'   | 8:CB:1019:U:C6     | 2.50                     | 0.47              |
| 8:CB:1027:A:N1    | 8:CB:1126:A:O4'    | 2.47                     | 0.47              |
| 8:CB:1100:C:H2'   | 8:CB:1101:U:C6     | 2.49                     | 0.47              |
| 8:CB:1560:G:C6    | 8:CB:1561:C:C4     | 3.02                     | 0.47              |
| 8:CB:1596:A:H2'   | 8:CB:1597:A:H5'    | 1.96                     | 0.47              |
| 8:CB:1797:G:OP1   | 9:CC:251:THR:HG22  | 2.13                     | 0.47              |
| 8:CB:1809:A:C3'   | 8:CB:1810:A:C8     | 2.92                     | 0.47              |
| 8:CB:1828:G:H1    | 9:CC:219:VAL:HG11  | 1.78                     | 0.47              |
| 8:CB:1842:G:C5    | 8:CB:1843:C:C4     | 3.03                     | 0.47              |
| 8:CB:1947:C:C4    | 8:CB:1948:G:N7     | 2.83                     | 0.47              |
| 8:CB:2061:G:N3    | 8:CB:2063:C:C4     | 2.82                     | 0.47              |
| 8:CB:2073:C:H1'   | 8:CB:2437:G:N2     | 2.28                     | 0.47              |
| 8:CB:2204:G:C2    | 8:CB:2205:A:C8     | 3.02                     | 0.47              |
| 8:CB:2223:G:N3    | 8:CB:2223:G:H2'    | 2.29                     | 0.47              |
| 8:CB:2386:A:O2'   | 8:CB:2387:U:H5'    | 2.14                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2400:G:C6     | 8:CB:2401:U:O4     | 2.67                     | 0.47              |
| 8:CB:2881:U:C4     | 8:CB:2882:A:N7     | 2.83                     | 0.47              |
| 9:CC:22:GLU:C      | 9:CC:22:GLU:CD     | 2.70                     | 0.47              |
| 9:CC:155:ARG:HD3   | 9:CC:157:ALA:N     | 2.26                     | 0.47              |
| 9:CC:261:ARG:NH1   | 9:CC:261:ARG:CG    | 2.67                     | 0.47              |
| 10:CD:157:LYS:HE3  | 16:CJ:80:HIS:HB3   | 1.95                     | 0.47              |
| 11:CE:109:LEU:O    | 11:CE:113:VAL:HG22 | 2.14                     | 0.47              |
| 11:CE:161:ALA:HB1  | 11:CE:169:VAL:HB   | 1.96                     | 0.47              |
| 13:CG:96:ALA:O     | 13:CG:102:ILE:HG13 | 2.14                     | 0.47              |
| 14:CH:24:GLY:HA2   | 14:CH:27:ARG:HH21  | 1.78                     | 0.47              |
| 14:CH:56:ALA:O     | 14:CH:57:LYS:C     | 2.52                     | 0.47              |
| 17:CK:60:ALA:HB1   | 17:CK:85:VAL:O     | 2.14                     | 0.47              |
| 19:CM:86:LYS:HE3   | 19:CM:87:GLY:N     | 2.29                     | 0.47              |
| 25:CS:71:VAL:H     | 25:CS:107:VAL:HA   | 1.79                     | 0.47              |
| 26:CT:11:LEU:HD23  | 26:CT:32:LEU:HD22  | 1.96                     | 0.47              |
| 26:CT:23:ALA:C     | 26:CT:25:GLU:N     | 2.67                     | 0.47              |
| 26:CT:37:ASP:N     | 26:CT:37:ASP:OD1   | 2.46                     | 0.47              |
| 29:CW:32:ALA:C     | 29:CW:66:VAL:HG21  | 2.34                     | 0.47              |
| 29:CW:44:PHE:CE1   | 29:CW:60:ALA:HB2   | 2.50                     | 0.47              |
| 33:DA:246:A:H61    | 33:DA:281:G:H1'    | 1.80                     | 0.47              |
| 33:DA:343:U:C6     | 33:DA:345:C:N4     | 2.82                     | 0.47              |
| 33:DA:404:G:N3     | 33:DA:404:G:H2'    | 2.30                     | 0.47              |
| 33:DA:410:G:O6     | 33:DA:429:U:H1'    | 2.14                     | 0.47              |
| 33:DA:456:A:C6     | 33:DA:457:G:N7     | 2.82                     | 0.47              |
| 33:DA:511:C:H1'    | 36:DD:40:HIS:NE2   | 2.29                     | 0.47              |
| 33:DA:563:A:C2     | 33:DA:567:G:C4     | 3.02                     | 0.47              |
| 33:DA:593:U:C2     | 33:DA:594:U:C5     | 3.02                     | 0.47              |
| 33:DA:669:G:N2     | 33:DA:670:G:C4     | 2.83                     | 0.47              |
| 33:DA:872:A:C8     | 33:DA:874:G:H8     | 2.32                     | 0.47              |
| 33:DA:1154:G:C2    | 33:DA:1155:A:N7    | 2.82                     | 0.47              |
| 33:DA:1261:A:H2'   | 33:DA:1262:C:O4'   | 2.14                     | 0.47              |
| 33:DA:1268:G:N2    | 33:DA:1269:A:C2    | 2.82                     | 0.47              |
| 33:DA:1349:A:H3'   | 33:DA:1350:A:H8    | 1.80                     | 0.47              |
| 33:DA:1354:U:C2    | 33:DA:1355:G:C8    | 3.02                     | 0.47              |
| 33:DA:1485:U:H3'   | 33:DA:1485:U:C6    | 2.50                     | 0.47              |
| 33:DA:1522:U:C2    | 33:DA:1523:G:C8    | 3.02                     | 0.47              |
| 36:DD:101:VAL:HG21 | 36:DD:122:ILE:HD12 | 1.96                     | 0.47              |
| 37:DE:15:ILE:CG1   | 37:DE:37:VAL:HG23  | 2.44                     | 0.47              |
| 37:DE:45:VAL:HG11  | 37:DE:117:ALA:HB2  | 1.96                     | 0.47              |
| 37:DE:106:ALA:HB2  | 37:DE:124:ALA:HB3  | 1.97                     | 0.47              |
| 41:DI:56:MET:O     | 41:DI:57:VAL:HB    | 2.13                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:DI:113:LYS:HE2 | 41:DI:118:ARG:HA  | 1.95                     | 0.47              |
| 46:DN:7:ALA:HA    | 46:DN:10:VAL:CG2  | 2.45                     | 0.47              |
| 48:DP:6:LEU:O     | 48:DP:7:ALA:CB    | 2.63                     | 0.47              |
| 48:DP:60:TRP:O    | 48:DP:63:GLN:HB2  | 2.13                     | 0.47              |
| 49:DQ:30:HIS:CG   | 49:DQ:31:PRO:HD2  | 2.50                     | 0.47              |
| 51:DS:10:ILE:HG23 | 51:DS:38:THR:O    | 2.14                     | 0.47              |
| 5:A4:25:VAL:O     | 5:A4:27:CYS:N     | 2.47                     | 0.47              |
| 8:AB:153:U:H3'    | 8:AB:153:U:C6     | 2.50                     | 0.47              |
| 8:AB:224:U:O4     | 8:AB:420:C:H5'    | 2.14                     | 0.47              |
| 8:AB:333:G:C6     | 8:AB:334:C:N4     | 2.83                     | 0.47              |
| 8:AB:478:A:C6     | 8:AB:480:A:N6     | 2.83                     | 0.47              |
| 8:AB:582:A:C5     | 8:AB:583:G:N7     | 2.83                     | 0.47              |
| 8:AB:643:A:C8     | 8:AB:644:A:C8     | 3.03                     | 0.47              |
| 8:AB:727:A:H2'    | 8:AB:728:G:C8     | 2.49                     | 0.47              |
| 8:AB:744:U:H2'    | 8:AB:745:G:O5'    | 2.14                     | 0.47              |
| 8:AB:752:A:HO2'   | 8:AB:753:A:P      | 2.38                     | 0.47              |
| 8:AB:754:U:C4     | 8:AB:755:U:O4     | 2.68                     | 0.47              |
| 8:AB:1175:A:H2'   | 8:AB:1176:U:H5'   | 1.96                     | 0.47              |
| 8:AB:1197:G:N2    | 8:AB:1198:U:C2    | 2.83                     | 0.47              |
| 8:AB:1234:U:O2    | 8:AB:1235:G:C1'   | 2.62                     | 0.47              |
| 8:AB:1273:U:H5'   | 8:AB:1274:A:OP1   | 2.14                     | 0.47              |
| 8:AB:1439:A:H2'   | 8:AB:1440:U:H5'   | 1.96                     | 0.47              |
| 8:AB:1444:G:H2'   | 8:AB:1445:G:C8    | 2.50                     | 0.47              |
| 8:AB:1797:G:C6    | 8:AB:1798:U:C4    | 3.02                     | 0.47              |
| 8:AB:1891:G:H2'   | 8:AB:1892:C:C6    | 2.49                     | 0.47              |
| 8:AB:1937:A:C6    | 8:AB:1939:U:O2    | 2.66                     | 0.47              |
| 8:AB:1999:C:O2'   | 8:AB:2000:C:H5'   | 2.14                     | 0.47              |
| 8:AB:2044:C:N4    | 8:AB:2045:C:H41   | 2.12                     | 0.47              |
| 8:AB:2082:A:C5    | 8:AB:2083:G:N7    | 2.82                     | 0.47              |
| 8:AB:2138:G:N1    | 8:AB:2153:C:N4    | 2.62                     | 0.47              |
| 8:AB:2270:A:H2'   | 8:AB:2271:G:H5'   | 1.96                     | 0.47              |
| 8:AB:2355:G:O3'   | 29:AW:20:LEU:HD22 | 2.14                     | 0.47              |
| 8:AB:2584:U:C6    | 8:AB:2584:U:C3'   | 2.97                     | 0.47              |
| 8:AB:2633:G:O2'   | 10:AD:62:LYS:HE3  | 2.14                     | 0.47              |
| 8:AB:2684:U:C4    | 8:AB:2685:G:N7    | 2.82                     | 0.47              |
| 8:AB:2697:G:N1    | 8:AB:2711:A:C6    | 2.82                     | 0.47              |
| 8:AB:2720:U:H5''  | 22:AP:54:LEU:HD11 | 1.95                     | 0.47              |
| 8:AB:2733:A:C6    | 8:AB:2734:A:C6    | 3.02                     | 0.47              |
| 8:AB:2733:A:H2    | 10:AD:209:ALA:O   | 1.97                     | 0.47              |
| 8:AB:2832:U:C4    | 8:AB:2834:G:N2    | 2.82                     | 0.47              |
| 9:AC:23:LEU:HD12  | 9:AC:23:LEU:O     | 2.14                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:AC:229:HIS:ND1   | 9:AC:231:HIS:CD2   | 2.82                     | 0.47              |
| 9:AC:257:ARG:HB3   | 9:AC:258:SER:H     | 1.56                     | 0.47              |
| 11:AE:120:VAL:CG1  | 11:AE:121:VAL:N    | 2.68                     | 0.47              |
| 11:AE:148:ILE:CG1  | 11:AE:167:VAL:HG13 | 2.40                     | 0.47              |
| 13:AG:68:ARG:CA    | 13:AG:71:LEU:HD13  | 2.42                     | 0.47              |
| 13:AG:84:LYS:HA    | 13:AG:84:LYS:HE3   | 1.95                     | 0.47              |
| 13:AG:168:VAL:HG13 | 13:AG:170:THR:HG23 | 1.97                     | 0.47              |
| 14:AH:4:ILE:HA     | 14:AH:17:ASP:OD2   | 2.14                     | 0.47              |
| 14:AH:90:LEU:HD11  | 14:AH:146:VAL:HG11 | 1.97                     | 0.47              |
| 16:AJ:84:ILE:HG22  | 16:AJ:85:LYS:N     | 2.29                     | 0.47              |
| 18:AL:85:VAL:HG12  | 18:AL:86:GLU:CD    | 2.35                     | 0.47              |
| 18:AL:92:LEU:HD23  | 18:AL:92:LEU:C     | 2.35                     | 0.47              |
| 19:AM:76:LYS:HZ2   | 19:AM:81:ARG:HA    | 1.79                     | 0.47              |
| 22:AP:103:THR:HG22 | 22:AP:105:LYS:CD   | 2.44                     | 0.47              |
| 23:AQ:35:PHE:CB    | 23:AQ:39:ILE:HD12  | 2.45                     | 0.47              |
| 24:AR:30:GLY:HA3   | 24:AR:68:ARG:NH1   | 2.29                     | 0.47              |
| 24:AR:78:ARG:CG    | 24:AR:89:HIS:H     | 2.27                     | 0.47              |
| 26:AT:68:LYS:HB2   | 26:AT:68:LYS:HE2   | 1.64                     | 0.47              |
| 29:AW:53:GLY:O     | 29:AW:54:ARG:HB2   | 2.12                     | 0.47              |
| 33:BA:18:C:C2'     | 33:BA:19:A:O5'     | 2.62                     | 0.47              |
| 33:BA:125:U:C2     | 33:BA:126:G:N7     | 2.82                     | 0.47              |
| 33:BA:133:U:C2     | 33:BA:230:G:N1     | 2.83                     | 0.47              |
| 33:BA:298:A:N6     | 55:BA:5065:HOH:O   | 2.48                     | 0.47              |
| 33:BA:309:A:C2     | 33:BA:310:G:C5     | 3.03                     | 0.47              |
| 33:BA:390:U:H2'    | 33:BA:391:G:C8     | 2.49                     | 0.47              |
| 33:BA:497:G:N2     | 33:BA:498:A:C6     | 2.82                     | 0.47              |
| 33:BA:603:U:C3'    | 33:BA:604:G:H5''   | 2.45                     | 0.47              |
| 33:BA:754:C:O2'    | 33:BA:755:G:P      | 2.72                     | 0.47              |
| 33:BA:1068:G:N2    | 33:BA:1191:A:H1'   | 2.30                     | 0.47              |
| 33:BA:1113:C:O2'   | 33:BA:1114:C:H5'   | 2.14                     | 0.47              |
| 33:BA:1237:C:H5''  | 33:BA:1238:A:C1'   | 2.43                     | 0.47              |
| 33:BA:1413:A:H2'   | 33:BA:1414:U:O4'   | 2.15                     | 0.47              |
| 33:BA:1485:U:C2'   | 33:BA:1486:G:H5'   | 2.44                     | 0.47              |
| 33:BA:1508:A:P     | 55:BA:5280:HOH:O   | 2.71                     | 0.47              |
| 34:BB:13:VAL:HG13  | 34:BB:207:ARG:CB   | 2.45                     | 0.47              |
| 36:BD:30:LYS:HB2   | 36:BD:30:LYS:HE2   | 1.54                     | 0.47              |
| 36:BD:67:LEU:H     | 36:BD:67:LEU:HD22  | 1.79                     | 0.47              |
| 38:BF:12:PRO:HG2   | 38:BF:54:LEU:CD1   | 2.44                     | 0.47              |
| 38:BF:92:THR:C     | 38:BF:94:HIS:H     | 2.16                     | 0.47              |
| 42:BJ:52:LEU:HD12  | 42:BJ:52:LEU:N     | 2.22                     | 0.47              |
| 49:BQ:60:ILE:HG12  | 49:BQ:61:ARG:N     | 2.28                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 52:BT:23:ARG:HD2  | 52:BT:23:ARG:N    | 2.28                     | 0.47              |
| 52:BT:58:ASP:O    | 52:BT:61:ALA:HB3  | 2.13                     | 0.47              |
| 53:BU:27:VAL:HG13 | 53:BU:27:VAL:O    | 2.14                     | 0.47              |
| 8:CB:24:G:H2'     | 8:CB:25:U:O4'     | 2.14                     | 0.47              |
| 8:CB:81:G:N1      | 8:CB:105:C:N4     | 2.58                     | 0.47              |
| 8:CB:204:A:N7     | 8:CB:206:U:C2     | 2.82                     | 0.47              |
| 8:CB:263:G:C2     | 8:CB:264:C:C2     | 3.01                     | 0.47              |
| 8:CB:553:G:C5     | 8:CB:554:U:C5     | 3.02                     | 0.47              |
| 8:CB:566:U:C4     | 8:CB:567:U:C5     | 3.03                     | 0.47              |
| 8:CB:604:G:O6     | 8:CB:625:G:N1     | 2.48                     | 0.47              |
| 8:CB:759:G:H2'    | 8:CB:760:G:H5'    | 1.96                     | 0.47              |
| 8:CB:810:U:C6     | 18:CL:37:GLY:HA2  | 2.49                     | 0.47              |
| 8:CB:856:G:N2     | 8:CB:921:C:O2     | 2.47                     | 0.47              |
| 8:CB:975:A:H5''   | 24:CR:83:TYR:OH   | 2.15                     | 0.47              |
| 8:CB:978:G:N1     | 8:CB:986:C:C5     | 2.82                     | 0.47              |
| 8:CB:1268:A:C6    | 8:CB:2013:A:N7    | 2.83                     | 0.47              |
| 8:CB:1270:C:H2'   | 8:CB:1648:U:H5''  | 1.96                     | 0.47              |
| 8:CB:1348:C:H5'   | 8:CB:1349:C:H5    | 1.78                     | 0.47              |
| 8:CB:1564:C:C4    | 8:CB:1565:C:N4    | 2.73                     | 0.47              |
| 8:CB:1567:G:O4'   | 8:CB:1568:G:N2    | 2.46                     | 0.47              |
| 8:CB:1654:A:OP2   | 20:CN:3:HIS:NE2   | 2.47                     | 0.47              |
| 8:CB:1655:A:H2'   | 8:CB:1656:C:O4'   | 2.13                     | 0.47              |
| 8:CB:1792:G:O5'   | 9:CC:203:VAL:HG23 | 2.14                     | 0.47              |
| 8:CB:1814:G:C8    | 8:CB:1814:G:C5'   | 2.97                     | 0.47              |
| 8:CB:1933:G:C3'   | 8:CB:1933:G:C8    | 2.98                     | 0.47              |
| 8:CB:2013:A:H2'   | 8:CB:2014:A:H5'   | 1.95                     | 0.47              |
| 8:CB:2262:U:C4    | 8:CB:2279:G:C2    | 3.03                     | 0.47              |
| 8:CB:2282:G:C5    | 8:CB:2425:A:H2    | 2.22                     | 0.47              |
| 8:CB:2335:A:C5    | 8:CB:2337:G:C5    | 3.01                     | 0.47              |
| 8:CB:2384:U:O2    | 8:CB:2384:U:H2'   | 2.13                     | 0.47              |
| 8:CB:2587:A:H5'   | 8:CB:2588:G:OP2   | 2.13                     | 0.47              |
| 8:CB:2714:G:H2'   | 8:CB:2715:C:C6    | 2.50                     | 0.47              |
| 8:CB:2738:A:C2    | 8:CB:2739:U:O2    | 2.68                     | 0.47              |
| 8:CB:2808:G:N3    | 8:CB:2891:U:C2    | 2.82                     | 0.47              |
| 8:CB:2854:G:H2'   | 8:CB:2855:C:O4'   | 2.15                     | 0.47              |
| 9:CC:238:ASN:O    | 9:CC:239:PHE:C    | 2.53                     | 0.47              |
| 9:CC:254:LYS:O    | 9:CC:255:LYS:C    | 2.52                     | 0.47              |
| 11:CE:17:THR:HG23 | 11:CE:18:THR:H    | 1.79                     | 0.47              |
| 11:CE:113:VAL:O   | 11:CE:115:GLN:N   | 2.47                     | 0.47              |
| 11:CE:190:ALA:H   | 11:CE:194:LYS:HE2 | 1.79                     | 0.47              |
| 16:CJ:41:LYS:HD3  | 16:CJ:44:TYR:CB   | 2.40                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:CK:110:GLU:C   | 17:CK:111:LYS:CG   | 2.79                     | 0.47              |
| 21:CO:72:ALA:HA   | 21:CO:106:LEU:HA   | 1.97                     | 0.47              |
| 21:CO:94:ARG:HA   | 21:CO:94:ARG:CZ    | 2.44                     | 0.47              |
| 22:CP:25:VAL:HG12 | 22:CP:27:VAL:CG1   | 2.42                     | 0.47              |
| 22:CP:50:ARG:CG   | 22:CP:99:LEU:HB3   | 2.44                     | 0.47              |
| 23:CQ:43:GLN:O    | 23:CQ:44:TYR:C     | 2.50                     | 0.47              |
| 25:CS:28:LYS:HB3  | 25:CS:31:GLN:C     | 2.34                     | 0.47              |
| 28:CV:4:ILE:O     | 28:CV:63:ILE:HA    | 2.15                     | 0.47              |
| 29:CW:28:GLU:OE1  | 29:CW:28:GLU:HA    | 2.14                     | 0.47              |
| 29:CW:31:LEU:HB3  | 29:CW:32:ALA:H     | 1.50                     | 0.47              |
| 33:DA:75:G:H2'    | 33:DA:76:G:O4'     | 2.14                     | 0.47              |
| 33:DA:139:A:C2    | 33:DA:225:C:N3     | 2.82                     | 0.47              |
| 33:DA:299:G:C6    | 33:DA:300:A:N1     | 2.81                     | 0.47              |
| 33:DA:316:C:OP2   | 33:DA:351:G:O2'    | 2.29                     | 0.47              |
| 33:DA:405:U:C4    | 36:DD:4:LEU:HD11   | 2.49                     | 0.47              |
| 33:DA:407:U:H4'   | 36:DD:115:GLN:OE1  | 2.14                     | 0.47              |
| 33:DA:557:G:C6    | 33:DA:558:G:C2     | 3.02                     | 0.47              |
| 33:DA:557:G:H2'   | 33:DA:558:G:C8     | 2.50                     | 0.47              |
| 33:DA:668:G:H2'   | 33:DA:669:G:H5''   | 1.95                     | 0.47              |
| 33:DA:719:C:C6    | 33:DA:720:C:C6     | 3.03                     | 0.47              |
| 33:DA:719:C:H5    | 33:DA:720:C:N3     | 2.12                     | 0.47              |
| 33:DA:799:G:C2'   | 33:DA:800:G:H5'    | 2.42                     | 0.47              |
| 33:DA:801:U:O2'   | 33:DA:802:A:C8     | 2.42                     | 0.47              |
| 33:DA:946:A:H2'   | 33:DA:947:G:H8     | 1.78                     | 0.47              |
| 33:DA:1023:U:H2'  | 33:DA:1024:G:O4'   | 2.12                     | 0.47              |
| 33:DA:1096:C:H2'  | 33:DA:1097:C:H6    | 1.79                     | 0.47              |
| 33:DA:1113:C:H4'  | 35:DC:13:ILE:HD11  | 1.95                     | 0.47              |
| 33:DA:1154:G:N1   | 33:DA:1155:A:N7    | 2.62                     | 0.47              |
| 33:DA:1305:G:P    | 33:DA:1305:G:O4'   | 2.71                     | 0.47              |
| 33:DA:1348:U:H6   | 33:DA:1348:U:C5'   | 2.27                     | 0.47              |
| 33:DA:1421:G:N2   | 33:DA:1422:G:C4    | 2.82                     | 0.47              |
| 33:DA:1468:A:C2   | 33:DA:1469:C:C5    | 3.02                     | 0.47              |
| 34:DB:187:ASP:OD2 | 34:DB:203:ASP:CG   | 2.53                     | 0.47              |
| 35:DC:46:LEU:CD1  | 35:DC:49:ALA:HB3   | 2.45                     | 0.47              |
| 36:DD:155:LYS:HA  | 36:DD:158:LEU:HD12 | 1.96                     | 0.47              |
| 37:DE:91:SER:HA   | 37:DE:128:GLY:O    | 2.13                     | 0.47              |
| 38:DF:25:TYR:O    | 38:DF:29:ILE:HG13  | 2.14                     | 0.47              |
| 40:DH:37:ASN:O    | 40:DH:41:GLU:HG3   | 2.15                     | 0.47              |
| 41:DI:38:PHE:N    | 41:DI:38:PHE:CD2   | 2.81                     | 0.47              |
| 42:DJ:67:ILE:HG13 | 46:DN:94:GLY:HA3   | 1.95                     | 0.47              |
| 45:DM:38:ILE:HG13 | 45:DM:55:LEU:HD21  | 1.96                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 46:DN:61:ASN:HB3  | 46:DN:72:PHE:CE2  | 2.49                     | 0.47              |
| 46:DN:69:PRO:C    | 46:DN:71:GLY:N    | 2.68                     | 0.47              |
| 5:A4:5:ALA:CB     | 8:AB:2466:C:P     | 3.01                     | 0.47              |
| 8:AB:42:A:H5''    | 8:AB:43:G:OP2     | 2.14                     | 0.47              |
| 8:AB:51:G:N2      | 8:AB:118:A:N7     | 2.62                     | 0.47              |
| 8:AB:285:G:C6     | 8:AB:286:U:C5     | 3.02                     | 0.47              |
| 8:AB:482:A:N3     | 8:AB:482:A:C2'    | 2.63                     | 0.47              |
| 8:AB:601:C:H2'    | 8:AB:605:G:H5''   | 1.97                     | 0.47              |
| 8:AB:665:U:O2'    | 8:AB:666:A:H5'    | 2.14                     | 0.47              |
| 8:AB:866:A:C2'    | 8:AB:867:C:H5'    | 2.36                     | 0.47              |
| 8:AB:1018:U:C2    | 8:AB:1019:U:C5    | 3.03                     | 0.47              |
| 8:AB:1036:G:C5    | 8:AB:1120:G:O6    | 2.67                     | 0.47              |
| 8:AB:1062:G:H2'   | 8:AB:1063:G:C8    | 2.50                     | 0.47              |
| 8:AB:1135:C:N4    | 8:AB:1139:G:C6    | 2.83                     | 0.47              |
| 8:AB:1196:C:H2'   | 8:AB:1197:G:H8    | 1.77                     | 0.47              |
| 8:AB:1215:G:C3'   | 8:AB:1216:G:H5''  | 2.43                     | 0.47              |
| 8:AB:1251:C:P     | 23:AQ:5:ARG:NH2   | 2.88                     | 0.47              |
| 8:AB:1340:U:H3'   | 26:AT:61:LEU:HD22 | 1.95                     | 0.47              |
| 8:AB:1581:G:H2'   | 8:AB:1582:C:O4'   | 2.14                     | 0.47              |
| 8:AB:1605:C:O4'   | 8:AB:1610:A:C6    | 2.67                     | 0.47              |
| 8:AB:1816:C:H5    | 9:AC:62:ARG:CD    | 2.25                     | 0.47              |
| 8:AB:1835:G:H2'   | 8:AB:1836:C:C6    | 2.50                     | 0.47              |
| 8:AB:1933:G:C8    | 8:AB:1933:G:H3'   | 2.49                     | 0.47              |
| 8:AB:1942:C:H3'   | 8:AB:1943:U:H5''  | 1.95                     | 0.47              |
| 8:AB:2103:C:H2'   | 8:AB:2104:C:O4'   | 2.15                     | 0.47              |
| 8:AB:2107:G:H2'   | 8:AB:2108:A:H5''  | 1.97                     | 0.47              |
| 8:AB:2295:C:H2'   | 8:AB:2295:C:O2    | 2.13                     | 0.47              |
| 8:AB:2327:A:H8    | 8:AB:2327:A:H5'   | 1.79                     | 0.47              |
| 8:AB:2341:G:C5    | 8:AB:2342:C:C5    | 3.03                     | 0.47              |
| 8:AB:2346:A:C2    | 8:AB:2383:G:C6    | 3.03                     | 0.47              |
| 8:AB:2577:A:C4'   | 8:AB:2612:C:N4    | 2.77                     | 0.47              |
| 8:AB:2648:G:O5'   | 8:AB:2648:G:C8    | 2.67                     | 0.47              |
| 8:AB:2714:G:H2'   | 8:AB:2715:C:H6    | 1.79                     | 0.47              |
| 8:AB:2791:G:H5''  | 8:AB:2791:G:C8    | 2.47                     | 0.47              |
| 9:AC:22:GLU:CA    | 9:AC:202:ARG:HE   | 2.27                     | 0.47              |
| 11:AE:4:VAL:N     | 11:AE:12:LEU:HD13 | 2.28                     | 0.47              |
| 11:AE:43:THR:O    | 11:AE:44:ARG:O    | 2.32                     | 0.47              |
| 11:AE:181:ILE:CG2 | 18:AL:12:SER:O    | 2.63                     | 0.47              |
| 13:AG:122:ALA:CB  | 13:AG:131:VAL:O   | 2.61                     | 0.47              |
| 14:AH:73:ASN:ND2  | 14:AH:73:ASN:H    | 2.12                     | 0.47              |
| 16:AJ:7:LYS:O     | 16:AJ:7:LYS:HG2   | 2.14                     | 0.47              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 17:AK:61:VAL:HG13 | 17:AK:87:LEU:HG  | 1.95                     | 0.47              |
| 18:AL:88:GLY:O    | 18:AL:90:VAL:N   | 2.47                     | 0.47              |
| 19:AM:90:GLU:O    | 19:AM:91:TYR:CB  | 2.56                     | 0.47              |
| 24:AR:7:SER:O     | 24:AR:21:ARG:NH2 | 2.48                     | 0.47              |
| 24:AR:46:GLU:O    | 24:AR:47:VAL:CB  | 2.62                     | 0.47              |
| 24:AR:63:VAL:HG12 | 24:AR:64:VAL:N   | 2.30                     | 0.47              |
| 26:AT:11:LEU:HD21 | 26:AT:47:VAL:CG2 | 2.44                     | 0.47              |
| 28:AV:37:PRO:O    | 28:AV:38:LEU:HB2 | 2.15                     | 0.47              |
| 29:AW:45:HIS:CE1  | 29:AW:60:ALA:HB1 | 2.49                     | 0.47              |
| 31:AY:43:ILE:HD13 | 31:AY:43:ILE:O   | 2.14                     | 0.47              |
| 33:BA:305:G:H4'   | 33:BA:306:A:H5'  | 1.96                     | 0.47              |
| 33:BA:406:G:C5    | 33:BA:407:U:H5   | 2.32                     | 0.47              |
| 33:BA:580:C:H2'   | 33:BA:581:G:C8   | 2.49                     | 0.47              |
| 33:BA:654:G:N3    | 33:BA:753:A:C2   | 2.83                     | 0.47              |
| 33:BA:722:G:N3    | 33:BA:722:G:C3'  | 2.77                     | 0.47              |
| 33:BA:778:G:O6    | 33:BA:804:U:C4   | 2.68                     | 0.47              |
| 33:BA:791:G:N7    | 33:BA:792:A:N7   | 2.63                     | 0.47              |
| 33:BA:938:A:N6    | 33:BA:939:G:C6   | 2.83                     | 0.47              |
| 33:BA:1159:U:O2   | 33:BA:1182:G:C2  | 2.68                     | 0.47              |
| 33:BA:1242:G:C6   | 33:BA:1243:C:C4  | 3.02                     | 0.47              |
| 33:BA:1367:C:H2'  | 33:BA:1368:A:C8  | 2.48                     | 0.47              |
| 33:BA:1439:G:C2   | 33:BA:1440:U:H1' | 2.49                     | 0.47              |
| 36:BD:25:ARG:HH12 | 36:BD:30:LYS:CB  | 2.27                     | 0.47              |
| 48:BP:7:ALA:N     | 48:BP:18:GLN:O   | 2.47                     | 0.47              |
| 53:BU:13:VAL:CG1  | 53:BU:14:ALA:N   | 2.74                     | 0.47              |
| 1:C0:48:TYR:CD2   | 1:C0:49:ARG:N    | 2.83                     | 0.47              |
| 2:C1:26:LYS:HE3   | 8:CB:2285:C:OP1  | 2.15                     | 0.47              |
| 3:C2:9:VAL:O      | 3:C2:11:LYS:N    | 2.47                     | 0.47              |
| 3:C2:18:PHE:CD1   | 8:CB:126:A:C5'   | 2.97                     | 0.47              |
| 4:C3:34:LYS:CE    | 8:CB:2420:C:OP1  | 2.62                     | 0.47              |
| 7:CA:13:G:C8      | 7:CA:13:G:H3'    | 2.50                     | 0.47              |
| 8:CB:44:A:H2'     | 8:CB:45:G:O4'    | 2.14                     | 0.47              |
| 8:CB:123:G:H2'    | 8:CB:124:G:H5''  | 1.96                     | 0.47              |
| 8:CB:191:A:H8     | 8:CB:191:A:O5'   | 1.97                     | 0.47              |
| 8:CB:224:U:O4     | 8:CB:420:C:H5'   | 2.15                     | 0.47              |
| 8:CB:237:C:C5     | 8:CB:238:C:H5    | 2.32                     | 0.47              |
| 8:CB:527:C:N4     | 8:CB:2779:U:OP2  | 2.39                     | 0.47              |
| 8:CB:672:C:C2'    | 8:CB:673:C:H5'   | 2.45                     | 0.47              |
| 8:CB:699:A:C2'    | 8:CB:700:G:O5'   | 2.62                     | 0.47              |
| 8:CB:738:G:C5     | 8:CB:739:A:C6    | 3.02                     | 0.47              |
| 8:CB:760:G:H2'    | 8:CB:761:A:H8    | 1.79                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:799:G:O2'     | 8:CB:800:A:OP1     | 2.25                     | 0.47              |
| 8:CB:837:C:H2'     | 8:CB:838:C:H5'     | 1.97                     | 0.47              |
| 8:CB:949:G:C5'     | 8:CB:950:G:OP2     | 2.62                     | 0.47              |
| 8:CB:985:C:C2'     | 8:CB:986:C:H5''    | 2.43                     | 0.47              |
| 8:CB:1053:C:N4     | 8:CB:1107:G:O6     | 2.48                     | 0.47              |
| 8:CB:1122:G:H5''   | 8:CB:1122:G:H8     | 1.79                     | 0.47              |
| 8:CB:1176:U:O5'    | 8:CB:1176:U:C6     | 2.67                     | 0.47              |
| 8:CB:1268:A:C5     | 8:CB:2013:A:N7     | 2.82                     | 0.47              |
| 8:CB:1421:G:H1'    | 8:CB:2211:A:N1     | 2.30                     | 0.47              |
| 8:CB:1605:C:O4'    | 8:CB:1610:A:C6     | 2.67                     | 0.47              |
| 8:CB:1652:A:C2'    | 8:CB:1653:G:H5'    | 2.45                     | 0.47              |
| 8:CB:1773:A:H2'    | 8:CB:1774:C:O5'    | 2.15                     | 0.47              |
| 8:CB:1809:A:H3'    | 8:CB:1810:A:C8     | 2.49                     | 0.47              |
| 8:CB:1823:G:C8     | 8:CB:1823:G:C3'    | 2.97                     | 0.47              |
| 8:CB:1827:U:O2'    | 8:CB:1970:A:N3     | 2.40                     | 0.47              |
| 8:CB:1988:G:C6     | 8:CB:1989:G:C5     | 3.02                     | 0.47              |
| 8:CB:2081:U:H4'    | 32:CZ:23:LYS:HD2   | 1.95                     | 0.47              |
| 8:CB:2201:G:N2     | 8:CB:2223:G:C4     | 2.82                     | 0.47              |
| 8:CB:2280:G:C2     | 8:CB:2281:A:C8     | 3.03                     | 0.47              |
| 8:CB:2330:G:H21    | 29:CW:36:ILE:HG12  | 1.80                     | 0.47              |
| 8:CB:2354:C:H6     | 8:CB:2354:C:H5''   | 1.79                     | 0.47              |
| 8:CB:2676:C:C6     | 8:CB:2676:C:C3'    | 2.97                     | 0.47              |
| 8:CB:2707:U:O2     | 8:CB:2707:U:H2'    | 2.15                     | 0.47              |
| 8:CB:2856:A:C2     | 8:CB:2862:G:C2     | 3.03                     | 0.47              |
| 8:CB:2869:G:C5     | 8:CB:2870:C:C5     | 3.02                     | 0.47              |
| 8:CB:2885:G:N1     | 8:CB:2886:A:H8     | 2.13                     | 0.47              |
| 10:CD:59:ARG:NE    | 10:CD:63:PRO:HB3   | 2.29                     | 0.47              |
| 10:CD:184:ARG:O    | 10:CD:185:ASN:HB2  | 2.15                     | 0.47              |
| 11:CE:2:GLU:O      | 11:CE:15:SER:HB2   | 2.14                     | 0.47              |
| 12:CF:120:SER:O    | 12:CF:127:TYR:CD1  | 2.67                     | 0.47              |
| 12:CF:157:THR:HG21 | 12:CF:168:LEU:CD1  | 2.44                     | 0.47              |
| 13:CG:92:GLY:C     | 13:CG:93:TYR:HD1   | 2.18                     | 0.47              |
| 15:CI:20:SER:HA    | 15:CI:25:PRO:HD2   | 1.95                     | 0.47              |
| 16:CJ:41:LYS:CG    | 23:CQ:63:ARG:NH2   | 2.66                     | 0.47              |
| 16:CJ:58:ASN:O     | 16:CJ:59:ALA:HB3   | 2.13                     | 0.47              |
| 16:CJ:59:ALA:HB1   | 16:CJ:101:ILE:HD12 | 1.96                     | 0.47              |
| 16:CJ:136:GLN:O    | 16:CJ:138:GLN:N    | 2.47                     | 0.47              |
| 17:CK:98:ARG:HD2   | 17:CK:100:PHE:CE2  | 2.49                     | 0.47              |
| 19:CM:86:LYS:O     | 19:CM:87:GLY:C     | 2.52                     | 0.47              |
| 20:CN:85:PRO:O     | 20:CN:88:ALA:HB3   | 2.13                     | 0.47              |
| 23:CQ:40:LYS:HG3   | 23:CQ:44:TYR:HB3   | 1.95                     | 0.47              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 23:CQ:46:TYR:HB2   | 24:CR:78:ARG:O   | 2.15                     | 0.47              |
| 23:CQ:49:ARG:CG    | 24:CR:77:PHE:HZ  | 2.06                     | 0.47              |
| 24:CR:3:ALA:HB1    | 24:CR:12:HIS:CD2 | 2.50                     | 0.47              |
| 25:CS:110:ARG:NH1  | 25:CS:110:ARG:CG | 2.68                     | 0.47              |
| 27:CU:41:VAL:HA    | 27:CU:57:ILE:CD1 | 2.33                     | 0.47              |
| 28:CV:63:ILE:HB    | 28:CV:70:ILE:CG1 | 2.40                     | 0.47              |
| 29:CW:42:THR:HB    | 29:CW:75:ASN:CB  | 2.44                     | 0.47              |
| 30:CX:1:MET:H3     | 30:CX:6:LEU:CB   | 2.27                     | 0.47              |
| 33:DA:20:U:H4'     | 33:DA:572:A:N6   | 2.30                     | 0.47              |
| 33:DA:133:U:C2     | 33:DA:230:G:N1   | 2.82                     | 0.47              |
| 33:DA:390:U:O2     | 33:DA:391:G:N7   | 2.47                     | 0.47              |
| 33:DA:555:U:O2     | 33:DA:556:C:C6   | 2.67                     | 0.47              |
| 33:DA:593:U:N3     | 33:DA:594:U:C4   | 2.82                     | 0.47              |
| 33:DA:658:C:C2     | 33:DA:749:A:C2   | 3.02                     | 0.47              |
| 33:DA:675:A:N3     | 33:DA:675:A:H2'  | 2.29                     | 0.47              |
| 33:DA:687:A:H2     | 33:DA:704:A:C2   | 2.33                     | 0.47              |
| 33:DA:781:A:H2'    | 33:DA:782:A:C5'  | 2.34                     | 0.47              |
| 33:DA:920:U:N3     | 33:DA:921:U:O4   | 2.47                     | 0.47              |
| 33:DA:954:G:C8     | 33:DA:954:G:O5'  | 2.65                     | 0.47              |
| 33:DA:1053:G:C2    | 33:DA:1056:U:O4  | 2.68                     | 0.47              |
| 33:DA:1078:U:C6    | 33:DA:1078:U:C3' | 2.97                     | 0.47              |
| 33:DA:1220:G:H2'   | 33:DA:1221:G:O4' | 2.13                     | 0.47              |
| 33:DA:1289:A:H3'   | 33:DA:1290:G:H8  | 1.80                     | 0.47              |
| 33:DA:1319:A:H5''  | 51:DS:4:LEU:HD11 | 1.96                     | 0.47              |
| 33:DA:1374:A:H1'   | 39:DG:30:MET:SD  | 2.55                     | 0.47              |
| 33:DA:1425:U:O2    | 33:DA:1476:A:N1  | 2.48                     | 0.47              |
| 34:DB:27:LYS:N     | 34:DB:28:PRO:HD3 | 2.29                     | 0.47              |
| 35:DC:179:ALA:O    | 35:DC:180:ASP:C  | 2.53                     | 0.47              |
| 36:DD:26:ALA:O     | 36:DD:28:ASP:N   | 2.47                     | 0.47              |
| 37:DE:85:LYS:CG    | 37:DE:94:PHE:HD2 | 2.28                     | 0.47              |
| 37:DE:134:ASN:HD22 | 37:DE:134:ASN:N  | 2.12                     | 0.47              |
| 43:DK:15:VAL:H     | 43:DK:77:GLY:HA3 | 1.79                     | 0.47              |
| 44:DL:27:PRO:HB2   | 44:DL:28:GLN:OE1 | 2.14                     | 0.47              |
| 47:DO:48:ASP:O     | 47:DO:51:SER:HB2 | 2.14                     | 0.47              |
| 1:A0:16:ARG:HA     | 1:A0:16:ARG:HD3  | 1.28                     | 0.47              |
| 2:A1:47:ILE:O      | 2:A1:48:TYR:HB2  | 2.13                     | 0.47              |
| 3:A2:34:ARG:HH21   | 3:A2:42:LEU:CD1  | 2.21                     | 0.47              |
| 7:AA:18:G:H21      | 7:AA:19:C:H1'    | 1.79                     | 0.47              |
| 8:AB:129:C:O2'     | 8:AB:130:C:C6    | 2.65                     | 0.47              |
| 8:AB:136:G:H1      | 8:AB:144:A:H2    | 1.63                     | 0.47              |
| 8:AB:163:C:C2'     | 8:AB:164:C:O4'   | 2.58                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:178:G:H8     | 8:AB:178:G:O5'     | 1.98                     | 0.47              |
| 8:AB:194:G:N3     | 8:AB:194:G:C2'     | 2.67                     | 0.47              |
| 8:AB:262:A:C8     | 8:AB:263:G:C8      | 3.01                     | 0.47              |
| 8:AB:524:G:C6     | 8:AB:525:U:C5      | 3.02                     | 0.47              |
| 8:AB:565:C:C2     | 8:AB:566:U:C6      | 3.03                     | 0.47              |
| 8:AB:571:U:C5     | 8:AB:575:A:N6      | 2.82                     | 0.47              |
| 8:AB:656:G:H2'    | 8:AB:657:U:H6      | 1.78                     | 0.47              |
| 8:AB:677:A:N1     | 8:AB:802:A:C5      | 2.82                     | 0.47              |
| 8:AB:931:U:H3     | 8:AB:1182:G:N2     | 2.12                     | 0.47              |
| 8:AB:989:G:HO2'   | 8:AB:990:A:C5'     | 2.27                     | 0.47              |
| 8:AB:1007:C:O2'   | 16:AJ:110:PRO:HA   | 2.15                     | 0.47              |
| 8:AB:1048:A:N6    | 8:AB:1111:A:C5     | 2.83                     | 0.47              |
| 8:AB:1093:G:C5    | 8:AB:1094:U:C5     | 3.02                     | 0.47              |
| 8:AB:1340:U:H4'   | 8:AB:1341:G:OP2    | 2.14                     | 0.47              |
| 8:AB:1355:G:C5    | 8:AB:1377:G:N2     | 2.82                     | 0.47              |
| 8:AB:1380:G:C2    | 8:AB:1381:G:C8     | 3.02                     | 0.47              |
| 8:AB:1521:G:H8    | 8:AB:1521:G:O5'    | 1.98                     | 0.47              |
| 8:AB:1524:G:C4    | 8:AB:1525:A:C8     | 3.03                     | 0.47              |
| 8:AB:1740:G:C2    | 8:AB:1741:C:C2     | 3.03                     | 0.47              |
| 8:AB:1842:G:C5    | 8:AB:1843:C:C4     | 3.02                     | 0.47              |
| 8:AB:1886:U:H6    | 8:AB:1886:U:O5'    | 1.98                     | 0.47              |
| 8:AB:2011:U:C5    | 8:AB:2012:G:N7     | 2.83                     | 0.47              |
| 8:AB:2359:C:O2'   | 8:AB:2360:G:P      | 2.72                     | 0.47              |
| 8:AB:2386:A:O2'   | 8:AB:2387:U:H5'    | 2.14                     | 0.47              |
| 8:AB:2456:C:C4    | 8:AB:2457:U:C5     | 3.01                     | 0.47              |
| 8:AB:2575:C:C5'   | 10:AD:150:GLN:HE21 | 2.13                     | 0.47              |
| 8:AB:2588:G:C6    | 8:AB:2589:A:N7     | 2.82                     | 0.47              |
| 8:AB:2622:U:O2'   | 8:AB:2825:G:N7     | 2.46                     | 0.47              |
| 8:AB:2761:A:C6    | 8:AB:2762:C:C5     | 3.02                     | 0.47              |
| 9:AC:34:GLU:CD    | 9:AC:35:LYS:N      | 2.68                     | 0.47              |
| 9:AC:45:ASN:OD1   | 9:AC:46:GLY:N      | 2.46                     | 0.47              |
| 9:AC:73:ILE:HG22  | 9:AC:95:TYR:HD1    | 1.77                     | 0.47              |
| 9:AC:105:ALA:O    | 9:AC:195:GLY:HA2   | 2.14                     | 0.47              |
| 9:AC:265:PHE:O    | 9:AC:266:ILE:O     | 2.33                     | 0.47              |
| 10:AD:46:ARG:NE   | 10:AD:80:TRP:CZ2   | 2.82                     | 0.47              |
| 10:AD:203:VAL:O   | 10:AD:203:VAL:HG12 | 2.15                     | 0.47              |
| 11:AE:43:THR:HG23 | 11:AE:44:ARG:NH2   | 2.21                     | 0.47              |
| 11:AE:147:LEU:O   | 11:AE:148:ILE:O    | 2.33                     | 0.47              |
| 16:AJ:3:THR:HG21  | 23:AQ:93:ILE:CG1   | 2.45                     | 0.47              |
| 16:AJ:114:LEU:C   | 16:AJ:116:ARG:N    | 2.68                     | 0.47              |
| 18:AL:13:LYS:O    | 18:AL:15:ALA:N     | 2.48                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 18:AL:98:ALA:O    | 18:AL:99:ASN:HB2   | 2.14                     | 0.47              |
| 19:AM:117:PHE:CG  | 19:AM:124:LEU:HD21 | 2.48                     | 0.47              |
| 21:AO:62:LEU:HD12 | 21:AO:62:LEU:O     | 2.15                     | 0.47              |
| 22:AP:90:ALA:HB3  | 22:AP:112:ARG:HA   | 1.96                     | 0.47              |
| 23:AQ:26:ALA:CA   | 23:AQ:29:ARG:HB2   | 2.42                     | 0.47              |
| 24:AR:85:LYS:C    | 24:AR:87:GLN:N     | 2.68                     | 0.47              |
| 29:AW:26:GLY:O    | 29:AW:59:PHE:HB3   | 2.15                     | 0.47              |
| 32:AZ:21:VAL:HG11 | 32:AZ:23:LYS:HD2   | 1.96                     | 0.47              |
| 33:BA:65:A:N1     | 33:BA:381:C:O2     | 2.48                     | 0.47              |
| 33:BA:260:G:C8    | 55:BA:5060:HOH:O   | 2.55                     | 0.47              |
| 33:BA:356:A:C2    | 33:BA:357:G:H1'    | 2.49                     | 0.47              |
| 33:BA:376:G:C2    | 33:BA:389:A:C2     | 3.02                     | 0.47              |
| 33:BA:411:A:C5    | 33:BA:429:U:O4     | 2.67                     | 0.47              |
| 33:BA:501:C:H1'   | 33:BA:549:C:H1'    | 1.96                     | 0.47              |
| 33:BA:538:G:OP1   | 44:BL:109:ARG:HD2  | 2.14                     | 0.47              |
| 33:BA:557:G:C6    | 33:BA:558:G:N1     | 2.82                     | 0.47              |
| 33:BA:577:G:C1'   | 33:BA:816:A:H2'    | 2.45                     | 0.47              |
| 33:BA:620:C:C4    | 36:BD:131:ILE:HG12 | 2.49                     | 0.47              |
| 33:BA:628:G:N2    | 33:BA:629:A:N3     | 2.62                     | 0.47              |
| 33:BA:644:U:C5'   | 40:BH:83:ARG:HH22  | 2.27                     | 0.47              |
| 33:BA:695:A:H2'   | 33:BA:696:A:O4'    | 2.15                     | 0.47              |
| 33:BA:845:A:H5'   | 33:BA:846:G:C8     | 2.50                     | 0.47              |
| 33:BA:1130:A:C8   | 33:BA:1146:A:N1    | 2.83                     | 0.47              |
| 33:BA:1144:G:C2'  | 33:BA:1145:A:C8    | 2.97                     | 0.47              |
| 33:BA:1296:C:C5'  | 45:BM:13:HIS:CD2   | 2.98                     | 0.47              |
| 33:BA:1451:U:O2   | 33:BA:1451:U:C2'   | 2.61                     | 0.47              |
| 33:BA:1500:A:OP2  | 33:BA:1505:G:OP2   | 2.32                     | 0.47              |
| 33:BA:1514:G:N2   | 33:BA:1521:C:N3    | 2.62                     | 0.47              |
| 34:BB:22:TRP:HA   | 34:BB:188:THR:O    | 2.14                     | 0.47              |
| 34:BB:67:LEU:HD23 | 34:BB:160:LEU:HB2  | 1.96                     | 0.47              |
| 34:BB:85:SER:HB2  | 34:BB:221:ARG:HH12 | 1.80                     | 0.47              |
| 36:BD:36:ALA:O    | 36:BD:38:GLY:N     | 2.46                     | 0.47              |
| 36:BD:36:ALA:N    | 36:BD:37:PRO:HD3   | 2.30                     | 0.47              |
| 36:BD:107:GLY:HA3 | 36:BD:113:ALA:HB2  | 1.97                     | 0.47              |
| 40:BH:11:THR:HG22 | 40:BH:15:ASN:ND2   | 2.30                     | 0.47              |
| 44:BL:33:CYS:CA   | 44:BL:54:VAL:HG12  | 2.44                     | 0.47              |
| 45:BM:8:ILE:O     | 45:BM:8:ILE:HG13   | 2.15                     | 0.47              |
| 49:BQ:19:SER:C    | 49:BQ:20:ILE:HD12  | 2.34                     | 0.47              |
| 52:BT:67:HIS:O    | 52:BT:68:LYS:HB3   | 2.14                     | 0.47              |
| 1:C0:52:LYS:HE2   | 1:C0:53:VAL:HG12   | 1.96                     | 0.47              |
| 2:C1:2:LYS:HG3    | 2:C1:2:LYS:O       | 2.15                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:C1:24:LYS:HG2    | 2:C1:25:ASN:N      | 2.28                     | 0.47              |
| 3:C2:1:MET:SD      | 8:CB:752:A:H5''    | 2.54                     | 0.47              |
| 5:C4:18:LYS:HE2    | 5:C4:19:ARG:H      | 1.78                     | 0.47              |
| 7:CA:14:U:O2'      | 7:CA:15:A:OP1      | 2.31                     | 0.47              |
| 8:CB:88:G:O2'      | 8:CB:89:A:H5'      | 2.15                     | 0.47              |
| 8:CB:220:G:C6      | 8:CB:427:U:C5      | 3.03                     | 0.47              |
| 8:CB:280:U:O5'     | 8:CB:280:U:H6      | 1.97                     | 0.47              |
| 8:CB:363:G:O2'     | 8:CB:364:C:H5'     | 2.15                     | 0.47              |
| 8:CB:784:G:C2      | 8:CB:792:A:C5      | 3.02                     | 0.47              |
| 8:CB:784:G:N1      | 8:CB:792:A:C4      | 2.83                     | 0.47              |
| 8:CB:866:A:N1      | 8:CB:867:C:C2      | 2.82                     | 0.47              |
| 8:CB:873:C:C6      | 8:CB:873:C:C3'     | 2.97                     | 0.47              |
| 8:CB:960:A:H8      | 8:CB:960:A:O5'     | 1.96                     | 0.47              |
| 8:CB:1254:A:N6     | 11:CE:77:ILE:CD1   | 2.77                     | 0.47              |
| 8:CB:1429:G:O2'    | 8:CB:1430:G:H5'    | 2.15                     | 0.47              |
| 8:CB:1551:A:C3'    | 8:CB:1552:A:H5''   | 2.45                     | 0.47              |
| 8:CB:1836:C:H2'    | 8:CB:1837:C:H5'    | 1.97                     | 0.47              |
| 8:CB:1857:G:N2     | 8:CB:1886:U:O4     | 2.47                     | 0.47              |
| 8:CB:1906:G:C8     | 8:CB:1906:G:C3'    | 2.97                     | 0.47              |
| 8:CB:2070:A:C2     | 8:CB:2071:A:N3     | 2.83                     | 0.47              |
| 8:CB:2100:G:C6     | 8:CB:2101:A:C6     | 3.03                     | 0.47              |
| 8:CB:2560:A:C2     | 8:CB:2561:U:C1'    | 2.98                     | 0.47              |
| 55:CB:5119:HOH:O   | 11:CE:58:LYS:HG3   | 2.15                     | 0.47              |
| 9:CC:153:LEU:HD22  | 9:CC:161:VAL:HG21  | 1.97                     | 0.47              |
| 9:CC:174:ARG:CG    | 9:CC:174:ARG:O     | 2.62                     | 0.47              |
| 10:CD:45:TYR:O     | 10:CD:46:ARG:HB2   | 2.14                     | 0.47              |
| 11:CE:4:VAL:HG23   | 11:CE:14:VAL:HG11  | 1.95                     | 0.47              |
| 11:CE:178:VAL:HG23 | 11:CE:179:SER:H    | 1.79                     | 0.47              |
| 12:CF:50:ASP:CG    | 12:CF:51:ASN:H     | 2.17                     | 0.47              |
| 12:CF:135:ILE:HG13 | 12:CF:140:ILE:CD1  | 2.41                     | 0.47              |
| 12:CF:149:ARG:O    | 12:CF:150:GLY:C    | 2.53                     | 0.47              |
| 14:CH:5:LEU:HA     | 14:CH:35:LYS:CE    | 2.45                     | 0.47              |
| 16:CJ:3:THR:O      | 16:CJ:4:PHE:CB     | 2.61                     | 0.47              |
| 16:CJ:45:THR:N     | 23:CQ:63:ARG:NH2   | 2.44                     | 0.47              |
| 18:CL:141:LYS:O    | 18:CL:142:ILE:HG12 | 2.15                     | 0.47              |
| 20:CN:61:ALA:C     | 20:CN:63:ARG:N     | 2.65                     | 0.47              |
| 26:CT:50:LEU:O     | 26:CT:50:LEU:HD12  | 2.14                     | 0.47              |
| 30:CX:22:LEU:O     | 30:CX:25:GLN:CD    | 2.53                     | 0.47              |
| 31:CY:1:ALA:CB     | 31:CY:37:ARG:HB3   | 2.42                     | 0.47              |
| 33:DA:199:A:C2     | 33:DA:219:U:C2     | 3.02                     | 0.47              |
| 33:DA:257:G:H5''   | 33:DA:257:G:H8     | 1.79                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:344:A:H3'    | 33:DA:345:C:C5'   | 2.45                     | 0.47              |
| 33:DA:376:G:C4     | 33:DA:389:A:C2    | 3.02                     | 0.47              |
| 33:DA:404:G:C8     | 33:DA:404:G:O5'   | 2.68                     | 0.47              |
| 33:DA:405:U:H4'    | 33:DA:498:A:N7    | 2.30                     | 0.47              |
| 33:DA:510:A:N3     | 33:DA:543:U:H1'   | 2.29                     | 0.47              |
| 33:DA:517:G:N2     | 33:DA:529:G:O3'   | 2.48                     | 0.47              |
| 33:DA:650:G:O2'    | 33:DA:651:C:H5'   | 2.13                     | 0.47              |
| 33:DA:750:C:O2'    | 47:DO:20:ASP:C    | 2.53                     | 0.47              |
| 33:DA:844:G:N7     | 33:DA:846:G:C4    | 2.82                     | 0.47              |
| 33:DA:926:G:C6     | 33:DA:1505:G:C6   | 3.02                     | 0.47              |
| 33:DA:931:C:N4     | 33:DA:1386:G:H1   | 2.11                     | 0.47              |
| 33:DA:978:A:C2     | 33:DA:1319:A:H1'  | 2.49                     | 0.47              |
| 33:DA:988:G:C4'    | 33:DA:1014:A:H61  | 2.27                     | 0.47              |
| 33:DA:1068:G:H1'   | 33:DA:1191:A:N1   | 2.30                     | 0.47              |
| 33:DA:1130:A:C8    | 33:DA:1130:A:H3'  | 2.49                     | 0.47              |
| 33:DA:1319:A:H2'   | 33:DA:1323:G:N7   | 2.30                     | 0.47              |
| 33:DA:1437:A:C2    | 33:DA:1438:G:C8   | 3.03                     | 0.47              |
| 33:DA:1449:C:C4    | 33:DA:1450:U:C5   | 3.03                     | 0.47              |
| 33:DA:1514:G:H1    | 33:DA:1521:C:N4   | 2.09                     | 0.47              |
| 36:DD:154:VAL:HG12 | 36:DD:158:LEU:CD1 | 2.45                     | 0.47              |
| 37:DE:10:LEU:HD12  | 37:DE:10:LEU:O    | 2.14                     | 0.47              |
| 38:DF:50:PRO:CD    | 50:DR:73:HIS:ND1  | 2.78                     | 0.47              |
| 38:DF:92:THR:CG2   | 38:DF:94:HIS:N    | 2.78                     | 0.47              |
| 40:DH:44:PHE:O     | 40:DH:70:VAL:HG21 | 2.14                     | 0.47              |
| 41:DI:29:ILE:O     | 41:DI:30:ASN:C    | 2.53                     | 0.47              |
| 44:DL:64:SER:CA    | 44:DL:94:TYR:O    | 2.59                     | 0.47              |
| 44:DL:121:PRO:HB2  | 44:DL:122:LYS:NZ  | 2.29                     | 0.47              |
| 50:DR:61:ALA:O     | 50:DR:64:LEU:N    | 2.48                     | 0.47              |
| 3:A2:31:LEU:H      | 3:A2:31:LEU:CD2   | 2.23                     | 0.47              |
| 4:A3:14:LYS:O      | 4:A3:21:PHE:HA    | 2.15                     | 0.47              |
| 4:A3:28:LEU:O      | 4:A3:29:ARG:C     | 2.53                     | 0.47              |
| 5:A4:30:GLU:HG3    | 5:A4:31:PRO:CD    | 2.44                     | 0.47              |
| 7:AA:10:G:H8       | 7:AA:10:G:O5'     | 1.98                     | 0.47              |
| 7:AA:14:U:H1'      | 7:AA:107:G:H1'    | 1.97                     | 0.47              |
| 7:AA:47:C:C6       | 7:AA:47:C:C3'     | 2.95                     | 0.47              |
| 7:AA:54:G:C5       | 7:AA:55:U:C4      | 3.03                     | 0.47              |
| 8:AB:52:A:H2'      | 8:AB:53:A:C8      | 2.50                     | 0.47              |
| 8:AB:80:G:N1       | 8:AB:81:G:C5      | 2.83                     | 0.47              |
| 8:AB:121:G:C4      | 8:AB:131:A:C6     | 3.03                     | 0.47              |
| 8:AB:283:G:N3      | 8:AB:283:G:H2'    | 2.29                     | 0.47              |
| 8:AB:297:G:C6      | 8:AB:342:A:C6     | 3.02                     | 0.47              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 8:AB:320:A:H5''  | 11:AE:130:LYS:HZ2 | 1.79                     | 0.47              |
| 8:AB:350:G:H5'   | 8:AB:350:G:C8     | 2.50                     | 0.47              |
| 8:AB:350:G:N2    | 8:AB:351:C:O2     | 2.47                     | 0.47              |
| 8:AB:368:A:C5    | 8:AB:369:U:O4     | 2.66                     | 0.47              |
| 8:AB:392:U:H2'   | 8:AB:393:C:H6     | 1.74                     | 0.47              |
| 8:AB:438:G:H2'   | 8:AB:439:A:C8     | 2.50                     | 0.47              |
| 8:AB:440:C:C5    | 8:AB:441:U:H5     | 2.33                     | 0.47              |
| 8:AB:539:G:C6    | 8:AB:540:C:N4     | 2.83                     | 0.47              |
| 8:AB:590:A:C5    | 8:AB:591:U:C4     | 3.02                     | 0.47              |
| 8:AB:599:A:C2    | 8:AB:659:G:N1     | 2.83                     | 0.47              |
| 8:AB:626:A:H3'   | 8:AB:627:A:H5'    | 1.96                     | 0.47              |
| 8:AB:655:A:O5'   | 8:AB:655:A:H2'    | 2.14                     | 0.47              |
| 8:AB:669:G:H3'   | 8:AB:670:A:C8     | 2.50                     | 0.47              |
| 8:AB:811:U:O2    | 8:AB:1251:C:N1    | 2.47                     | 0.47              |
| 8:AB:822:G:O6    | 8:AB:943:A:H2     | 1.96                     | 0.47              |
| 8:AB:898:C:C4    | 8:AB:899:A:N6     | 2.83                     | 0.47              |
| 8:AB:969:G:H2'   | 8:AB:970:U:C6     | 2.49                     | 0.47              |
| 8:AB:974:G:C2    | 8:AB:1186:G:C6    | 3.03                     | 0.47              |
| 8:AB:989:G:O2'   | 8:AB:990:A:C5'    | 2.63                     | 0.47              |
| 8:AB:991:C:H5'   | 8:AB:991:C:C6     | 2.44                     | 0.47              |
| 8:AB:1000:A:N6   | 8:AB:1001:A:C6    | 2.83                     | 0.47              |
| 8:AB:1028:A:O2'  | 8:AB:1029:A:H5'   | 2.15                     | 0.47              |
| 8:AB:1041:G:C2   | 8:AB:1042:G:N7    | 2.82                     | 0.47              |
| 8:AB:1041:G:C2   | 8:AB:1115:G:N2    | 2.80                     | 0.47              |
| 8:AB:1110:G:H4'  | 8:AB:1111:A:OP1   | 2.13                     | 0.47              |
| 8:AB:1206:G:N2   | 8:AB:1241:A:C2    | 2.82                     | 0.47              |
| 8:AB:1230:A:C5   | 8:AB:1231:U:C5    | 3.03                     | 0.47              |
| 8:AB:1285:A:C8   | 8:AB:1285:A:C3'   | 2.97                     | 0.47              |
| 8:AB:1286:A:C2   | 8:AB:1329:U:C6    | 3.03                     | 0.47              |
| 8:AB:1315:C:H2'  | 8:AB:1316:U:C6    | 2.50                     | 0.47              |
| 8:AB:1355:G:O2'  | 8:AB:1356:G:H5'   | 2.15                     | 0.47              |
| 8:AB:1362:C:C2'  | 8:AB:1363:C:H5'   | 2.44                     | 0.47              |
| 8:AB:1378:A:C5   | 8:AB:1380:G:C5    | 3.03                     | 0.47              |
| 8:AB:1571:A:C2   | 8:AB:1572:A:C4    | 3.03                     | 0.47              |
| 8:AB:1652:A:C2'  | 8:AB:1653:G:H5'   | 2.45                     | 0.47              |
| 8:AB:1701:A:C2'  | 8:AB:1702:G:H5'   | 2.43                     | 0.47              |
| 8:AB:1777:U:O2'  | 8:AB:1778:U:H5'   | 2.15                     | 0.47              |
| 8:AB:1783:A:H5'' | 8:AB:1784:A:OP2   | 2.15                     | 0.47              |
| 8:AB:1862:G:C2   | 8:AB:1881:C:C4    | 3.03                     | 0.47              |
| 8:AB:1909:C:H2'  | 8:AB:1910:G:O4'   | 2.14                     | 0.47              |
| 8:AB:1956:U:H2'  | 8:AB:1956:U:O2    | 2.14                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2021:C:H3'    | 8:AB:2022:U:H5'    | 1.97                     | 0.47              |
| 8:AB:2060:A:C2     | 8:AB:2502:G:C4     | 3.03                     | 0.47              |
| 8:AB:2190:G:C2'    | 8:AB:2191:A:H5'    | 2.45                     | 0.47              |
| 8:AB:2208:C:C2     | 8:AB:2217:G:N2     | 2.83                     | 0.47              |
| 8:AB:2225:A:H5''   | 8:AB:2226:C:H5'    | 1.96                     | 0.47              |
| 8:AB:2230:G:H4'    | 32:AZ:28:VAL:HA    | 1.97                     | 0.47              |
| 8:AB:2235:G:C8     | 8:AB:2235:G:O5'    | 2.68                     | 0.47              |
| 8:AB:2280:G:H2'    | 8:AB:2388:A:N1     | 2.30                     | 0.47              |
| 8:AB:2452:C:HO2'   | 8:AB:2453:A:P      | 2.38                     | 0.47              |
| 8:AB:2454:G:H2'    | 8:AB:2455:G:H5'    | 1.97                     | 0.47              |
| 8:AB:2482:A:C2'    | 8:AB:2483:C:H5'    | 2.45                     | 0.47              |
| 8:AB:2549:G:C2'    | 8:AB:2550:G:H5'    | 2.44                     | 0.47              |
| 8:AB:2692:G:H2'    | 8:AB:2693:G:H8     | 1.79                     | 0.47              |
| 9:AC:170:TYR:C     | 9:AC:171:VAL:HG22  | 2.35                     | 0.47              |
| 9:AC:235:GLU:HG2   | 9:AC:237:ARG:HG3   | 1.96                     | 0.47              |
| 10:AD:35:THR:HB    | 10:AD:48:ILE:HD12  | 1.95                     | 0.47              |
| 10:AD:124:ARG:O    | 10:AD:160:LYS:CD   | 2.59                     | 0.47              |
| 10:AD:140:HIS:C    | 10:AD:142:VAL:H    | 2.18                     | 0.47              |
| 10:AD:143:PRO:C    | 10:AD:145:SER:N    | 2.68                     | 0.47              |
| 10:AD:202:ILE:CG2  | 10:AD:202:ILE:O    | 2.63                     | 0.47              |
| 11:AE:44:ARG:H     | 11:AE:44:ARG:CD    | 2.28                     | 0.47              |
| 11:AE:103:GLY:O    | 11:AE:105:LEU:HD23 | 2.14                     | 0.47              |
| 11:AE:107:SER:O    | 11:AE:110:SER:N    | 2.40                     | 0.47              |
| 11:AE:191:ASP:C    | 11:AE:194:LYS:HZ3  | 2.17                     | 0.47              |
| 12:AF:3:LEU:HA     | 12:AF:6:TYR:CD2    | 2.49                     | 0.47              |
| 12:AF:4:HIS:O      | 12:AF:8:LYS:HG3    | 2.15                     | 0.47              |
| 12:AF:37:MET:CE    | 12:AF:148:VAL:HG12 | 2.45                     | 0.47              |
| 12:AF:50:ASP:CG    | 12:AF:51:ASN:H     | 2.17                     | 0.47              |
| 12:AF:126:ASN:ND2  | 12:AF:157:THR:H    | 2.12                     | 0.47              |
| 12:AF:172:PHE:CD1  | 12:AF:172:PHE:N    | 2.81                     | 0.47              |
| 13:AG:130:ILE:HG22 | 13:AG:131:VAL:H    | 1.79                     | 0.47              |
| 13:AG:162:ARG:HG3  | 13:AG:163:TYR:O    | 2.15                     | 0.47              |
| 14:AH:73:ASN:HD22  | 14:AH:73:ASN:N     | 2.07                     | 0.47              |
| 15:AI:17:ALA:O     | 15:AI:18:ASN:HB2   | 2.14                     | 0.47              |
| 15:AI:33:ASN:ND2   | 15:AI:64:ARG:HD2   | 2.23                     | 0.47              |
| 16:AJ:99:ARG:O     | 16:AJ:100:VAL:CB   | 2.55                     | 0.47              |
| 17:AK:61:VAL:HG11  | 17:AK:112:PHE:CE2  | 2.49                     | 0.47              |
| 17:AK:106:GLU:C    | 17:AK:108:ARG:N    | 2.67                     | 0.47              |
| 17:AK:109:SER:O    | 17:AK:113:MET:SD   | 2.73                     | 0.47              |
| 18:AL:14:LYS:O     | 18:AL:15:ALA:CB    | 2.63                     | 0.47              |
| 18:AL:108:ALA:O    | 18:AL:109:LYS:HB2  | 2.15                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AN:1:MET:SD    | 20:AN:2:ARG:CB     | 3.02                     | 0.47              |
| 20:AN:32:GLU:HA   | 20:AN:115:LEU:HD21 | 1.95                     | 0.47              |
| 20:AN:38:LEU:O    | 20:AN:41:ALA:HB3   | 2.14                     | 0.47              |
| 20:AN:100:CYS:SG  | 20:AN:112:TYR:CE2  | 2.97                     | 0.47              |
| 20:AN:103:ARG:O   | 20:AN:103:ARG:HG3  | 2.13                     | 0.47              |
| 20:AN:115:LEU:CD2 | 20:AN:115:LEU:N    | 2.77                     | 0.47              |
| 22:AP:5:LYS:HA    | 22:AP:5:LYS:HZ3    | 1.80                     | 0.47              |
| 22:AP:92:ARG:HG2  | 22:AP:110:LYS:HB2  | 1.97                     | 0.47              |
| 23:AQ:52:ARG:HH12 | 23:AQ:55:GLN:HE21  | 1.58                     | 0.47              |
| 23:AQ:54:ARG:HA   | 23:AQ:57:ARG:HB2   | 1.96                     | 0.47              |
| 24:AR:64:VAL:HB   | 24:AR:65:ALA:H     | 1.59                     | 0.47              |
| 24:AR:97:LYS:O    | 24:AR:98:ILE:HB    | 2.14                     | 0.47              |
| 25:AS:29:VAL:HG21 | 25:AS:69:LEU:HB3   | 1.93                     | 0.47              |
| 25:AS:71:VAL:HG22 | 25:AS:107:VAL:HG12 | 1.97                     | 0.47              |
| 28:AV:75:GLN:OE1  | 28:AV:75:GLN:HA    | 2.15                     | 0.47              |
| 29:AW:74:LYS:O    | 29:AW:75:ASN:CG    | 2.53                     | 0.47              |
| 33:BA:20:U:H2'    | 33:BA:21:G:O4'     | 2.14                     | 0.47              |
| 33:BA:128:G:N2    | 33:BA:129:A:C2     | 2.82                     | 0.47              |
| 33:BA:139:A:C2    | 33:BA:225:C:N3     | 2.83                     | 0.47              |
| 33:BA:157:U:O2    | 33:BA:165:G:N1     | 2.47                     | 0.47              |
| 33:BA:218:U:HO2'  | 33:BA:381:C:H5     | 1.63                     | 0.47              |
| 33:BA:299:G:C5    | 33:BA:300:A:C6     | 3.03                     | 0.47              |
| 33:BA:386:C:N4    | 33:BA:387:U:C2     | 2.83                     | 0.47              |
| 33:BA:499:A:O4'   | 33:BA:547:A:N6     | 2.47                     | 0.47              |
| 33:BA:522:C:O2'   | 33:BA:523:A:H5'    | 2.15                     | 0.47              |
| 33:BA:537:G:H8    | 33:BA:537:G:O5'    | 1.97                     | 0.47              |
| 33:BA:557:G:N2    | 33:BA:558:G:N2     | 2.63                     | 0.47              |
| 33:BA:560:A:OP2   | 33:BA:566:G:N2     | 2.42                     | 0.47              |
| 33:BA:615:G:C2    | 33:BA:626:G:C5     | 3.02                     | 0.47              |
| 33:BA:616:G:N2    | 33:BA:625:U:H1'    | 2.29                     | 0.47              |
| 33:BA:650:G:C2    | 33:BA:651:C:C6     | 3.02                     | 0.47              |
| 33:BA:690:G:N1    | 33:BA:691:G:C2     | 2.83                     | 0.47              |
| 33:BA:692:U:N3    | 33:BA:694:A:H5''   | 2.30                     | 0.47              |
| 33:BA:714:G:H21   | 33:BA:777:A:H1'    | 1.78                     | 0.47              |
| 33:BA:718:A:H5''  | 33:BA:719:C:OP2    | 2.14                     | 0.47              |
| 33:BA:734:G:O2'   | 50:BR:59:LYS:HD2   | 2.15                     | 0.47              |
| 33:BA:764:C:O2    | 33:BA:764:C:C2'    | 2.62                     | 0.47              |
| 33:BA:794:A:H4'   | 33:BA:1521:C:O2'   | 2.15                     | 0.47              |
| 33:BA:794:A:H2'   | 33:BA:795:C:H6     | 1.79                     | 0.47              |
| 33:BA:812:G:P     | 33:BA:902:G:H21    | 2.38                     | 0.47              |
| 33:BA:859:G:H2'   | 33:BA:860:A:C8     | 2.49                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:892:A:C6     | 33:BA:907:A:C4    | 3.03                     | 0.47              |
| 33:BA:918:A:C2     | 33:BA:919:A:C4    | 3.03                     | 0.47              |
| 33:BA:951:G:O2'    | 33:BA:972:C:H5    | 1.97                     | 0.47              |
| 33:BA:984:C:O2'    | 33:BA:985:C:H5'   | 2.15                     | 0.47              |
| 33:BA:1014:A:O4'   | 51:BS:33:TRP:HB2  | 2.15                     | 0.47              |
| 33:BA:1177:G:O5'   | 33:BA:1177:G:H8   | 1.97                     | 0.47              |
| 33:BA:1190:G:OP1   | 35:BC:4:VAL:HG12  | 2.15                     | 0.47              |
| 33:BA:1207:G:N1    | 33:BA:1208:C:C2   | 2.82                     | 0.47              |
| 33:BA:1358:U:O2'   | 33:BA:1359:C:H5'  | 2.14                     | 0.47              |
| 33:BA:1382:C:H2'   | 33:BA:1382:C:O2   | 2.14                     | 0.47              |
| 33:BA:1425:U:C2    | 33:BA:1476:A:C2   | 3.02                     | 0.47              |
| 33:BA:1439:G:N2    | 33:BA:1440:U:H1'  | 2.29                     | 0.47              |
| 33:BA:1526:G:C5    | 33:BA:1527:U:C5   | 3.02                     | 0.47              |
| 35:BC:118:SER:HA   | 35:BC:121:SER:HB3 | 1.96                     | 0.47              |
| 35:BC:134:LYS:O    | 35:BC:138:GLN:N   | 2.35                     | 0.47              |
| 36:BD:26:ALA:O     | 36:BD:27:ILE:C    | 2.53                     | 0.47              |
| 36:BD:109:THR:HG23 | 36:BD:111:ALA:H   | 1.79                     | 0.47              |
| 37:BE:32:PHE:CE2   | 37:BE:53:ARG:O    | 2.67                     | 0.47              |
| 38:BF:25:TYR:O     | 38:BF:29:ILE:HG13 | 2.15                     | 0.47              |
| 39:BG:10:LYS:HE3   | 39:BG:20:GLU:OE2  | 2.15                     | 0.47              |
| 41:BI:10:ARG:O     | 41:BI:11:ARG:HB3  | 2.14                     | 0.47              |
| 41:BI:42:THR:C     | 41:BI:44:ARG:HH12 | 2.18                     | 0.47              |
| 42:BJ:51:VAL:CG1   | 46:BN:80:ARG:HA   | 2.44                     | 0.47              |
| 45:BM:67:ASP:O     | 45:BM:71:GLU:N    | 2.47                     | 0.47              |
| 48:BP:5:ARG:HB3    | 48:BP:68:SER:CB   | 2.45                     | 0.47              |
| 49:BQ:80:LYS:O     | 49:BQ:81:ALA:O    | 2.32                     | 0.47              |
| 1:C0:22:THR:O      | 1:C0:23:ALA:O     | 2.32                     | 0.47              |
| 2:C1:19:PHE:CD2    | 2:C1:40:PRO:HA    | 2.44                     | 0.47              |
| 2:C1:46:VAL:HG13   | 2:C1:47:ILE:CG1   | 2.40                     | 0.47              |
| 3:C2:9:VAL:C       | 3:C2:11:LYS:N     | 2.68                     | 0.47              |
| 3:C2:43:THR:OG1    | 3:C2:44:VAL:HG22  | 2.15                     | 0.47              |
| 4:C3:48:MET:O      | 4:C3:49:VAL:HB    | 2.14                     | 0.47              |
| 7:CA:18:G:H21      | 7:CA:19:C:H1'     | 1.78                     | 0.47              |
| 7:CA:21:G:C6       | 7:CA:22:U:C4      | 3.03                     | 0.47              |
| 7:CA:53:A:H2'      | 7:CA:54:G:O4'     | 2.15                     | 0.47              |
| 7:CA:94:A:C5       | 7:CA:95:U:C2      | 3.02                     | 0.47              |
| 8:CB:4:U:C2        | 8:CB:2900:A:H2    | 2.32                     | 0.47              |
| 8:CB:77:G:C4       | 8:CB:110:G:N2     | 2.83                     | 0.47              |
| 8:CB:123:G:H2'     | 8:CB:124:G:C5'    | 2.43                     | 0.47              |
| 8:CB:321:U:H1'     | 11:CE:159:LEU:CG  | 2.45                     | 0.47              |
| 8:CB:452:G:N2      | 8:CB:458:G:N9     | 2.63                     | 0.47              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 8:CB:506:G:H4'   | 8:CB:507:A:H5'    | 1.97                     | 0.47              |
| 8:CB:570:G:C5    | 8:CB:2030:A:N6    | 2.82                     | 0.47              |
| 8:CB:570:G:H2'   | 8:CB:2030:A:N7    | 2.30                     | 0.47              |
| 8:CB:621:A:H2'   | 8:CB:622:G:O4'    | 2.14                     | 0.47              |
| 8:CB:706:A:C2    | 8:CB:707:G:H1'    | 2.49                     | 0.47              |
| 8:CB:712:G:C2    | 8:CB:720:U:O2     | 2.67                     | 0.47              |
| 8:CB:760:G:H2'   | 8:CB:761:A:C8     | 2.50                     | 0.47              |
| 8:CB:845:A:N1    | 8:CB:847:U:H1'    | 2.30                     | 0.47              |
| 8:CB:901:C:O2'   | 8:CB:902:C:H5'    | 2.15                     | 0.47              |
| 8:CB:903:C:C4    | 8:CB:904:G:C8     | 3.02                     | 0.47              |
| 8:CB:966:G:C6    | 8:CB:967:U:C2     | 3.03                     | 0.47              |
| 8:CB:974:G:H8    | 8:CB:990:A:H62    | 1.61                     | 0.47              |
| 8:CB:989:G:HO2'  | 8:CB:990:A:C5'    | 2.27                     | 0.47              |
| 8:CB:1026:G:OP2  | 8:CB:1135:C:OP2   | 2.33                     | 0.47              |
| 8:CB:1040:A:C2'  | 8:CB:1041:G:H5'   | 2.45                     | 0.47              |
| 8:CB:1081:U:H2'  | 8:CB:1082:U:H6    | 1.80                     | 0.47              |
| 8:CB:1131:G:C5   | 16:CJ:77:HIS:NE2  | 2.83                     | 0.47              |
| 8:CB:1139:G:OP1  | 16:CJ:104:ALA:HB2 | 2.15                     | 0.47              |
| 8:CB:1351:C:O2   | 8:CB:1352:U:C2    | 2.67                     | 0.47              |
| 8:CB:1383:A:H3'  | 8:CB:1383:A:P     | 2.54                     | 0.47              |
| 8:CB:1427:A:C1'  | 8:CB:1428:C:C5    | 2.97                     | 0.47              |
| 8:CB:1551:A:C5   | 8:CB:1552:A:C2    | 3.03                     | 0.47              |
| 8:CB:1581:G:H2'  | 8:CB:1582:C:O4'   | 2.14                     | 0.47              |
| 8:CB:1801:A:H8   | 8:CB:2203:U:H2'   | 1.79                     | 0.47              |
| 8:CB:1819:A:H1'  | 8:CB:1821:A:C6    | 2.50                     | 0.47              |
| 8:CB:1821:A:C6   | 8:CB:1822:C:N4    | 2.82                     | 0.47              |
| 8:CB:1864:U:H2'  | 8:CB:1865:U:H5'   | 1.96                     | 0.47              |
| 8:CB:1926:U:H5'  | 8:CB:1927:A:OP2   | 2.15                     | 0.47              |
| 8:CB:1931:U:H2'  | 8:CB:1932:A:H8    | 1.80                     | 0.47              |
| 8:CB:1959:G:N2   | 8:CB:1960:A:N3    | 2.62                     | 0.47              |
| 8:CB:2075:U:N3   | 8:CB:2238:G:C6    | 2.83                     | 0.47              |
| 8:CB:2195:U:C2   | 8:CB:2196:C:C6    | 3.03                     | 0.47              |
| 8:CB:2208:C:C2   | 8:CB:2217:G:N2    | 2.83                     | 0.47              |
| 8:CB:2281:A:O4'  | 8:CB:2388:A:C2    | 2.68                     | 0.47              |
| 8:CB:2286:G:H5'' | 8:CB:2286:G:N3    | 2.30                     | 0.47              |
| 8:CB:2346:A:C2   | 8:CB:2383:G:C6    | 3.03                     | 0.47              |
| 8:CB:2376:A:H2'  | 8:CB:2377:A:O4'   | 2.15                     | 0.47              |
| 8:CB:2391:G:N2   | 8:CB:2424:C:N1    | 2.63                     | 0.47              |
| 8:CB:2421:G:C5'  | 8:CB:2421:G:C8    | 2.98                     | 0.47              |
| 8:CB:2459:A:H2'  | 8:CB:2459:A:N3    | 2.29                     | 0.47              |
| 8:CB:2478:A:H3'  | 8:CB:2479:U:H6    | 1.78                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2486:C:C2'   | 8:CB:2487:G:O5'    | 2.63                     | 0.47              |
| 8:CB:2562:U:C2'   | 8:CB:2563:U:H5'    | 2.45                     | 0.47              |
| 8:CB:2574:G:N2    | 8:CB:2575:C:C2     | 2.82                     | 0.47              |
| 8:CB:2604:U:N3    | 8:CB:2605:U:C5     | 2.83                     | 0.47              |
| 8:CB:2648:G:O5'   | 8:CB:2648:G:C8     | 2.67                     | 0.47              |
| 8:CB:2689:U:OP2   | 8:CB:2719:G:N2     | 2.44                     | 0.47              |
| 8:CB:2751:G:HO2'  | 8:CB:2752:C:H6     | 1.61                     | 0.47              |
| 8:CB:2787:C:C1'   | 10:CD:62:LYS:HB3   | 2.44                     | 0.47              |
| 8:CB:2788:C:C2    | 8:CB:2789:C:C5     | 3.02                     | 0.47              |
| 9:CC:20:ASN:HD21  | 9:CC:203:VAL:CG1   | 2.27                     | 0.47              |
| 9:CC:38:LYS:O     | 9:CC:39:SER:CB     | 2.61                     | 0.47              |
| 9:CC:53:ILE:CD1   | 9:CC:218:THR:OG1   | 2.63                     | 0.47              |
| 9:CC:185:ALA:C    | 9:CC:187:CYS:H     | 2.16                     | 0.47              |
| 10:CD:7:LYS:H     | 10:CD:201:LEU:HD13 | 1.78                     | 0.47              |
| 10:CD:34:VAL:CG2  | 10:CD:35:THR:N     | 2.71                     | 0.47              |
| 10:CD:73:VAL:HB   | 10:CD:91:THR:HG22  | 1.95                     | 0.47              |
| 10:CD:125:TRP:HB2 | 10:CD:160:LYS:HG2  | 1.96                     | 0.47              |
| 10:CD:130:GLN:HG2 | 10:CD:138:LEU:O    | 2.15                     | 0.47              |
| 11:CE:2:GLU:CG    | 11:CE:16:GLU:HA    | 2.45                     | 0.47              |
| 12:CF:69:ALA:C    | 12:CF:70:ARG:HG3   | 2.35                     | 0.47              |
| 12:CF:76:PHE:O    | 12:CF:77:LYS:CB    | 2.62                     | 0.47              |
| 12:CF:114:ARG:HG3 | 12:CF:114:ARG:O    | 2.15                     | 0.47              |
| 12:CF:147:ARG:O   | 12:CF:148:VAL:C    | 2.53                     | 0.47              |
| 13:CG:150:TYR:O   | 13:CG:151:ARG:HB2  | 2.13                     | 0.47              |
| 14:CH:35:LYS:NZ   | 14:CH:37:VAL:HG22  | 2.29                     | 0.47              |
| 15:CI:20:SER:HB2  | 15:CI:21:PRO:HD3   | 1.96                     | 0.47              |
| 15:CI:122:GLU:HA  | 15:CI:125:THR:HB   | 1.97                     | 0.47              |
| 16:CJ:59:ALA:C    | 16:CJ:61:LYS:N     | 2.67                     | 0.47              |
| 16:CJ:114:LEU:C   | 16:CJ:116:ARG:N    | 2.68                     | 0.47              |
| 17:CK:121:GLU:O   | 17:CK:122:VAL:C    | 2.53                     | 0.47              |
| 18:CL:21:ARG:C    | 18:CL:23:ILE:N     | 2.67                     | 0.47              |
| 19:CM:43:ALA:HB3  | 19:CM:91:TYR:CD2   | 2.50                     | 0.47              |
| 21:CO:30:ARG:C    | 21:CO:31:THR:O     | 2.53                     | 0.47              |
| 22:CP:26:GLU:CA   | 22:CP:47:ILE:HB    | 2.42                     | 0.47              |
| 22:CP:92:ARG:HG2  | 22:CP:110:LYS:HB2  | 1.97                     | 0.47              |
| 23:CQ:44:TYR:O    | 23:CQ:45:ALA:C     | 2.52                     | 0.47              |
| 23:CQ:67:ALA:O    | 23:CQ:70:GLN:N     | 2.48                     | 0.47              |
| 23:CQ:89:ILE:HG22 | 23:CQ:90:ASP:N     | 2.30                     | 0.47              |
| 24:CR:35:PHE:CZ   | 24:CR:66:HIS:HB3   | 2.49                     | 0.47              |
| 24:CR:96:VAL:O    | 24:CR:96:VAL:HG13  | 2.13                     | 0.47              |
| 25:CS:93:ALA:C    | 25:CS:94:ASP:CG    | 2.72                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 26:CT:15:HIS:O    | 26:CT:16:VAL:O    | 2.33                     | 0.47              |
| 29:CW:3:LYS:NZ    | 29:CW:10:ARG:HE   | 2.13                     | 0.47              |
| 30:CX:25:GLN:HG2  | 30:CX:26:PHE:HD1  | 1.80                     | 0.47              |
| 31:CY:43:ILE:HD13 | 31:CY:43:ILE:O    | 2.15                     | 0.47              |
| 33:DA:23:C:C2'    | 33:DA:24:U:H5'    | 2.44                     | 0.47              |
| 33:DA:37:U:H4'    | 33:DA:500:G:H4'   | 1.97                     | 0.47              |
| 33:DA:45:G:N2     | 33:DA:398:U:N3    | 2.63                     | 0.47              |
| 33:DA:46:G:H8     | 33:DA:46:G:O5'    | 1.97                     | 0.47              |
| 33:DA:113:G:O2'   | 33:DA:114:U:H5'   | 2.15                     | 0.47              |
| 33:DA:128:G:N2    | 33:DA:129:A:C2    | 2.82                     | 0.47              |
| 33:DA:155:A:H2'   | 33:DA:156:C:C6    | 2.49                     | 0.47              |
| 33:DA:232:G:C2'   | 33:DA:233:C:H5'   | 2.45                     | 0.47              |
| 33:DA:356:A:C2    | 33:DA:357:G:H1'   | 2.50                     | 0.47              |
| 33:DA:377:G:N2    | 33:DA:378:G:C5    | 2.83                     | 0.47              |
| 33:DA:411:A:C3'   | 33:DA:412:A:H4'   | 2.44                     | 0.47              |
| 33:DA:479:U:C6    | 33:DA:479:U:C3'   | 2.97                     | 0.47              |
| 33:DA:661:G:C2'   | 33:DA:662:U:H5'   | 2.44                     | 0.47              |
| 33:DA:680:C:H2'   | 33:DA:681:A:C8    | 2.49                     | 0.47              |
| 33:DA:729:A:C2    | 33:DA:730:G:N9    | 2.82                     | 0.47              |
| 33:DA:778:G:H8    | 33:DA:778:G:O5'   | 1.97                     | 0.47              |
| 33:DA:814:A:N7    | 33:DA:816:A:C4    | 2.83                     | 0.47              |
| 33:DA:844:G:N2    | 33:DA:845:A:N6    | 2.62                     | 0.47              |
| 33:DA:886:G:H8    | 33:DA:886:G:C5'   | 2.25                     | 0.47              |
| 33:DA:944:G:C3'   | 33:DA:945:G:H5'   | 2.44                     | 0.47              |
| 33:DA:945:G:N1    | 33:DA:1337:G:N2   | 2.63                     | 0.47              |
| 33:DA:1078:U:H3'  | 33:DA:1078:U:H6   | 1.78                     | 0.47              |
| 33:DA:1079:G:N3   | 33:DA:1080:A:H2   | 2.13                     | 0.47              |
| 33:DA:1080:A:C4'  | 37:DE:20:VAL:HG21 | 2.43                     | 0.47              |
| 33:DA:1099:G:C6   | 33:DA:1100:C:C2   | 3.03                     | 0.47              |
| 33:DA:1102:A:N1   | 33:DA:1103:C:C4   | 2.83                     | 0.47              |
| 33:DA:1144:G:N2   | 33:DA:1146:A:H62  | 2.10                     | 0.47              |
| 33:DA:1149:C:H1'  | 33:DA:1280:A:H61  | 1.80                     | 0.47              |
| 33:DA:1169:A:N3   | 33:DA:1170:A:C8   | 2.83                     | 0.47              |
| 33:DA:1206:G:H8   | 33:DA:1206:G:C5'  | 2.21                     | 0.47              |
| 33:DA:1220:G:H2'  | 33:DA:1221:G:H8   | 1.79                     | 0.47              |
| 33:DA:1231:G:C6   | 33:DA:1232:U:N3   | 2.83                     | 0.47              |
| 33:DA:1239:A:C4   | 33:DA:1298:U:C5   | 3.03                     | 0.47              |
| 33:DA:1256:A:C6   | 33:DA:1278:G:C5   | 3.03                     | 0.47              |
| 33:DA:1266:G:C6   | 33:DA:1268:G:OP2  | 2.67                     | 0.47              |
| 33:DA:1376:U:C2   | 33:DA:1377:A:N7   | 2.83                     | 0.47              |
| 33:DA:1376:U:O2   | 33:DA:1377:A:C8   | 2.68                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1376:U:N3   | 33:DA:1377:A:N7   | 2.62                     | 0.47              |
| 35:DC:34:SER:O    | 35:DC:38:VAL:HG13 | 2.15                     | 0.47              |
| 35:DC:41:TYR:O    | 35:DC:45:GLU:HG3  | 2.15                     | 0.47              |
| 36:DD:57:LYS:HB2  | 36:DD:199:ILE:HB  | 1.96                     | 0.47              |
| 37:DE:98:ALA:CB   | 37:DE:102:THR:OG1 | 2.63                     | 0.47              |
| 37:DE:148:SER:CB  | 37:DE:149:PRO:CD  | 2.93                     | 0.47              |
| 38:DF:8:PHE:CE2   | 38:DF:60:VAL:HB   | 2.49                     | 0.47              |
| 38:DF:72:ASP:O    | 38:DF:75:GLU:HB3  | 2.15                     | 0.47              |
| 38:DF:78:PHE:HD2  | 38:DF:84:VAL:HG21 | 1.79                     | 0.47              |
| 39:DG:39:GLU:C    | 39:DG:41:ILE:N    | 2.67                     | 0.47              |
| 39:DG:61:PHE:N    | 39:DG:61:PHE:CD1  | 2.82                     | 0.47              |
| 41:DI:19:PHE:O    | 41:DI:62:LEU:HA   | 2.14                     | 0.47              |
| 41:DI:87:MET:SD   | 41:DI:88:GLU:N    | 2.88                     | 0.47              |
| 43:DK:34:THR:C    | 43:DK:41:LEU:HD12 | 2.34                     | 0.47              |
| 44:DL:110:LYS:O   | 44:DL:113:ARG:HG3 | 2.13                     | 0.47              |
| 46:DN:12:ARG:HD2  | 46:DN:58:ARG:HB3  | 1.96                     | 0.47              |
| 47:DO:72:LYS:O    | 47:DO:73:ASP:HB3  | 2.14                     | 0.47              |
| 47:DO:88:ARG:HH11 | 47:DO:88:ARG:HA   | 1.80                     | 0.47              |
| 48:DP:8:ARG:CZ    | 48:DP:15:PRO:HB3  | 2.45                     | 0.47              |
| 48:DP:39:PHE:HD2  | 48:DP:39:PHE:C    | 2.15                     | 0.47              |
| 48:DP:57:ILE:HG22 | 48:DP:58:ALA:N    | 2.30                     | 0.47              |
| 2:A1:6:GLU:O      | 2:A1:7:LYS:C      | 2.54                     | 0.47              |
| 7:AA:37:C:N3      | 7:AA:49:C:H1'     | 2.30                     | 0.47              |
| 7:AA:83:G:C6      | 7:AA:84:G:N7      | 2.83                     | 0.47              |
| 8:AB:222:A:C8     | 8:AB:224:U:C5     | 3.03                     | 0.47              |
| 8:AB:280:U:H2'    | 8:AB:281:C:C6     | 2.50                     | 0.47              |
| 8:AB:284:U:O2     | 8:AB:284:U:H2'    | 2.14                     | 0.47              |
| 8:AB:299:A:C5     | 8:AB:300:A:N6     | 2.82                     | 0.47              |
| 8:AB:350:G:C6     | 8:AB:351:C:N3     | 2.82                     | 0.47              |
| 8:AB:527:C:H5''   | 8:AB:2779:U:H3    | 1.79                     | 0.47              |
| 8:AB:537:G:O2'    | 8:AB:556:A:N6     | 2.43                     | 0.47              |
| 8:AB:592:A:C2     | 8:AB:593:U:C2     | 3.03                     | 0.47              |
| 8:AB:783:A:C4'    | 8:AB:1779:U:O2    | 2.63                     | 0.47              |
| 8:AB:799:G:C5     | 8:AB:800:A:C6     | 3.02                     | 0.47              |
| 8:AB:1084:A:N7    | 8:AB:1085:A:C8    | 2.83                     | 0.47              |
| 8:AB:1298:C:H1'   | 8:AB:1302:A:N3    | 2.29                     | 0.47              |
| 8:AB:1483:G:H8    | 8:AB:1483:G:H5''  | 1.80                     | 0.47              |
| 8:AB:1495:A:H2    | 8:AB:1578:U:O2    | 1.97                     | 0.47              |
| 8:AB:1658:C:C5'   | 8:AB:1659:G:OP2   | 2.63                     | 0.47              |
| 8:AB:2048:G:O4'   | 8:AB:2823:A:N1    | 2.48                     | 0.47              |
| 8:AB:2061:G:O4'   | 8:AB:2503:A:C5    | 2.68                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2524:G:H2'   | 8:AB:2525:G:C8     | 2.47                     | 0.47              |
| 8:AB:2645:G:C5'   | 8:AB:2645:G:C8     | 2.98                     | 0.47              |
| 8:AB:2675:A:C6    | 8:AB:2676:C:C2     | 3.03                     | 0.47              |
| 8:AB:2707:U:H2'   | 8:AB:2707:U:O2     | 2.15                     | 0.47              |
| 8:AB:2873:A:O3'   | 20:AN:5:LYS:HB3    | 2.15                     | 0.47              |
| 9:AC:238:ASN:O    | 9:AC:239:PHE:C     | 2.52                     | 0.47              |
| 10:AD:24:VAL:HB   | 10:AD:193:VAL:CG1  | 2.45                     | 0.47              |
| 10:AD:141:ARG:O   | 10:AD:142:VAL:C    | 2.52                     | 0.47              |
| 11:AE:137:LYS:O   | 11:AE:140:ASP:HB3  | 2.15                     | 0.47              |
| 12:AF:33:ILE:O    | 12:AF:34:THR:CB    | 2.62                     | 0.47              |
| 12:AF:114:ARG:HG3 | 12:AF:114:ARG:O    | 2.15                     | 0.47              |
| 12:AF:121:PHE:HB3 | 12:AF:162:ASP:OD1  | 2.15                     | 0.47              |
| 18:AL:126:ARG:HD2 | 18:AL:126:ARG:C    | 2.29                     | 0.47              |
| 20:AN:10:LEU:O    | 20:AN:11:ASN:O     | 2.33                     | 0.47              |
| 21:AO:37:ALA:HB3  | 21:AO:51:ALA:O     | 2.14                     | 0.47              |
| 21:AO:76:LYS:C    | 21:AO:76:LYS:HD2   | 2.35                     | 0.47              |
| 23:AQ:46:TYR:CE2  | 24:AR:79:ARG:NE    | 2.81                     | 0.47              |
| 23:AQ:64:ILE:CD1  | 23:AQ:92:LYS:HB3   | 2.45                     | 0.47              |
| 23:AQ:65:ASN:HD21 | 23:AQ:69:ARG:NH2   | 2.09                     | 0.47              |
| 23:AQ:97:ILE:HA   | 23:AQ:100:PHE:CD2  | 2.50                     | 0.47              |
| 25:AS:36:LEU:HA   | 25:AS:39:THR:HG22  | 1.97                     | 0.47              |
| 27:AU:48:VAL:HB   | 27:AU:53:GLN:HG2   | 1.96                     | 0.47              |
| 33:BA:8:A:H5'     | 37:BE:124:ALA:O    | 2.14                     | 0.47              |
| 33:BA:56:U:H2'    | 33:BA:57:G:H8      | 1.80                     | 0.47              |
| 33:BA:65:A:C8     | 33:BA:200:G:O2'    | 2.66                     | 0.47              |
| 33:BA:173:U:H6    | 33:BA:198:G:H1'    | 1.79                     | 0.47              |
| 33:BA:273:U:C4    | 33:BA:274:A:N7     | 2.83                     | 0.47              |
| 33:BA:343:U:O2'   | 33:BA:344:A:H8     | 1.98                     | 0.47              |
| 33:BA:555:U:N3    | 33:BA:556:C:C5     | 2.83                     | 0.47              |
| 33:BA:587:G:N3    | 33:BA:755:G:N2     | 2.62                     | 0.47              |
| 33:BA:599:C:O5'   | 33:BA:599:C:H6     | 1.97                     | 0.47              |
| 33:BA:675:A:N1    | 33:BA:716:A:H2     | 2.08                     | 0.47              |
| 33:BA:763:G:H2'   | 33:BA:764:C:C6     | 2.49                     | 0.47              |
| 33:BA:763:G:C4    | 33:BA:764:C:C5     | 3.03                     | 0.47              |
| 33:BA:777:A:H2'   | 33:BA:778:G:H5'    | 1.97                     | 0.47              |
| 33:BA:895:G:C6    | 33:BA:896:C:C4     | 3.03                     | 0.47              |
| 33:BA:1108:G:C4   | 33:BA:1109:C:C5    | 3.03                     | 0.47              |
| 33:BA:1205:U:O4'  | 35:BC:194:VAL:HG22 | 2.13                     | 0.47              |
| 33:BA:1220:G:C5   | 33:BA:1221:G:N7    | 2.82                     | 0.47              |
| 33:BA:1381:U:N3   | 33:BA:1382:C:C6    | 2.83                     | 0.47              |
| 33:BA:1398:A:C8   | 33:BA:1398:A:C3'   | 2.98                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:1459:G:C5    | 33:BA:1460:C:C5   | 3.03                     | 0.47              |
| 33:BA:1517:G:H3'   | 33:BA:1518:A:C8   | 2.50                     | 0.47              |
| 34:BB:89:PHE:CE2   | 34:BB:153:MET:HB2 | 2.49                     | 0.47              |
| 35:BC:159:ALA:C    | 35:BC:161:ILE:N   | 2.66                     | 0.47              |
| 35:BC:167:TYR:OH   | 37:BE:54:GLU:HG2  | 2.15                     | 0.47              |
| 36:BD:97:LEU:HD22  | 36:BD:134:TYR:CD2 | 2.50                     | 0.47              |
| 36:BD:187:ARG:HH22 | 36:BD:192:ALA:HB1 | 1.80                     | 0.47              |
| 37:BE:61:LYS:C     | 37:BE:63:MET:N    | 2.66                     | 0.47              |
| 37:BE:81:GLN:NE2   | 37:BE:148:SER:HA  | 2.30                     | 0.47              |
| 37:BE:155:LYS:HE2  | 37:BE:155:LYS:HB3 | 1.65                     | 0.47              |
| 38:BF:3:HIS:CE1    | 38:BF:65:GLU:OE2  | 2.67                     | 0.47              |
| 38:BF:8:PHE:CZ     | 38:BF:60:VAL:HG21 | 2.49                     | 0.47              |
| 39:BG:59:GLU:C     | 39:BG:61:PHE:N    | 2.66                     | 0.47              |
| 39:BG:98:LEU:HD22  | 39:BG:102:TRP:HZ2 | 1.80                     | 0.47              |
| 45:BM:15:VAL:CG2   | 45:BM:33:LEU:HD12 | 2.33                     | 0.47              |
| 45:BM:75:SER:O     | 45:BM:79:LEU:HD13 | 2.15                     | 0.47              |
| 45:BM:82:LEU:HD23  | 45:BM:82:LEU:HA   | 1.63                     | 0.47              |
| 49:BQ:57:VAL:HB    | 49:BQ:79:GLU:HB3  | 1.96                     | 0.47              |
| 51:BS:48:ILE:CG2   | 51:BS:49:ALA:H    | 2.27                     | 0.47              |
| 3:C2:9:VAL:HG22    | 8:CB:1309:G:OP1   | 2.14                     | 0.47              |
| 4:C3:7:ARG:NH2     | 4:C3:11:LYS:CE    | 2.78                     | 0.47              |
| 7:CA:52:A:C5       | 7:CA:53:A:C4      | 3.02                     | 0.47              |
| 7:CA:66:A:C4       | 7:CA:108:A:C6     | 3.03                     | 0.47              |
| 8:CB:84:A:P        | 27:CU:2:ALA:HB2   | 2.54                     | 0.47              |
| 8:CB:91:A:H1'      | 8:CB:92:U:C5      | 2.49                     | 0.47              |
| 8:CB:199:A:H1'     | 32:CZ:20:ASN:CB   | 2.45                     | 0.47              |
| 8:CB:265:A:H2'     | 8:CB:266:G:C1'    | 2.44                     | 0.47              |
| 8:CB:305:C:C6      | 8:CB:306:U:H5     | 2.33                     | 0.47              |
| 8:CB:307:G:N2      | 8:CB:310:A:O5'    | 2.48                     | 0.47              |
| 8:CB:309:A:N1      | 8:CB:330:A:C4     | 2.83                     | 0.47              |
| 8:CB:373:U:C2      | 8:CB:374:A:N7     | 2.83                     | 0.47              |
| 8:CB:424:G:N2      | 8:CB:425:G:C4     | 2.82                     | 0.47              |
| 8:CB:634:C:C2      | 8:CB:635:C:C5     | 3.02                     | 0.47              |
| 8:CB:687:C:N4      | 8:CB:688:U:C2     | 2.83                     | 0.47              |
| 8:CB:749:A:C6      | 8:CB:1618:A:H2    | 2.31                     | 0.47              |
| 8:CB:814:C:N3      | 8:CB:815:C:C5     | 2.83                     | 0.47              |
| 8:CB:1003:G:N2     | 8:CB:1153:C:N3    | 2.62                     | 0.47              |
| 8:CB:1053:C:C2'    | 8:CB:1054:A:H5'   | 2.45                     | 0.47              |
| 8:CB:1080:A:C2     | 8:CB:1081:U:C5    | 3.02                     | 0.47              |
| 8:CB:1150:C:C2'    | 8:CB:1151:A:H5'   | 2.45                     | 0.47              |
| 8:CB:1225:G:OP1    | 24:CR:90:ARG:CB   | 2.63                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1267:U:O2    | 8:CB:1267:U:H2'    | 2.14                     | 0.47              |
| 8:CB:1338:G:H2'   | 8:CB:1339:G:C5'    | 2.45                     | 0.47              |
| 8:CB:1438:U:H2'   | 8:CB:1439:A:H8     | 1.80                     | 0.47              |
| 8:CB:1483:G:H5''  | 8:CB:1483:G:H8     | 1.79                     | 0.47              |
| 8:CB:1658:C:C5'   | 8:CB:1659:G:OP2    | 2.63                     | 0.47              |
| 8:CB:1707:G:C5    | 8:CB:1756:G:C6     | 3.03                     | 0.47              |
| 8:CB:1835:G:H2'   | 8:CB:1836:C:C6     | 2.50                     | 0.47              |
| 8:CB:2027:G:C6    | 8:CB:2028:U:C5     | 3.03                     | 0.47              |
| 8:CB:2044:C:N4    | 8:CB:2045:C:N4     | 2.62                     | 0.47              |
| 8:CB:2199:A:C6    | 8:CB:2225:A:C4     | 3.03                     | 0.47              |
| 8:CB:2259:U:H2'   | 8:CB:2259:U:O2     | 2.15                     | 0.47              |
| 8:CB:2890:G:H8    | 8:CB:2890:G:O5'    | 1.97                     | 0.47              |
| 9:CC:87:SER:O     | 9:CC:88:ALA:HB2    | 2.14                     | 0.47              |
| 9:CC:164:VAL:O    | 9:CC:165:ALA:HB3   | 2.15                     | 0.47              |
| 9:CC:253:GLY:CA   | 9:CC:254:LYS:HZ1   | 2.24                     | 0.47              |
| 10:CD:14:ILE:HG21 | 22:CP:79:VAL:N     | 2.30                     | 0.47              |
| 10:CD:24:VAL:HB   | 10:CD:193:VAL:CG1  | 2.44                     | 0.47              |
| 11:CE:84:THR:CG2  | 11:CE:85:PHE:H     | 2.27                     | 0.47              |
| 11:CE:152:GLU:HA  | 11:CE:188:MET:SD   | 2.55                     | 0.47              |
| 12:CF:5:ASP:HA    | 12:CF:8:LYS:HB2    | 1.97                     | 0.47              |
| 14:CH:27:ARG:HA   | 14:CH:31:VAL:HG23  | 1.97                     | 0.47              |
| 14:CH:65:ALA:HA   | 14:CH:68:ARG:HD2   | 1.96                     | 0.47              |
| 16:CJ:123:LYS:HD2 | 16:CJ:123:LYS:N    | 2.30                     | 0.47              |
| 17:CK:10:VAL:HG23 | 17:CK:10:VAL:O     | 2.15                     | 0.47              |
| 17:CK:61:VAL:HG13 | 17:CK:87:LEU:HG    | 1.97                     | 0.47              |
| 18:CL:21:ARG:O    | 18:CL:23:ILE:O     | 2.33                     | 0.47              |
| 18:CL:90:VAL:O    | 18:CL:90:VAL:HG22  | 2.15                     | 0.47              |
| 19:CM:25:ASP:HB3  | 19:CM:98:PRO:HA    | 1.97                     | 0.47              |
| 19:CM:117:PHE:CG  | 19:CM:124:LEU:HD21 | 2.48                     | 0.47              |
| 21:CO:92:PHE:CE2  | 21:CO:93:ASP:O     | 2.67                     | 0.47              |
| 22:CP:2:ASN:N     | 22:CP:2:ASN:ND2    | 2.51                     | 0.47              |
| 22:CP:49:ILE:C    | 22:CP:50:ARG:HH11  | 2.18                     | 0.47              |
| 22:CP:59:THR:HG23 | 22:CP:76:HIS:CD2   | 2.49                     | 0.47              |
| 24:CR:44:GLY:CA   | 24:CR:51:VAL:O     | 2.52                     | 0.47              |
| 25:CS:53:SER:C    | 25:CS:55:ILE:N     | 2.67                     | 0.47              |
| 25:CS:84:ARG:NH2  | 25:CS:98:LYS:CE    | 2.68                     | 0.47              |
| 27:CU:43:LYS:CD   | 27:CU:57:ILE:HG22  | 2.45                     | 0.47              |
| 33:DA:39:G:N2     | 33:DA:40:C:H1'     | 2.29                     | 0.47              |
| 33:DA:145:G:N2    | 33:DA:177:G:O6     | 2.47                     | 0.47              |
| 33:DA:157:U:O2    | 33:DA:165:G:N1     | 2.47                     | 0.47              |
| 33:DA:347:G:C2    | 33:DA:348:G:C8     | 3.03                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:376:G:C2     | 33:DA:389:A:N3     | 2.83                     | 0.47              |
| 33:DA:669:G:N1     | 33:DA:670:G:C5     | 2.83                     | 0.47              |
| 33:DA:721:G:O6     | 33:DA:733:G:C2     | 2.68                     | 0.47              |
| 33:DA:759:A:H4'    | 33:DA:881:G:C5'    | 2.45                     | 0.47              |
| 33:DA:765:G:O6     | 33:DA:811:C:C5     | 2.67                     | 0.47              |
| 33:DA:804:U:C6     | 33:DA:805:C:H5     | 2.33                     | 0.47              |
| 33:DA:858:G:O5'    | 33:DA:858:G:H8     | 1.97                     | 0.47              |
| 33:DA:931:C:C2     | 33:DA:932:C:C5     | 3.03                     | 0.47              |
| 33:DA:1174:G:C2'   | 33:DA:1175:G:H5'   | 2.45                     | 0.47              |
| 33:DA:1253:G:H1    | 33:DA:1284:C:H42   | 1.63                     | 0.47              |
| 33:DA:1303:C:N3    | 33:DA:1334:G:N2    | 2.63                     | 0.47              |
| 33:DA:1385:G:H2'   | 33:DA:1386:G:H5'   | 1.96                     | 0.47              |
| 33:DA:1488:G:C6    | 33:DA:1489:G:C6    | 3.03                     | 0.47              |
| 35:DC:70:ALA:CB    | 35:DC:105:VAL:HG13 | 2.44                     | 0.47              |
| 35:DC:75:VAL:O     | 35:DC:83:VAL:HG13  | 2.15                     | 0.47              |
| 35:DC:131:ARG:O    | 35:DC:135:ARG:HB2  | 2.15                     | 0.47              |
| 36:DD:8:LEU:CD1    | 36:DD:12:ARG:HG3   | 2.45                     | 0.47              |
| 36:DD:19:PHE:HD1   | 36:DD:110:ARG:HH22 | 1.62                     | 0.47              |
| 36:DD:129:VAL:HG13 | 36:DD:131:ILE:HG13 | 1.96                     | 0.47              |
| 38:DF:38:ARG:O     | 38:DF:39:LEU:CB    | 2.62                     | 0.47              |
| 39:DG:131:GLY:C    | 39:DG:133:ALA:N    | 2.67                     | 0.47              |
| 39:DG:145:GLU:H    | 39:DG:148:LYS:H    | 1.63                     | 0.47              |
| 40:DH:107:LYS:HA   | 40:DH:107:LYS:NZ   | 2.29                     | 0.47              |
| 41:DI:111:GLU:HG2  | 41:DI:121:ARG:NH1  | 2.30                     | 0.47              |
| 43:DK:43:TRP:HE3   | 43:DK:44:ALA:CA    | 2.27                     | 0.47              |
| 47:DO:3:SER:HB3    | 47:DO:6:ALA:CB     | 2.33                     | 0.47              |
| 47:DO:14:PHE:CD2   | 47:DO:83:ARG:NH2   | 2.83                     | 0.47              |
| 2:A1:7:LYS:HE3     | 8:AB:2285:C:C5     | 2.50                     | 0.47              |
| 3:A2:25:LYS:O      | 3:A2:29:GLN:HB2    | 2.14                     | 0.47              |
| 3:A2:36:ALA:O      | 3:A2:38:GLY:N      | 2.47                     | 0.47              |
| 4:A3:23:HIS:NE2    | 4:A3:47:ALA:HB1    | 2.30                     | 0.47              |
| 4:A3:39:ARG:NE     | 8:AB:2363:G:OP2    | 2.48                     | 0.47              |
| 5:A4:22:VAL:O      | 5:A4:22:VAL:CG2    | 2.62                     | 0.47              |
| 8:AB:9:G:N1        | 8:AB:2629:U:C6     | 2.83                     | 0.47              |
| 8:AB:72:U:H1'      | 30:AX:51:ALA:CB    | 2.44                     | 0.47              |
| 8:AB:129:C:HO2'    | 8:AB:130:C:H6      | 1.55                     | 0.47              |
| 8:AB:204:A:O5'     | 8:AB:204:A:C2'     | 2.63                     | 0.47              |
| 8:AB:337:C:C2      | 8:AB:338:G:O4'     | 2.68                     | 0.47              |
| 8:AB:357:C:N3      | 8:AB:358:U:C4      | 2.83                     | 0.47              |
| 8:AB:376:G:H2'     | 8:AB:377:G:H8      | 1.75                     | 0.47              |
| 8:AB:608:A:N6      | 8:AB:621:A:C8      | 2.83                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:743:A:H8      | 8:AB:743:A:O5'     | 1.96                     | 0.47              |
| 8:AB:832:U:H2'     | 8:AB:833:A:C8      | 2.50                     | 0.47              |
| 8:AB:945:A:C4      | 8:AB:2448:A:N3     | 2.83                     | 0.47              |
| 8:AB:988:A:H2      | 8:AB:989:G:N2      | 2.12                     | 0.47              |
| 8:AB:1027:A:N3     | 8:AB:1027:A:H2'    | 2.30                     | 0.47              |
| 8:AB:1031:G:O6     | 8:AB:1032:A:N6     | 2.47                     | 0.47              |
| 8:AB:1156:A:N6     | 23:AQ:47:ARG:HD3   | 2.30                     | 0.47              |
| 8:AB:1164:C:N4     | 8:AB:1165:A:N6     | 2.63                     | 0.47              |
| 8:AB:1216:G:C5'    | 8:AB:1216:G:H8     | 2.28                     | 0.47              |
| 8:AB:1343:G:N2     | 8:AB:1384:A:C2     | 2.83                     | 0.47              |
| 8:AB:1350:C:C5     | 8:AB:1351:C:H5     | 2.33                     | 0.47              |
| 8:AB:1398:C:H2'    | 8:AB:1399:C:H6     | 1.80                     | 0.47              |
| 8:AB:1820:U:O2     | 9:AC:200:MET:HB2   | 2.15                     | 0.47              |
| 8:AB:1821:A:C6     | 8:AB:1822:C:N4     | 2.82                     | 0.47              |
| 8:AB:1933:G:C8     | 8:AB:1933:G:C3'    | 2.98                     | 0.47              |
| 8:AB:1988:G:C8     | 8:AB:1988:G:H3'    | 2.49                     | 0.47              |
| 8:AB:2045:C:H42    | 8:AB:2623:G:H1     | 1.63                     | 0.47              |
| 8:AB:2229:U:C2     | 8:AB:2230:G:N7     | 2.83                     | 0.47              |
| 8:AB:2396:G:C2'    | 8:AB:2397:G:H5'    | 2.45                     | 0.47              |
| 8:AB:2500:U:O2     | 8:AB:2504:U:C6     | 2.67                     | 0.47              |
| 8:AB:2570:G:C5     | 8:AB:2571:U:C5     | 3.03                     | 0.47              |
| 8:AB:2640:G:C3'    | 8:AB:2641:G:H5''   | 2.45                     | 0.47              |
| 8:AB:2838:G:N2     | 8:AB:2839:G:H1'    | 2.29                     | 0.47              |
| 11:AE:159:LEU:HD21 | 11:AE:169:VAL:HG21 | 1.97                     | 0.47              |
| 13:AG:97:VAL:HG11  | 13:AG:123:GLU:HG2  | 1.96                     | 0.47              |
| 14:AH:50:ARG:O     | 14:AH:50:ARG:HG2   | 2.15                     | 0.47              |
| 16:AJ:32:LEU:O     | 16:AJ:36:LEU:HD12  | 2.15                     | 0.47              |
| 16:AJ:34:ARG:O     | 16:AJ:38:GLY:N     | 2.46                     | 0.47              |
| 17:AK:87:LEU:HD23  | 17:AK:87:LEU:N     | 2.28                     | 0.47              |
| 18:AL:84:LYS:HE3   | 18:AL:84:LYS:HA    | 1.96                     | 0.47              |
| 18:AL:96:LYS:HE2   | 18:AL:100:ILE:HA   | 1.95                     | 0.47              |
| 19:AM:41:LEU:HB2   | 19:AM:93:VAL:HG22  | 1.97                     | 0.47              |
| 21:AO:76:LYS:NZ    | 21:AO:80:GLU:N     | 2.63                     | 0.47              |
| 22:AP:50:ARG:HG3   | 22:AP:99:LEU:HB3   | 1.96                     | 0.47              |
| 22:AP:52:ARG:HG2   | 22:AP:60:VAL:HG11  | 1.96                     | 0.47              |
| 23:AQ:46:TYR:CD1   | 23:AQ:46:TYR:C     | 2.87                     | 0.47              |
| 29:AW:69:GLU:OE2   | 29:AW:70:VAL:N     | 2.47                     | 0.47              |
| 32:AZ:2:LYS:O      | 32:AZ:4:ASP:N      | 2.47                     | 0.47              |
| 33:BA:133:U:H4'    | 33:BA:325:A:O2'    | 2.15                     | 0.47              |
| 33:BA:244:U:C6     | 33:BA:244:U:C5'    | 2.98                     | 0.47              |
| 33:BA:402:G:C6     | 33:BA:403:C:C4     | 3.03                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:428:G:C8     | 33:BA:430:A:N7    | 2.82                     | 0.47              |
| 33:BA:490:C:C2     | 33:BA:491:G:C8    | 3.03                     | 0.47              |
| 33:BA:595:A:H1'    | 33:BA:596:A:N7    | 2.29                     | 0.47              |
| 33:BA:642:A:H2'    | 33:BA:643:C:H6    | 1.76                     | 0.47              |
| 33:BA:708:C:C4'    | 43:BK:38:GLY:HA3  | 2.41                     | 0.47              |
| 33:BA:868:C:H2'    | 33:BA:869:G:C5'   | 2.45                     | 0.47              |
| 33:BA:931:C:N3     | 33:BA:932:C:C4    | 2.83                     | 0.47              |
| 33:BA:970:C:H6     | 33:BA:970:C:H3'   | 1.79                     | 0.47              |
| 33:BA:1014:A:C4    | 51:BS:33:TRP:CD2  | 3.02                     | 0.47              |
| 33:BA:1152:A:H4'   | 42:BJ:15:HIS:ND1  | 2.29                     | 0.47              |
| 33:BA:1242:G:N2    | 33:BA:1296:C:H1'  | 2.29                     | 0.47              |
| 33:BA:1293:C:C4    | 33:BA:1294:G:N7   | 2.82                     | 0.47              |
| 33:BA:1347:G:N2    | 33:BA:1373:G:H3'  | 2.26                     | 0.47              |
| 34:BB:105:THR:HA   | 34:BB:108:GLN:HG2 | 1.97                     | 0.47              |
| 34:BB:111:LYS:C    | 34:BB:113:LEU:H   | 2.17                     | 0.47              |
| 36:BD:32:LYS:HB3   | 36:BD:35:GLN:OE1  | 2.15                     | 0.47              |
| 38:BF:53:LYS:O     | 38:BF:53:LYS:HD3  | 2.15                     | 0.47              |
| 40:BH:6:ILE:HD12   | 40:BH:32:LYS:HG2  | 1.96                     | 0.47              |
| 41:BI:51:LEU:HD11  | 41:BI:82:ILE:HD13 | 1.95                     | 0.47              |
| 43:BK:21:HIS:ND1   | 43:BK:34:THR:HG21 | 2.30                     | 0.47              |
| 43:BK:103:GLY:O    | 43:BK:104:PHE:HD1 | 1.98                     | 0.47              |
| 44:BL:14:LYS:HE2   | 44:BL:15:VAL:O    | 2.15                     | 0.47              |
| 44:BL:106:VAL:HG21 | 44:BL:116:TYR:HB3 | 1.97                     | 0.47              |
| 48:BP:46:LYS:HZ1   | 48:BP:49:GLY:HA2  | 1.78                     | 0.47              |
| 52:BT:38:ILE:C     | 52:BT:40:ALA:N    | 2.68                     | 0.47              |
| 52:BT:60:GLN:O     | 52:BT:67:HIS:CD2  | 2.68                     | 0.47              |
| 53:BU:34:ARG:HB2   | 53:BU:37:TYR:OH   | 2.14                     | 0.47              |
| 1:C0:43:THR:O      | 1:C0:44:ALA:HB3   | 2.15                     | 0.47              |
| 7:CA:46:A:H4'      | 21:CO:1:MET:HB2   | 1.96                     | 0.47              |
| 7:CA:49:C:H2'      | 7:CA:50:A:C8      | 2.49                     | 0.47              |
| 8:CB:72:U:O2'      | 8:CB:73:A:H5'     | 2.15                     | 0.47              |
| 8:CB:85:G:H1'      | 8:CB:103:A:C2     | 2.49                     | 0.47              |
| 8:CB:166:U:C2'     | 8:CB:167:A:H5'    | 2.44                     | 0.47              |
| 8:CB:239:C:H42     | 8:CB:258:G:H1     | 1.63                     | 0.47              |
| 8:CB:244:A:C4      | 8:CB:255:A:C6     | 3.03                     | 0.47              |
| 8:CB:253:C:O2      | 8:CB:253:C:C2'    | 2.63                     | 0.47              |
| 8:CB:319:G:C5      | 8:CB:333:G:N2     | 2.83                     | 0.47              |
| 8:CB:465:G:H8      | 8:CB:465:G:H5''   | 1.80                     | 0.47              |
| 8:CB:609:A:H2'     | 8:CB:610:C:O4'    | 2.15                     | 0.47              |
| 8:CB:684:G:N1      | 8:CB:774:G:C2     | 2.83                     | 0.47              |
| 8:CB:751:A:C6      | 8:CB:789:A:C6     | 3.03                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:768:G:C2     | 8:CB:769:U:O2     | 2.68                     | 0.47              |
| 8:CB:783:A:C5     | 8:CB:785:G:H1'    | 2.50                     | 0.47              |
| 8:CB:817:C:C2'    | 8:CB:818:G:H5'    | 2.45                     | 0.47              |
| 8:CB:838:C:C2     | 8:CB:941:A:N6     | 2.83                     | 0.47              |
| 8:CB:964:C:O5'    | 8:CB:964:C:H6     | 1.97                     | 0.47              |
| 8:CB:1057:A:H2'   | 8:CB:1058:U:H5'   | 1.96                     | 0.47              |
| 8:CB:1275:A:N7    | 20:CN:16:HIS:CG   | 2.83                     | 0.47              |
| 8:CB:1339:G:O4'   | 8:CB:1393:A:C2    | 2.68                     | 0.47              |
| 8:CB:1386:C:H6    | 8:CB:1386:C:H5''  | 1.79                     | 0.47              |
| 8:CB:1528:A:C2'   | 8:CB:1529:G:H5'   | 2.42                     | 0.47              |
| 8:CB:1614:A:N6    | 25:CS:91:GLY:O    | 2.46                     | 0.47              |
| 8:CB:1973:G:C8    | 8:CB:1973:G:C3'   | 2.98                     | 0.47              |
| 8:CB:2024:G:N1    | 8:CB:2025:C:C4    | 2.83                     | 0.47              |
| 8:CB:2065:C:C6    | 8:CB:2066:C:H5    | 2.32                     | 0.47              |
| 8:CB:2243:U:O2    | 8:CB:2434:A:H2    | 1.98                     | 0.47              |
| 8:CB:2282:G:H4'   | 8:CB:2283:C:OP2   | 2.15                     | 0.47              |
| 8:CB:2291:U:H2'   | 8:CB:2292:U:C6    | 2.50                     | 0.47              |
| 8:CB:2357:G:C2    | 8:CB:2361:G:C6    | 3.03                     | 0.47              |
| 8:CB:2618:G:C8    | 8:CB:2619:C:H5    | 2.33                     | 0.47              |
| 9:CC:124:LYS:H    | 9:CC:191:LEU:HD21 | 1.79                     | 0.47              |
| 10:CD:89:GLU:HG2  | 10:CD:93:GLY:CA   | 2.45                     | 0.47              |
| 11:CE:42:GLY:O    | 11:CE:43:THR:OG1  | 2.29                     | 0.47              |
| 12:CF:144:LYS:HG3 | 12:CF:145:VAL:N   | 2.30                     | 0.47              |
| 16:CJ:85:LYS:HA   | 16:CJ:85:LYS:HZ3  | 1.78                     | 0.47              |
| 16:CJ:110:PRO:O   | 16:CJ:111:LYS:HB2 | 2.15                     | 0.47              |
| 19:CM:107:GLY:O   | 19:CM:109:PRO:HD3 | 2.15                     | 0.47              |
| 20:CN:4:ARG:CZ    | 20:CN:6:SER:OG    | 2.63                     | 0.47              |
| 21:CO:90:VAL:HG13 | 21:CO:116:GLN:O   | 2.15                     | 0.47              |
| 22:CP:18:SER:HA   | 22:CP:87:ARG:HH21 | 1.78                     | 0.47              |
| 23:CQ:87:VAL:HB   | 24:CR:54:VAL:CG2  | 2.45                     | 0.47              |
| 23:CQ:91:ARG:CA   | 23:CQ:94:LEU:HD23 | 2.41                     | 0.47              |
| 25:CS:9:HIS:O     | 25:CS:10:ALA:HB3  | 2.15                     | 0.47              |
| 25:CS:85:ILE:CD1  | 25:CS:86:MET:H    | 2.27                     | 0.47              |
| 28:CV:60:VAL:HB   | 28:CV:72:VAL:O    | 2.14                     | 0.47              |
| 28:CV:87:GLN:HB3  | 28:CV:88:HIS:H    | 1.38                     | 0.47              |
| 29:CW:3:LYS:O     | 29:CW:4:LYS:C     | 2.53                     | 0.47              |
| 29:CW:26:GLY:O    | 29:CW:59:PHE:HB3  | 2.15                     | 0.47              |
| 29:CW:35:ILE:CG1  | 29:CW:70:VAL:HB   | 2.45                     | 0.47              |
| 33:DA:185:U:C6    | 33:DA:185:U:C3'   | 2.98                     | 0.47              |
| 33:DA:337:G:H2'   | 33:DA:338:A:H8    | 1.73                     | 0.47              |
| 33:DA:343:U:O2'   | 33:DA:344:A:H8    | 1.98                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:357:G:C2    | 33:DA:358:U:C4     | 3.03                     | 0.47              |
| 33:DA:531:U:H5'   | 33:DA:531:U:H6     | 1.72                     | 0.47              |
| 33:DA:546:A:OP1   | 36:DD:69:ARG:HB2   | 2.15                     | 0.47              |
| 33:DA:563:A:H2'   | 33:DA:563:A:N3     | 2.30                     | 0.47              |
| 33:DA:569:C:H4'   | 55:DA:5137:HOH:O   | 2.14                     | 0.47              |
| 33:DA:764:C:N4    | 33:DA:812:G:H1     | 2.13                     | 0.47              |
| 33:DA:899:C:C5    | 33:DA:900:A:C6     | 3.03                     | 0.47              |
| 33:DA:905:U:C6    | 33:DA:906:A:C8     | 3.03                     | 0.47              |
| 33:DA:922:G:H4'   | 37:DE:24:VAL:CA    | 2.45                     | 0.47              |
| 33:DA:961:U:O2    | 33:DA:1222:G:N2    | 2.48                     | 0.47              |
| 33:DA:978:A:H8    | 33:DA:978:A:O5'    | 1.98                     | 0.47              |
| 33:DA:988:G:N1    | 33:DA:989:U:C4     | 2.83                     | 0.47              |
| 33:DA:1187:G:C5   | 33:DA:1188:A:C5    | 3.02                     | 0.47              |
| 33:DA:1392:G:H21  | 33:DA:1502:A:H1'   | 1.80                     | 0.47              |
| 33:DA:1480:A:C6   | 33:DA:1481:U:N3    | 2.83                     | 0.47              |
| 34:DB:17:HIS:CG   | 34:DB:202:ASN:ND2  | 2.82                     | 0.47              |
| 35:DC:54:ILE:O    | 35:DC:54:ILE:HG23  | 2.15                     | 0.47              |
| 35:DC:123:LEU:H   | 35:DC:123:LEU:HD22 | 1.79                     | 0.47              |
| 41:DI:35:GLU:HA   | 41:DI:39:GLY:CA    | 2.45                     | 0.47              |
| 41:DI:76:GLY:O    | 41:DI:80:HIS:HB3   | 2.15                     | 0.47              |
| 44:DL:26:CYS:SG   | 44:DL:29:LYS:HE2   | 2.54                     | 0.47              |
| 49:DQ:19:SER:C    | 49:DQ:20:ILE:HD12  | 2.36                     | 0.47              |
| 52:DT:11:ILE:HD12 | 52:DT:12:GLN:N     | 2.30                     | 0.47              |
| 53:DU:4:LYS:HG2   | 53:DU:6:ARG:NH2    | 2.14                     | 0.47              |
| 2:A1:8:ILE:HG21   | 2:A1:27:ARG:HG2    | 1.97                     | 0.47              |
| 3:A2:11:LYS:O     | 3:A2:15:SER:HB2    | 2.14                     | 0.47              |
| 5:A4:2:LYS:HB3    | 5:A4:2:LYS:HZ2     | 1.80                     | 0.47              |
| 5:A4:22:VAL:HG21  | 5:A4:24:ARG:HE     | 1.80                     | 0.47              |
| 7:AA:6:G:N2       | 7:AA:115:A:C4      | 2.83                     | 0.47              |
| 7:AA:45:A:O4'     | 12:AF:91:ARG:HD3   | 2.15                     | 0.47              |
| 7:AA:81:G:N2      | 7:AA:82:U:H1'      | 2.30                     | 0.47              |
| 8:AB:30:G:H2'     | 8:AB:31:C:C6       | 2.50                     | 0.47              |
| 8:AB:62:U:O2'     | 8:AB:63:A:H5'      | 2.15                     | 0.47              |
| 8:AB:80:G:C2      | 8:AB:81:G:C8       | 3.02                     | 0.47              |
| 8:AB:262:A:C8     | 8:AB:263:G:H8      | 2.33                     | 0.47              |
| 8:AB:464:U:C2'    | 8:AB:465:G:H5''    | 2.45                     | 0.47              |
| 8:AB:533:G:H4'    | 23:AQ:23:TYR:CE2   | 2.50                     | 0.47              |
| 8:AB:566:U:H2'    | 8:AB:567:U:H6      | 1.79                     | 0.47              |
| 8:AB:627:A:H2'    | 8:AB:627:A:H5''    | 1.68                     | 0.47              |
| 8:AB:785:G:C6     | 8:AB:786:C:N3      | 2.82                     | 0.47              |
| 8:AB:785:G:C5     | 8:AB:786:C:C4      | 3.03                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1034:G:C6    | 8:AB:1122:G:O6    | 2.68                     | 0.47              |
| 8:AB:1084:A:C5    | 8:AB:1085:A:C8    | 3.02                     | 0.47              |
| 8:AB:1243:C:HO2'  | 18:AL:15:ALA:HB2  | 1.78                     | 0.47              |
| 8:AB:1257:C:N3    | 8:AB:1258:U:C4    | 2.83                     | 0.47              |
| 8:AB:1281:G:O6    | 8:AB:1286:A:N7    | 2.47                     | 0.47              |
| 8:AB:1296:G:N3    | 8:AB:1645:G:C2    | 2.83                     | 0.47              |
| 8:AB:1359:A:N3    | 8:AB:1360:G:C1'   | 2.77                     | 0.47              |
| 8:AB:1404:C:C2    | 8:AB:1405:U:C5    | 3.03                     | 0.47              |
| 8:AB:1434:A:C2'   | 8:AB:1435:G:O5'   | 2.63                     | 0.47              |
| 8:AB:1473:G:H2'   | 8:AB:1474:U:C6    | 2.50                     | 0.47              |
| 8:AB:1614:A:H8    | 8:AB:1614:A:C5'   | 2.28                     | 0.47              |
| 8:AB:1649:G:H5''  | 8:AB:1649:G:H8    | 1.80                     | 0.47              |
| 8:AB:1651:G:P     | 20:AN:37:THR:HG21 | 2.54                     | 0.47              |
| 8:AB:1707:G:C8    | 8:AB:1756:G:C5    | 3.03                     | 0.47              |
| 8:AB:1750:G:C6    | 8:AB:1751:U:C4    | 3.02                     | 0.47              |
| 8:AB:1795:C:N3    | 8:AB:1824:G:O6    | 2.48                     | 0.47              |
| 8:AB:1796:U:H1'   | 8:AB:1824:G:N2    | 2.28                     | 0.47              |
| 8:AB:1984:G:C6    | 8:AB:1985:C:C4    | 3.03                     | 0.47              |
| 8:AB:2195:U:C2    | 8:AB:2196:C:C6    | 3.03                     | 0.47              |
| 8:AB:2315:G:H2'   | 8:AB:2316:G:C8    | 2.50                     | 0.47              |
| 8:AB:2432:A:H5''  | 8:AB:2432:A:C8    | 2.50                     | 0.47              |
| 8:AB:2522:U:H1'   | 8:AB:2647:U:OP1   | 2.15                     | 0.47              |
| 8:AB:2568:U:H2'   | 8:AB:2569:G:O4'   | 2.15                     | 0.47              |
| 8:AB:2636:C:C4'   | 10:AD:80:TRP:CE2  | 2.80                     | 0.47              |
| 8:AB:2697:G:N2    | 8:AB:2711:A:C4    | 2.83                     | 0.47              |
| 10:AD:1:MET:N     | 10:AD:81:GLU:CD   | 2.68                     | 0.47              |
| 11:AE:44:ARG:N    | 11:AE:44:ARG:CD   | 2.78                     | 0.47              |
| 15:AI:15:GLY:O    | 15:AI:16:MET:HB2  | 2.14                     | 0.47              |
| 17:AK:22:ILE:HG12 | 17:AK:40:LYS:HB3  | 1.97                     | 0.47              |
| 19:AM:123:LYS:HB3 | 19:AM:123:LYS:HZ2 | 1.79                     | 0.47              |
| 20:AN:75:ILE:HG12 | 20:AN:75:ILE:O    | 2.15                     | 0.47              |
| 24:AR:86:GLN:O    | 24:AR:87:GLN:C    | 2.54                     | 0.47              |
| 29:AW:32:ALA:C    | 29:AW:66:VAL:HG21 | 2.35                     | 0.47              |
| 33:BA:15:G:N1     | 33:BA:16:A:C5     | 2.83                     | 0.47              |
| 33:BA:16:A:C2     | 33:BA:17:U:C5     | 3.03                     | 0.47              |
| 33:BA:19:A:C1'    | 33:BA:864:A:H1'   | 2.45                     | 0.47              |
| 33:BA:155:A:H2'   | 33:BA:156:C:C6    | 2.50                     | 0.47              |
| 33:BA:189:A:C5'   | 33:BA:189:A:C8    | 2.98                     | 0.47              |
| 33:BA:227:G:C5    | 33:BA:228:A:N7    | 2.82                     | 0.47              |
| 33:BA:475:C:H2'   | 33:BA:476:U:H6    | 1.80                     | 0.47              |
| 33:BA:552:U:H4'   | 44:BL:82:ARG:CG   | 2.45                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:577:G:C5     | 33:BA:816:A:C2     | 3.03                     | 0.47              |
| 33:BA:582:C:OP2    | 33:BA:758:C:N4     | 2.48                     | 0.47              |
| 33:BA:601:G:C2'    | 33:BA:602:A:H5'    | 2.44                     | 0.47              |
| 33:BA:746:A:H2'    | 33:BA:747:A:C8     | 2.50                     | 0.47              |
| 33:BA:833:G:C5     | 33:BA:834:U:C5     | 3.03                     | 0.47              |
| 33:BA:955:U:H3     | 33:BA:1225:A:N6    | 2.10                     | 0.47              |
| 33:BA:969:A:O2'    | 33:BA:970:C:H5'    | 2.15                     | 0.47              |
| 33:BA:1366:C:H2'   | 33:BA:1367:C:H6    | 1.77                     | 0.47              |
| 33:BA:1415:G:C5    | 33:BA:1416:G:N7    | 2.83                     | 0.47              |
| 34:BB:30:ILE:HG23  | 34:BB:39:ILE:O     | 2.15                     | 0.47              |
| 35:BC:41:TYR:C     | 35:BC:43:THR:H     | 2.18                     | 0.47              |
| 35:BC:156:LEU:HD12 | 35:BC:156:LEU:N    | 2.30                     | 0.47              |
| 36:BD:104:MET:SD   | 36:BD:142:VAL:HG21 | 2.55                     | 0.47              |
| 37:BE:80:LEU:O     | 37:BE:97:PRO:CB    | 2.63                     | 0.47              |
| 41:BI:11:ARG:HE    | 41:BI:11:ARG:C     | 2.18                     | 0.47              |
| 41:BI:113:LYS:HE2  | 41:BI:117:LEU:O    | 2.15                     | 0.47              |
| 42:BJ:52:LEU:H     | 42:BJ:52:LEU:CD1   | 2.24                     | 0.47              |
| 47:BO:66:LEU:HB3   | 47:BO:77:TYR:HE1   | 1.80                     | 0.47              |
| 52:BT:76:ALA:O     | 52:BT:79:THR:N     | 2.48                     | 0.47              |
| 4:C3:53:ASP:O      | 4:C3:56:LEU:HB3    | 2.15                     | 0.47              |
| 7:CA:46:A:C6       | 7:CA:47:C:N3       | 2.83                     | 0.47              |
| 8:CB:59:U:O2'      | 8:CB:60:G:H5''     | 2.15                     | 0.47              |
| 8:CB:140:C:H4'     | 8:CB:141:G:N2      | 2.30                     | 0.47              |
| 8:CB:193:U:N3      | 8:CB:194:G:N7      | 2.62                     | 0.47              |
| 8:CB:568:U:H2'     | 8:CB:570:G:OP2     | 2.15                     | 0.47              |
| 8:CB:579:G:C2      | 8:CB:1262:A:C4     | 3.03                     | 0.47              |
| 8:CB:791:C:N4      | 8:CB:794:A:H1'     | 2.29                     | 0.47              |
| 8:CB:1135:C:N4     | 8:CB:1139:G:C6     | 2.83                     | 0.47              |
| 8:CB:1136:G:H2'    | 8:CB:1137:G:O4'    | 2.15                     | 0.47              |
| 8:CB:1275:A:N7     | 20:CN:16:HIS:ND1   | 2.63                     | 0.47              |
| 8:CB:1361:G:O5'    | 8:CB:1361:G:H8     | 1.97                     | 0.47              |
| 8:CB:1403:A:H2'    | 8:CB:1404:C:O4'    | 2.15                     | 0.47              |
| 8:CB:1429:G:C1'    | 8:CB:1568:G:H1'    | 2.45                     | 0.47              |
| 8:CB:1734:G:C2     | 8:CB:1735:A:C8     | 3.02                     | 0.47              |
| 8:CB:1820:U:O2'    | 9:CC:155:ARG:HD2   | 2.15                     | 0.47              |
| 8:CB:1839:G:C5     | 8:CB:1840:G:N7     | 2.83                     | 0.47              |
| 8:CB:2059:A:C2     | 8:CB:2503:A:N1     | 2.83                     | 0.47              |
| 8:CB:2133:G:OP2    | 8:CB:2133:G:C8     | 2.68                     | 0.47              |
| 8:CB:2137:U:N3     | 8:CB:2154:A:N6     | 2.60                     | 0.47              |
| 8:CB:2345:G:C2     | 8:CB:2381:A:C4     | 3.03                     | 0.47              |
| 8:CB:2671:G:C6     | 8:CB:2672:U:N3     | 2.83                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2850:A:C6     | 8:CB:2851:A:N7     | 2.82                     | 0.47              |
| 9:CC:136:VAL:O     | 9:CC:137:GLY:C     | 2.53                     | 0.47              |
| 9:CC:156:SER:O     | 9:CC:195:GLY:HA3   | 2.14                     | 0.47              |
| 9:CC:174:ARG:O     | 9:CC:174:ARG:HG3   | 2.13                     | 0.47              |
| 9:CC:235:GLU:HG2   | 9:CC:237:ARG:HG3   | 1.97                     | 0.47              |
| 10:CD:49:GLN:HG2   | 10:CD:50:VAL:N     | 2.30                     | 0.47              |
| 13:CG:71:LEU:O     | 13:CG:72:ASN:C     | 2.53                     | 0.47              |
| 13:CG:158:GLY:O    | 13:CG:160:GLY:N    | 2.48                     | 0.47              |
| 15:CI:79:LEU:HD23  | 15:CI:108:ILE:HD13 | 1.97                     | 0.47              |
| 16:CJ:57:LEU:O     | 16:CJ:59:ALA:N     | 2.48                     | 0.47              |
| 19:CM:32:GLY:O     | 19:CM:33:LEU:HB2   | 2.15                     | 0.47              |
| 21:CO:34:HIS:HA    | 21:CO:53:THR:HG21  | 1.96                     | 0.47              |
| 23:CQ:14:LYS:O     | 23:CQ:15:LYS:C     | 2.53                     | 0.47              |
| 24:CR:6:GLN:CA     | 24:CR:10:LYS:HA    | 2.44                     | 0.47              |
| 25:CS:36:LEU:HA    | 25:CS:39:THR:HG22  | 1.97                     | 0.47              |
| 30:CX:17:GLU:O     | 30:CX:18:LEU:HD13  | 2.14                     | 0.47              |
| 33:DA:173:U:H6     | 33:DA:198:G:H1'    | 1.78                     | 0.47              |
| 33:DA:237:G:C6     | 33:DA:238:A:N6     | 2.83                     | 0.47              |
| 33:DA:307:C:H6     | 33:DA:307:C:H5''   | 1.80                     | 0.47              |
| 33:DA:615:G:H1'    | 33:DA:626:G:N2     | 2.30                     | 0.47              |
| 33:DA:663:A:H5'    | 33:DA:836:G:OP1    | 2.15                     | 0.47              |
| 33:DA:1073:U:H2'   | 34:DB:102:ASN:OD1  | 2.15                     | 0.47              |
| 33:DA:1093:A:N3    | 33:DA:1109:C:O2    | 2.48                     | 0.47              |
| 33:DA:1177:G:C6    | 33:DA:1178:G:C2    | 3.03                     | 0.47              |
| 33:DA:1250:A:H5''  | 41:DI:68:GLY:CA    | 2.40                     | 0.47              |
| 33:DA:1510:C:H2'   | 33:DA:1511:G:C8    | 2.50                     | 0.47              |
| 34:DB:63:LYS:HE3   | 34:DB:87:ASP:OD2   | 2.15                     | 0.47              |
| 34:DB:209:VAL:C    | 34:DB:211:LEU:H    | 2.18                     | 0.47              |
| 35:DC:46:LEU:HD13  | 35:DC:49:ALA:HB3   | 1.97                     | 0.47              |
| 36:DD:6:PRO:CG     | 36:DD:9:LYS:HD3    | 2.46                     | 0.47              |
| 37:DE:139:THR:O    | 37:DE:143:LEU:N    | 2.48                     | 0.47              |
| 40:DH:102:VAL:CG2  | 40:DH:126:CYS:SG   | 3.03                     | 0.47              |
| 43:DK:87:GLY:HA2   | 43:DK:88:PRO:HD2   | 1.54                     | 0.47              |
| 43:DK:112:VAL:HG12 | 50:DR:72:ARG:HD2   | 1.97                     | 0.47              |
| 44:DL:35:ARG:HH12  | 44:DL:75:GLU:HB3   | 1.79                     | 0.47              |
| 46:DN:40:ARG:HG3   | 51:DS:6:LYS:HB2    | 1.96                     | 0.47              |
| 50:DR:19:GLU:C     | 50:DR:21:ASP:H     | 2.19                     | 0.47              |
| 53:DU:37:TYR:CD2   | 53:DU:38:GLU:OE1   | 2.65                     | 0.47              |
| 7:AA:23:G:C6       | 7:AA:59:A:N6       | 2.83                     | 0.46              |
| 7:AA:102:G:O2'     | 19:AM:136:MET:SD   | 2.73                     | 0.46              |
| 8:AB:19:A:C4       | 8:AB:20:C:C5       | 3.03                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:31:C:C6      | 8:AB:31:C:C3'      | 2.98                     | 0.46              |
| 8:AB:172:A:O2'    | 8:AB:173:A:H5'     | 2.15                     | 0.46              |
| 8:AB:196:A:C3'    | 8:AB:197:A:C5'     | 2.80                     | 0.46              |
| 8:AB:201:C:H2'    | 8:AB:202:U:C5'     | 2.45                     | 0.46              |
| 8:AB:247:G:C8     | 8:AB:247:G:C3'     | 2.98                     | 0.46              |
| 8:AB:356:G:C4     | 8:AB:357:C:C5      | 3.03                     | 0.46              |
| 8:AB:372:G:H8     | 32:AZ:54:GLY:CA    | 2.28                     | 0.46              |
| 8:AB:390:U:H6     | 8:AB:390:U:O5'     | 1.98                     | 0.46              |
| 8:AB:500:G:N2     | 8:AB:502:A:H3'     | 2.31                     | 0.46              |
| 8:AB:506:G:H4'    | 8:AB:507:A:H5'     | 1.97                     | 0.46              |
| 8:AB:523:C:H3'    | 8:AB:523:C:C6      | 2.49                     | 0.46              |
| 8:AB:612:G:H1'    | 8:AB:616:A:N6      | 2.29                     | 0.46              |
| 8:AB:693:A:C2     | 8:AB:694:U:O2      | 2.68                     | 0.46              |
| 8:AB:749:A:C6     | 8:AB:1618:A:N1     | 2.83                     | 0.46              |
| 8:AB:851:C:O2'    | 31:AY:45:GLY:HA3   | 2.15                     | 0.46              |
| 8:AB:1124:G:H2'   | 8:AB:1125:G:C8     | 2.50                     | 0.46              |
| 8:AB:1216:G:C5'   | 8:AB:1216:G:C8     | 2.98                     | 0.46              |
| 8:AB:1265:A:N9    | 8:AB:1267:U:C5     | 2.83                     | 0.46              |
| 8:AB:1286:A:O2'   | 8:AB:1287:A:H5''   | 2.15                     | 0.46              |
| 8:AB:1307:A:C5    | 8:AB:1308:A:C8     | 3.03                     | 0.46              |
| 8:AB:1558:C:C2    | 8:AB:1560:G:C6     | 3.03                     | 0.46              |
| 8:AB:1603:A:C6    | 8:AB:1604:C:C2     | 3.03                     | 0.46              |
| 8:AB:1802:A:N6    | 8:AB:1817:G:H21    | 2.14                     | 0.46              |
| 8:AB:2039:U:H2'   | 8:AB:2040:G:O4'    | 2.15                     | 0.46              |
| 8:AB:2429:G:H5''  | 8:AB:2430:A:OP2    | 2.15                     | 0.46              |
| 8:AB:2640:G:C6    | 8:AB:2775:G:N2     | 2.83                     | 0.46              |
| 8:AB:2703:C:H2'   | 8:AB:2704:C:C6     | 2.50                     | 0.46              |
| 8:AB:2713:U:H3'   | 8:AB:2714:G:C5'    | 2.42                     | 0.46              |
| 8:AB:2743:U:C6    | 8:AB:2743:U:C3'    | 2.98                     | 0.46              |
| 8:AB:2819:G:O2'   | 8:AB:2820:A:C5'    | 2.63                     | 0.46              |
| 8:AB:2896:C:H2'   | 8:AB:2897:U:O4'    | 2.14                     | 0.46              |
| 9:AC:66:PHE:O     | 9:AC:68:ARG:N      | 2.46                     | 0.46              |
| 10:AD:37:VAL:HG22 | 10:AD:42:ASN:OD1   | 2.15                     | 0.46              |
| 11:AE:90:GLN:HG3  | 11:AE:92:HIS:CD2   | 2.50                     | 0.46              |
| 11:AE:115:GLN:O   | 11:AE:185:LYS:HE3  | 2.15                     | 0.46              |
| 13:AG:93:TYR:O    | 13:AG:128:THR:HG22 | 2.16                     | 0.46              |
| 14:AH:89:LYS:NZ   | 14:AH:123:ARG:HH11 | 2.12                     | 0.46              |
| 15:AI:125:THR:O   | 15:AI:129:GLU:HG3  | 2.16                     | 0.46              |
| 16:AJ:81:ILE:CA   | 16:AJ:84:ILE:HD11  | 2.35                     | 0.46              |
| 19:AM:5:LYS:HE2   | 19:AM:91:TYR:CD1   | 2.50                     | 0.46              |
| 19:AM:68:PHE:CB   | 19:AM:69:PRO:HD2   | 2.42                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:AO:13:ARG:H    | 21:AO:13:ARG:HG3  | 1.39                     | 0.46              |
| 22:AP:31:VAL:HG12 | 22:AP:33:GLU:H    | 1.79                     | 0.46              |
| 23:AQ:33:VAL:HA   | 23:AQ:37:ALA:HB3  | 1.96                     | 0.46              |
| 24:AR:84:ARG:HH12 | 24:AR:86:GLN:HB3  | 1.80                     | 0.46              |
| 32:AZ:47:LYS:HD3  | 32:AZ:52:ALA:HA   | 1.97                     | 0.46              |
| 33:BA:39:G:C6     | 33:BA:404:G:C2    | 3.03                     | 0.46              |
| 33:BA:46:G:C2     | 33:BA:366:A:C8    | 3.03                     | 0.46              |
| 33:BA:246:A:N6    | 33:BA:281:G:H1'   | 2.30                     | 0.46              |
| 33:BA:401:C:C6    | 33:BA:401:C:C3'   | 2.98                     | 0.46              |
| 33:BA:525:C:C2'   | 33:BA:526:C:H5'   | 2.46                     | 0.46              |
| 33:BA:552:U:H4'   | 44:BL:82:ARG:HG3  | 1.96                     | 0.46              |
| 33:BA:624:C:C4    | 33:BA:625:U:C5    | 3.02                     | 0.46              |
| 33:BA:746:A:C8    | 33:BA:746:A:C3'   | 2.97                     | 0.46              |
| 33:BA:754:C:H2'   | 33:BA:754:C:O2    | 2.14                     | 0.46              |
| 33:BA:774:G:C4    | 33:BA:775:G:N7    | 2.83                     | 0.46              |
| 33:BA:797:C:OP1   | 43:BK:125:LYS:HG2 | 2.15                     | 0.46              |
| 33:BA:1043:G:C2   | 33:BA:1044:A:C5   | 3.02                     | 0.46              |
| 33:BA:1194:U:C2   | 33:BA:1195:C:C5   | 3.03                     | 0.46              |
| 33:BA:1236:A:H4'  | 33:BA:1304:G:H4'  | 1.96                     | 0.46              |
| 33:BA:1412:C:N3   | 33:BA:1488:G:O6   | 2.48                     | 0.46              |
| 33:BA:1415:G:H2'  | 33:BA:1416:G:H8   | 1.80                     | 0.46              |
| 34:BB:73:ARG:HA   | 34:BB:73:ARG:HD2  | 1.70                     | 0.46              |
| 35:BC:14:VAL:HG21 | 35:BC:177:LEU:O   | 2.15                     | 0.46              |
| 38:BF:6:ILE:O     | 38:BF:6:ILE:HG13  | 2.14                     | 0.46              |
| 40:BH:94:VAL:O    | 40:BH:96:ALA:N    | 2.48                     | 0.46              |
| 43:BK:124:LYS:O   | 53:BU:33:ARG:NE   | 2.48                     | 0.46              |
| 44:BL:21:PRO:CD   | 44:BL:94:TYR:OH   | 2.63                     | 0.46              |
| 46:BN:92:ILE:HA   | 46:BN:93:PRO:HD2  | 1.71                     | 0.46              |
| 2:C1:36:LYS:NZ    | 8:CB:2344:U:C4    | 2.84                     | 0.46              |
| 4:C3:7:ARG:NH1    | 8:CB:250:G:P      | 2.87                     | 0.46              |
| 5:C4:2:LYS:CD     | 8:CB:2526:G:H1'   | 2.45                     | 0.46              |
| 7:CA:33:G:C2      | 7:CA:34:A:C4      | 3.04                     | 0.46              |
| 8:CB:187:G:H2'    | 8:CB:188:G:O5'    | 2.15                     | 0.46              |
| 8:CB:382:A:H2     | 8:CB:383:C:H1'    | 1.80                     | 0.46              |
| 8:CB:386:G:H2'    | 8:CB:386:G:H5'    | 1.66                     | 0.46              |
| 8:CB:452:G:N2     | 8:CB:458:G:C4     | 2.83                     | 0.46              |
| 8:CB:599:A:C2     | 8:CB:659:G:N1     | 2.83                     | 0.46              |
| 8:CB:725:G:H8     | 8:CB:725:G:O5'    | 1.98                     | 0.46              |
| 8:CB:816:C:N4     | 8:CB:1192:G:C6    | 2.84                     | 0.46              |
| 8:CB:867:C:H2'    | 8:CB:868:U:C5'    | 2.45                     | 0.46              |
| 8:CB:965:C:H6     | 8:CB:965:C:H5''   | 1.79                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:990:A:H5'    | 8:CB:990:A:C8     | 2.48                     | 0.46              |
| 8:CB:1088:A:N6    | 15:CI:92:PRO:HB3  | 2.28                     | 0.46              |
| 8:CB:1258:U:H4'   | 11:CE:79:ARG:HD3  | 1.97                     | 0.46              |
| 8:CB:1281:G:H3'   | 8:CB:1281:G:C8    | 2.50                     | 0.46              |
| 8:CB:1410:G:N3    | 8:CB:1410:G:H2'   | 2.30                     | 0.46              |
| 8:CB:1439:A:H2'   | 8:CB:1440:U:H5'   | 1.97                     | 0.46              |
| 8:CB:1768:C:H3'   | 8:CB:1768:C:H6    | 1.76                     | 0.46              |
| 8:CB:1820:U:C5    | 9:CC:158:GLY:CA   | 2.88                     | 0.46              |
| 8:CB:1861:G:C8    | 8:CB:1861:G:C5'   | 2.96                     | 0.46              |
| 8:CB:1885:A:H2'   | 8:CB:1886:U:H6    | 1.78                     | 0.46              |
| 8:CB:2034:U:O2'   | 8:CB:2035:G:O5'   | 2.31                     | 0.46              |
| 8:CB:2186:G:C6    | 8:CB:2187:U:O2    | 2.67                     | 0.46              |
| 8:CB:2360:G:H8    | 8:CB:2360:G:H3'   | 1.80                     | 0.46              |
| 8:CB:2412:A:C8    | 8:CB:2413:G:C8    | 3.04                     | 0.46              |
| 8:CB:2415:G:C4    | 8:CB:2416:C:C5    | 3.03                     | 0.46              |
| 8:CB:2447:G:N3    | 8:CB:2501:C:C4    | 2.83                     | 0.46              |
| 8:CB:2454:G:O2'   | 8:CB:2455:G:H5'   | 2.15                     | 0.46              |
| 8:CB:2478:A:H8    | 8:CB:2478:A:C5'   | 2.14                     | 0.46              |
| 8:CB:2571:U:O2'   | 8:CB:2572:A:P     | 2.72                     | 0.46              |
| 9:CC:141:HIS:HE1  | 9:CC:156:SER:OG   | 1.98                     | 0.46              |
| 10:CD:29:VAL:O    | 10:CD:30:GLU:O    | 2.32                     | 0.46              |
| 10:CD:29:VAL:C    | 10:CD:51:THR:HG21 | 2.34                     | 0.46              |
| 10:CD:37:VAL:HG22 | 10:CD:42:ASN:OD1  | 2.15                     | 0.46              |
| 10:CD:206:ALA:O   | 10:CD:208:LYS:N   | 2.48                     | 0.46              |
| 11:CE:9:GLN:C     | 11:CE:11:ALA:N    | 2.69                     | 0.46              |
| 12:CF:16:MET:HE3  | 12:CF:21:TYR:HB2  | 1.97                     | 0.46              |
| 14:CH:3:VAL:H     | 14:CH:21:VAL:CG1  | 2.22                     | 0.46              |
| 14:CH:65:ALA:HA   | 14:CH:68:ARG:HB3  | 1.97                     | 0.46              |
| 17:CK:49:ARG:HB3  | 17:CK:50:GLY:H    | 1.51                     | 0.46              |
| 17:CK:61:VAL:HG11 | 17:CK:112:PHE:CE2 | 2.50                     | 0.46              |
| 18:CL:21:ARG:O    | 18:CL:22:GLY:C    | 2.54                     | 0.46              |
| 18:CL:38:GLN:CD   | 18:CL:39:LYS:HG2  | 2.35                     | 0.46              |
| 20:CN:46:ARG:O    | 20:CN:50:PRO:HG2  | 2.16                     | 0.46              |
| 21:CO:104:GLN:O   | 21:CO:107:ALA:HB3 | 2.15                     | 0.46              |
| 23:CQ:38:VAL:O    | 23:CQ:43:GLN:N    | 2.46                     | 0.46              |
| 25:CS:9:HIS:ND1   | 25:CS:9:HIS:N     | 2.63                     | 0.46              |
| 26:CT:70:HIS:HB3  | 26:CT:74:ILE:HG21 | 1.97                     | 0.46              |
| 27:CU:84:PHE:H    | 27:CU:92:VAL:CG2  | 2.27                     | 0.46              |
| 29:CW:22:VAL:O    | 29:CW:23:LYS:HG3  | 2.15                     | 0.46              |
| 31:CY:16:LEU:O    | 31:CY:19:HIS:HB2  | 2.14                     | 0.46              |
| 31:CY:38:GLU:O    | 31:CY:40:THR:HG22 | 2.14                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:292:G:N7    | 33:DA:293:G:C1'    | 2.78                     | 0.46              |
| 33:DA:522:C:H41   | 44:DL:49:ARG:NH2   | 2.13                     | 0.46              |
| 33:DA:639:G:C2    | 33:DA:640:A:C8     | 3.03                     | 0.46              |
| 33:DA:861:G:O5'   | 33:DA:861:G:C8     | 2.54                     | 0.46              |
| 33:DA:918:A:C5    | 33:DA:919:A:N7     | 2.83                     | 0.46              |
| 33:DA:1007:U:O2   | 33:DA:1008:U:C4    | 2.68                     | 0.46              |
| 33:DA:1171:A:C2   | 33:DA:1172:C:C2    | 3.04                     | 0.46              |
| 33:DA:1241:G:N2   | 33:DA:1242:G:C5    | 2.83                     | 0.46              |
| 33:DA:1435:G:C5   | 33:DA:1436:U:C5    | 3.03                     | 0.46              |
| 35:DC:22:PHE:CZ   | 42:DJ:69:THR:HG23  | 2.50                     | 0.46              |
| 35:DC:171:ARG:C   | 35:DC:172:VAL:CG2  | 2.84                     | 0.46              |
| 36:DD:90:LEU:HG   | 36:DD:187:ARG:HH11 | 1.80                     | 0.46              |
| 37:DE:80:LEU:O    | 37:DE:97:PRO:HB3   | 2.15                     | 0.46              |
| 37:DE:110:MET:HE2 | 37:DE:110:MET:HB3  | 1.84                     | 0.46              |
| 43:DK:95:THR:HG23 | 43:DK:96:ILE:N     | 2.30                     | 0.46              |
| 44:DL:47:ALA:O    | 44:DL:48:LEU:HD23  | 2.14                     | 0.46              |
| 45:DM:72:ILE:HA   | 45:DM:75:SER:OG    | 2.15                     | 0.46              |
| 45:DM:100:ARG:NH1 | 45:DM:102:LYS:HE3  | 2.30                     | 0.46              |
| 47:DO:35:ILE:HD12 | 47:DO:55:LEU:CD1   | 2.45                     | 0.46              |
| 47:DO:72:LYS:O    | 47:DO:73:ASP:CB    | 2.62                     | 0.46              |
| 49:DQ:64:ARG:CG   | 49:DQ:64:ARG:O     | 2.62                     | 0.46              |
| 51:DS:11:ASP:O    | 51:DS:15:LEU:HB2   | 2.15                     | 0.46              |
| 53:DU:18:PHE:CD1  | 53:DU:18:PHE:O     | 2.68                     | 0.46              |
| 7:AA:70:C:H2'     | 7:AA:71:C:C6       | 2.51                     | 0.46              |
| 7:AA:99:A:C5      | 7:AA:100:G:C8      | 3.03                     | 0.46              |
| 7:AA:105:G:H2'    | 7:AA:106:G:H8      | 1.79                     | 0.46              |
| 7:AA:105:G:C5     | 7:AA:106:G:N7      | 2.83                     | 0.46              |
| 8:AB:72:U:O2'     | 8:AB:73:A:H5'      | 2.15                     | 0.46              |
| 8:AB:160:A:H2'    | 8:AB:161:A:H8      | 1.79                     | 0.46              |
| 8:AB:337:C:H2'    | 8:AB:338:G:O5'     | 2.15                     | 0.46              |
| 8:AB:664:G:C2'    | 8:AB:665:U:H5'     | 2.45                     | 0.46              |
| 8:AB:976:G:H2'    | 8:AB:977:G:C8      | 2.41                     | 0.46              |
| 8:AB:999:U:C5     | 8:AB:1154:G:C5     | 3.03                     | 0.46              |
| 8:AB:1010:A:C2'   | 8:AB:1011:G:O5'    | 2.62                     | 0.46              |
| 8:AB:1232:G:C6    | 8:AB:1233:C:C4     | 3.03                     | 0.46              |
| 8:AB:1397:U:O2'   | 8:AB:1398:C:H5'    | 2.16                     | 0.46              |
| 8:AB:1677:A:N1    | 8:AB:1678:A:C2     | 2.83                     | 0.46              |
| 8:AB:1769:U:O2    | 8:AB:1984:G:C2     | 2.68                     | 0.46              |
| 8:AB:1796:U:O2'   | 9:AC:251:THR:N     | 2.49                     | 0.46              |
| 8:AB:1873:G:C5    | 8:AB:1874:C:C5     | 3.04                     | 0.46              |
| 8:AB:2016:U:HO2'  | 8:AB:2017:U:P      | 2.36                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2107:G:C6    | 8:AB:2108:A:N7     | 2.84                     | 0.46              |
| 8:AB:2194:U:H2'   | 8:AB:2195:U:H6     | 1.81                     | 0.46              |
| 8:AB:2196:C:O2'   | 8:AB:2197:U:H5'    | 2.15                     | 0.46              |
| 8:AB:2296:U:C2    | 8:AB:2333:A:C2     | 3.03                     | 0.46              |
| 8:AB:2353:G:O6    | 8:AB:2364:C:N3     | 2.48                     | 0.46              |
| 8:AB:2459:A:H2'   | 8:AB:2459:A:N3     | 2.29                     | 0.46              |
| 8:AB:2469:A:N6    | 8:AB:2470:G:C4     | 2.83                     | 0.46              |
| 8:AB:2560:A:C5    | 8:AB:2561:U:C4     | 3.04                     | 0.46              |
| 8:AB:2648:G:C4    | 8:AB:2673:G:C2     | 3.03                     | 0.46              |
| 8:AB:2692:G:H2'   | 8:AB:2693:G:C8     | 2.50                     | 0.46              |
| 8:AB:2704:C:H2'   | 8:AB:2705:A:H8     | 1.80                     | 0.46              |
| 8:AB:2850:A:C5    | 8:AB:2851:A:N7     | 2.84                     | 0.46              |
| 9:AC:164:VAL:CG2  | 9:AC:172:THR:HG22  | 2.40                     | 0.46              |
| 11:AE:46:GLN:NE2  | 11:AE:47:LYS:H     | 2.14                     | 0.46              |
| 13:AG:76:ILE:O    | 13:AG:80:GLU:HB2   | 2.15                     | 0.46              |
| 14:AH:3:VAL:CA    | 14:AH:39:ALA:HB2   | 2.44                     | 0.46              |
| 15:AI:108:ILE:O   | 15:AI:108:ILE:HG22 | 2.15                     | 0.46              |
| 16:AJ:34:ARG:HH11 | 16:AJ:39:LYS:HA    | 1.78                     | 0.46              |
| 17:AK:116:ILE:H   | 17:AK:116:ILE:HG12 | 1.28                     | 0.46              |
| 18:AL:76:GLU:HB3  | 18:AL:111:ILE:CG2  | 2.46                     | 0.46              |
| 18:AL:78:ARG:NH1  | 18:AL:78:ARG:O     | 2.48                     | 0.46              |
| 18:AL:91:ASP:O    | 18:AL:92:LEU:CB    | 2.63                     | 0.46              |
| 20:AN:27:SER:O    | 20:AN:30:ARG:N     | 2.49                     | 0.46              |
| 21:AO:48:LEU:CD2  | 21:AO:49:VAL:N     | 2.74                     | 0.46              |
| 21:AO:58:ILE:HG13 | 21:AO:63:LYS:HB3   | 1.98                     | 0.46              |
| 21:AO:111:ARG:HG2 | 21:AO:117:PHE:CE2  | 2.50                     | 0.46              |
| 23:AQ:35:PHE:O    | 23:AQ:39:ILE:N     | 2.49                     | 0.46              |
| 23:AQ:63:ARG:HH11 | 23:AQ:63:ARG:CB    | 2.17                     | 0.46              |
| 27:AU:40:LEU:HD22 | 27:AU:41:VAL:HG12  | 1.96                     | 0.46              |
| 27:AU:93:ARG:HB3  | 27:AU:94:PHE:H     | 1.54                     | 0.46              |
| 31:AY:2:LYS:C     | 31:AY:3:THR:HG22   | 2.35                     | 0.46              |
| 33:BA:55:A:C6     | 33:BA:56:U:N3      | 2.83                     | 0.46              |
| 33:BA:199:A:H2    | 33:BA:219:U:C2     | 2.33                     | 0.46              |
| 33:BA:233:C:H3'   | 33:BA:233:C:C6     | 2.50                     | 0.46              |
| 33:BA:406:G:C2    | 33:BA:407:U:C6     | 3.04                     | 0.46              |
| 33:BA:462:G:N3    | 33:BA:462:G:C2'    | 2.77                     | 0.46              |
| 33:BA:598:U:H2'   | 33:BA:599:C:C6     | 2.51                     | 0.46              |
| 33:BA:639:G:H2'   | 33:BA:640:A:H8     | 1.79                     | 0.46              |
| 33:BA:673:A:H2'   | 33:BA:674:G:C8     | 2.51                     | 0.46              |
| 33:BA:722:G:OP2   | 53:BU:44:ARG:NE    | 2.48                     | 0.46              |
| 33:BA:804:U:C4    | 33:BA:805:C:C5     | 3.03                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1051:C:OP2   | 33:BA:1051:C:H6    | 1.97                     | 0.46              |
| 33:BA:1061:G:H8    | 33:BA:1062:U:C5    | 2.30                     | 0.46              |
| 33:BA:1320:C:N4    | 51:BS:35:ARG:NH1   | 2.63                     | 0.46              |
| 33:BA:1513:A:C2    | 33:BA:1514:G:N3    | 2.83                     | 0.46              |
| 33:BA:1515:G:O2'   | 33:BA:1516:G:H5'   | 2.15                     | 0.46              |
| 35:BC:33:ASP:HB2   | 46:BN:64:ARG:NE    | 2.29                     | 0.46              |
| 38:BF:11:HIS:CE1   | 38:BF:12:PRO:HD2   | 2.51                     | 0.46              |
| 40:BH:103:VAL:HG12 | 40:BH:124:ILE:HG12 | 1.98                     | 0.46              |
| 43:BK:35:ASP:OD1   | 43:BK:39:ASN:N     | 2.49                     | 0.46              |
| 2:C1:14:ALA:HA     | 2:C1:48:TYR:CZ     | 2.50                     | 0.46              |
| 2:C1:14:ALA:HA     | 2:C1:48:TYR:CD1    | 2.50                     | 0.46              |
| 4:C3:12:ARG:HB3    | 4:C3:13:PHE:CD2    | 2.49                     | 0.46              |
| 4:C3:12:ARG:HD3    | 4:C3:23:HIS:HB2    | 1.96                     | 0.46              |
| 4:C3:23:HIS:N      | 4:C3:46:LYS:O      | 2.48                     | 0.46              |
| 8:CB:45:G:C5'      | 8:CB:46:G:H5'      | 2.45                     | 0.46              |
| 8:CB:53:A:H5''     | 8:CB:54:G:OP2      | 2.16                     | 0.46              |
| 8:CB:244:A:C2'     | 8:CB:245:G:O5'     | 2.60                     | 0.46              |
| 8:CB:371:A:H8      | 8:CB:373:U:C2      | 2.32                     | 0.46              |
| 8:CB:443:A:H2      | 8:CB:1245:G:N3     | 2.13                     | 0.46              |
| 8:CB:491:G:C5      | 8:CB:492:A:C5      | 3.03                     | 0.46              |
| 8:CB:565:C:N4      | 8:CB:566:U:O4      | 2.49                     | 0.46              |
| 8:CB:601:C:O2      | 8:CB:605:G:C4'     | 2.61                     | 0.46              |
| 8:CB:680:C:N3      | 8:CB:681:G:N7      | 2.63                     | 0.46              |
| 8:CB:811:U:O2      | 8:CB:1251:C:N1     | 2.48                     | 0.46              |
| 8:CB:925:A:C2      | 8:CB:926:G:C4      | 3.03                     | 0.46              |
| 8:CB:1005:C:O5'    | 8:CB:1005:C:H6     | 1.98                     | 0.46              |
| 8:CB:1019:U:H5''   | 8:CB:1020:A:OP2    | 2.15                     | 0.46              |
| 8:CB:1064:C:N3     | 8:CB:1074:G:N2     | 2.62                     | 0.46              |
| 8:CB:1142:A:H5''   | 8:CB:1142:A:H8     | 1.74                     | 0.46              |
| 8:CB:1169:A:C2     | 8:CB:1181:U:O2     | 2.68                     | 0.46              |
| 8:CB:1190:G:O2'    | 8:CB:1191:G:H5'    | 2.15                     | 0.46              |
| 8:CB:1225:G:P      | 24:CR:90:ARG:CZ    | 3.04                     | 0.46              |
| 8:CB:1286:A:C4     | 8:CB:1289:C:N4     | 2.83                     | 0.46              |
| 8:CB:1398:C:H2'    | 8:CB:1399:C:H6     | 1.81                     | 0.46              |
| 8:CB:1425:G:O2'    | 8:CB:1426:G:H5'    | 2.14                     | 0.46              |
| 8:CB:1635:A:H2'    | 8:CB:1636:U:H5'    | 1.96                     | 0.46              |
| 8:CB:1640:A:H2'    | 8:CB:1641:A:H8     | 1.76                     | 0.46              |
| 8:CB:1779:U:C6     | 8:CB:1783:A:N7     | 2.83                     | 0.46              |
| 8:CB:1861:G:N2     | 8:CB:1882:U:C2     | 2.83                     | 0.46              |
| 8:CB:1943:U:O2     | 8:CB:1943:U:O5'    | 2.32                     | 0.46              |
| 8:CB:1947:C:N3     | 8:CB:1948:G:N7     | 2.63                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1959:G:C2     | 8:CB:1960:A:C4     | 3.03                     | 0.46              |
| 8:CB:2045:C:C2     | 8:CB:2624:G:N2     | 2.84                     | 0.46              |
| 8:CB:2327:A:H5'    | 8:CB:2327:A:C8     | 2.51                     | 0.46              |
| 8:CB:2519:U:C4     | 8:CB:2542:A:N7     | 2.82                     | 0.46              |
| 8:CB:2562:U:OP1    | 17:CK:40:LYS:NZ    | 2.44                     | 0.46              |
| 8:CB:2674:G:H8     | 8:CB:2674:G:O5'    | 1.98                     | 0.46              |
| 8:CB:2692:G:N2     | 8:CB:2693:G:C4     | 2.84                     | 0.46              |
| 8:CB:2701:U:C6     | 8:CB:2701:U:C3'    | 2.98                     | 0.46              |
| 8:CB:2819:G:C5     | 8:CB:2821:A:C2     | 3.03                     | 0.46              |
| 9:CC:244:VAL:CG2   | 9:CC:245:THR:N     | 2.73                     | 0.46              |
| 11:CE:23:PHE:HA    | 11:CE:110:SER:O    | 2.15                     | 0.46              |
| 12:CF:109:ARG:HG2  | 12:CF:136:ILE:HA   | 1.96                     | 0.46              |
| 14:CH:26:ALA:HB1   | 14:CH:28:ASN:H     | 1.80                     | 0.46              |
| 16:CJ:7:LYS:HE3    | 16:CJ:47:HIS:CD2   | 2.49                     | 0.46              |
| 17:CK:21:CYS:SG    | 17:CK:22:ILE:N     | 2.88                     | 0.46              |
| 18:CL:110:VAL:O    | 18:CL:111:ILE:HD13 | 2.14                     | 0.46              |
| 18:CL:126:ARG:HD2  | 18:CL:126:ARG:C    | 2.31                     | 0.46              |
| 19:CM:55:ARG:C     | 19:CM:57:VAL:N     | 2.68                     | 0.46              |
| 20:CN:20:MET:HE3   | 20:CN:21:PHE:CE1   | 2.50                     | 0.46              |
| 23:CQ:13:HIS:CB    | 23:CQ:31:TYR:CE2   | 2.99                     | 0.46              |
| 25:CS:90:LYS:HD3   | 25:CS:90:LYS:HA    | 1.50                     | 0.46              |
| 27:CU:40:LEU:HD11  | 27:CU:57:ILE:HD11  | 1.98                     | 0.46              |
| 29:CW:43:LYS:N     | 29:CW:75:ASN:OD1   | 2.43                     | 0.46              |
| 33:DA:27:G:C8      | 33:DA:557:G:N2     | 2.84                     | 0.46              |
| 33:DA:370:C:C2     | 33:DA:371:A:C8     | 3.02                     | 0.46              |
| 33:DA:430:A:OP1    | 36:DD:8:LEU:CB     | 2.63                     | 0.46              |
| 33:DA:518:C:O4'    | 33:DA:529:G:N2     | 2.48                     | 0.46              |
| 33:DA:559:A:C5'    | 33:DA:560:A:H3'    | 2.45                     | 0.46              |
| 33:DA:794:A:C5     | 33:DA:795:C:N4     | 2.83                     | 0.46              |
| 33:DA:840:C:C4     | 33:DA:842:U:H4'    | 2.49                     | 0.46              |
| 33:DA:1077:G:H3'   | 33:DA:1077:G:C8    | 2.50                     | 0.46              |
| 33:DA:1334:G:H2'   | 33:DA:1335:U:H5'   | 1.96                     | 0.46              |
| 34:DB:57:ASN:HA    | 34:DB:220:VAL:HG13 | 1.96                     | 0.46              |
| 35:DC:195:ILE:HG22 | 35:DC:195:ILE:O    | 2.16                     | 0.46              |
| 37:DE:33:THR:HG23  | 37:DE:51:LYS:CD    | 2.39                     | 0.46              |
| 37:DE:47:PHE:HB2   | 37:DE:140:ILE:CD1  | 2.45                     | 0.46              |
| 37:DE:89:THR:HG23  | 37:DE:90:GLY:N     | 2.30                     | 0.46              |
| 37:DE:89:THR:O     | 37:DE:91:SER:N     | 2.48                     | 0.46              |
| 37:DE:105:ILE:HD12 | 37:DE:123:LEU:CD2  | 2.46                     | 0.46              |
| 40:DH:37:ASN:HD22  | 40:DH:40:LYS:HD3   | 1.81                     | 0.46              |
| 42:DJ:6:ILE:HG22   | 42:DJ:8:ILE:HG23   | 1.96                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:DJ:20:GLN:HE21 | 42:DJ:20:GLN:HB3  | 1.52                     | 0.46              |
| 43:DK:40:ALA:O    | 43:DK:41:LEU:HG   | 2.16                     | 0.46              |
| 51:DS:21:ALA:HA   | 51:DS:24:SER:OG   | 2.15                     | 0.46              |
| 52:DT:34:VAL:O    | 52:DT:37:ALA:HB3  | 2.14                     | 0.46              |
| 53:DU:39:LYS:O    | 53:DU:41:THR:N    | 2.41                     | 0.46              |
| 5:A4:15:LYS:HZ1   | 5:A4:24:ARG:HB3   | 1.78                     | 0.46              |
| 7:AA:41:G:OP1     | 7:AA:42:C:H5      | 1.99                     | 0.46              |
| 7:AA:83:G:C5      | 7:AA:84:G:C8      | 3.03                     | 0.46              |
| 7:AA:94:A:N7      | 7:AA:95:U:C4      | 2.83                     | 0.46              |
| 7:AA:104:A:H2'    | 7:AA:104:A:N3     | 2.31                     | 0.46              |
| 8:AB:72:U:H1'     | 30:AX:51:ALA:HB2  | 1.96                     | 0.46              |
| 8:AB:121:G:N3     | 8:AB:131:A:C2     | 2.83                     | 0.46              |
| 8:AB:136:G:C8     | 8:AB:137:U:H5     | 2.30                     | 0.46              |
| 8:AB:226:A:H2'    | 8:AB:227:A:C8     | 2.50                     | 0.46              |
| 8:AB:325:G:H8     | 8:AB:325:G:O5'    | 1.98                     | 0.46              |
| 8:AB:371:A:H8     | 8:AB:373:U:O2     | 1.99                     | 0.46              |
| 8:AB:396:G:C8     | 8:AB:396:G:C5'    | 2.93                     | 0.46              |
| 8:AB:517:C:H2'    | 8:AB:518:G:O5'    | 2.15                     | 0.46              |
| 8:AB:672:C:O2     | 8:AB:672:C:C2'    | 2.64                     | 0.46              |
| 8:AB:763:G:O2'    | 8:AB:764:A:H5'    | 2.15                     | 0.46              |
| 8:AB:780:G:N2     | 9:AC:228:ASP:OD2  | 2.47                     | 0.46              |
| 8:AB:797:G:C5     | 8:AB:798:G:C8     | 3.03                     | 0.46              |
| 8:AB:820:A:H2'    | 8:AB:821:A:O4'    | 2.15                     | 0.46              |
| 8:AB:845:A:N1     | 8:AB:847:U:H1'    | 2.30                     | 0.46              |
| 8:AB:905:A:N1     | 8:AB:906:U:C4     | 2.84                     | 0.46              |
| 8:AB:943:A:P      | 18:AL:42:SER:HB3  | 2.55                     | 0.46              |
| 8:AB:1092:C:H42   | 8:AB:1100:C:H42   | 1.63                     | 0.46              |
| 8:AB:1268:A:N6    | 8:AB:2013:A:C8    | 2.84                     | 0.46              |
| 8:AB:1420:A:N3    | 8:AB:2211:A:H8    | 2.10                     | 0.46              |
| 8:AB:1431:A:C2'   | 8:AB:1432:G:H5'   | 2.46                     | 0.46              |
| 8:AB:1745:A:H3'   | 8:AB:1746:A:H8    | 1.80                     | 0.46              |
| 8:AB:1797:G:H2'   | 8:AB:1798:U:H6    | 1.80                     | 0.46              |
| 8:AB:1989:G:C8    | 8:AB:1990:C:C5    | 3.02                     | 0.46              |
| 8:AB:2027:G:N2    | 8:AB:2028:U:C2    | 2.83                     | 0.46              |
| 8:AB:2243:U:O2    | 8:AB:2434:A:H2    | 1.98                     | 0.46              |
| 8:AB:2284:A:O5'   | 8:AB:2284:A:C8    | 2.67                     | 0.46              |
| 8:AB:2298:A:H2'   | 8:AB:2298:A:N3    | 2.30                     | 0.46              |
| 8:AB:2311:A:O2'   | 12:AF:84:ILE:HD11 | 2.16                     | 0.46              |
| 8:AB:2316:G:N3    | 8:AB:2317:A:C8    | 2.84                     | 0.46              |
| 8:AB:2361:G:H2'   | 8:AB:2362:C:C5'   | 2.45                     | 0.46              |
| 8:AB:2413:G:H2'   | 8:AB:2414:G:O4'   | 2.15                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2473:U:O2'    | 8:AB:2474:U:H5'    | 2.16                     | 0.46              |
| 8:AB:2589:A:C2     | 8:AB:2590:A:C8     | 3.04                     | 0.46              |
| 8:AB:2656:U:H2'    | 8:AB:2657:A:C8     | 2.50                     | 0.46              |
| 9:AC:123:ILE:HD12  | 9:AC:123:ILE:H     | 1.79                     | 0.46              |
| 9:AC:124:LYS:H     | 9:AC:191:LEU:HD21  | 1.80                     | 0.46              |
| 9:AC:171:VAL:HG12  | 9:AC:183:VAL:C     | 2.35                     | 0.46              |
| 10:AD:100:LEU:HG   | 10:AD:100:LEU:O    | 2.15                     | 0.46              |
| 10:AD:149:ASN:O    | 10:AD:151:THR:HG23 | 2.15                     | 0.46              |
| 11:AE:163:ASN:O    | 11:AE:165:HIS:N    | 2.48                     | 0.46              |
| 11:AE:165:HIS:C    | 11:AE:166:LYS:HD2  | 2.36                     | 0.46              |
| 12:AF:140:ILE:HG22 | 12:AF:142:TYR:N    | 2.30                     | 0.46              |
| 14:AH:26:ALA:HA    | 14:AH:30:LEU:N     | 2.30                     | 0.46              |
| 15:AI:120:ASP:HB2  | 15:AI:123:ALA:H    | 1.81                     | 0.46              |
| 16:AJ:44:TYR:O     | 16:AJ:45:THR:C     | 2.53                     | 0.46              |
| 16:AJ:81:ILE:C     | 16:AJ:83:GLY:H     | 2.18                     | 0.46              |
| 19:AM:53:MET:HG2   | 19:AM:53:MET:O     | 2.16                     | 0.46              |
| 19:AM:71:LYS:HZ3   | 19:AM:91:TYR:HB3   | 1.80                     | 0.46              |
| 19:AM:133:LYS:O    | 28:AV:79:ARG:NH1   | 2.48                     | 0.46              |
| 25:AS:23:LEU:HB3   | 25:AS:35:ILE:HD11  | 1.97                     | 0.46              |
| 25:AS:91:GLY:O     | 25:AS:92:ARG:C     | 2.53                     | 0.46              |
| 29:AW:11:ASN:OD1   | 29:AW:12:GLY:N     | 2.41                     | 0.46              |
| 33:BA:57:G:O5'     | 33:BA:57:G:H8      | 1.97                     | 0.46              |
| 33:BA:243:A:C2     | 33:BA:246:A:C8     | 3.04                     | 0.46              |
| 33:BA:373:A:C2     | 33:BA:482:A:N6     | 2.83                     | 0.46              |
| 33:BA:448:A:N7     | 33:BA:487:A:C6     | 2.83                     | 0.46              |
| 33:BA:502:A:C2     | 33:BA:544:G:C6     | 3.04                     | 0.46              |
| 33:BA:564:C:N4     | 33:BA:565:U:C4     | 2.84                     | 0.46              |
| 33:BA:582:C:C2     | 33:BA:760:G:O6     | 2.68                     | 0.46              |
| 33:BA:774:G:N7     | 33:BA:775:G:O6     | 2.49                     | 0.46              |
| 33:BA:868:C:O2'    | 33:BA:869:G:H5'    | 2.15                     | 0.46              |
| 33:BA:884:U:H6     | 33:BA:884:U:H2'    | 1.44                     | 0.46              |
| 33:BA:1000:A:C8    | 33:BA:1000:A:O5'   | 2.67                     | 0.46              |
| 33:BA:1031:C:H6    | 33:BA:1031:C:H5''  | 1.80                     | 0.46              |
| 33:BA:1134:G:C2    | 33:BA:1141:C:C2    | 3.03                     | 0.46              |
| 33:BA:1353:G:N3    | 33:BA:1353:G:H2'   | 2.30                     | 0.46              |
| 35:BC:5:HIS:CE1    | 35:BC:183:TYR:HE2  | 2.33                     | 0.46              |
| 35:BC:38:VAL:HG12  | 35:BC:93:ILE:HD13  | 1.96                     | 0.46              |
| 36:BD:9:LYS:NZ     | 36:BD:9:LYS:HB2    | 2.28                     | 0.46              |
| 36:BD:57:LYS:HZ3   | 36:BD:58:GLN:HE21  | 1.58                     | 0.46              |
| 37:BE:115:GLU:C    | 37:BE:117:ALA:H    | 2.18                     | 0.46              |
| 37:BE:148:SER:C    | 37:BE:150:GLU:N    | 2.69                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BG:111:GLY:CA  | 39:BG:118:ARG:HH11 | 2.22                     | 0.46              |
| 40:BH:41:GLU:O    | 40:BH:41:GLU:CD    | 2.53                     | 0.46              |
| 42:BJ:42:LEU:HB3  | 42:BJ:43:PRO:HD2   | 1.97                     | 0.46              |
| 44:BL:107:LYS:HD2 | 44:BL:107:LYS:N    | 2.29                     | 0.46              |
| 47:BO:55:LEU:O    | 47:BO:58:MET:HB3   | 2.15                     | 0.46              |
| 48:BP:57:ILE:O    | 48:BP:57:ILE:HG22  | 2.14                     | 0.46              |
| 49:BQ:23:ALA:C    | 49:BQ:24:ILE:HD12  | 2.35                     | 0.46              |
| 53:BU:39:LYS:N    | 53:BU:40:PRO:CD    | 2.78                     | 0.46              |
| 2:C1:13:SER:O     | 2:C1:48:TYR:CD2    | 2.68                     | 0.46              |
| 3:C2:42:LEU:HD12  | 3:C2:42:LEU:HA     | 1.63                     | 0.46              |
| 4:C3:4:LYS:NZ     | 4:C3:61:LEU:H      | 2.14                     | 0.46              |
| 7:CA:51:G:H1      | 21:CO:33:ARG:HH22  | 1.63                     | 0.46              |
| 8:CB:12:U:O2      | 8:CB:12:U:H2'      | 2.14                     | 0.46              |
| 8:CB:149:A:O2'    | 8:CB:150:U:H5'     | 2.15                     | 0.46              |
| 8:CB:345:A:C2     | 8:CB:347:A:C6      | 3.03                     | 0.46              |
| 8:CB:470:A:N1     | 8:CB:471:A:C2      | 2.82                     | 0.46              |
| 8:CB:537:G:C6     | 8:CB:555:G:N2      | 2.84                     | 0.46              |
| 8:CB:559:G:H2'    | 8:CB:560:C:H6      | 1.81                     | 0.46              |
| 8:CB:566:U:O2     | 8:CB:576:U:O2      | 2.33                     | 0.46              |
| 8:CB:570:G:N9     | 8:CB:2030:A:N7     | 2.63                     | 0.46              |
| 8:CB:839:U:C2     | 8:CB:940:G:N1      | 2.83                     | 0.46              |
| 8:CB:948:C:P      | 55:CB:5188:HOH:O   | 2.73                     | 0.46              |
| 8:CB:992:C:C2'    | 8:CB:993:G:H5'     | 2.46                     | 0.46              |
| 8:CB:993:G:N2     | 8:CB:1162:G:N3     | 2.63                     | 0.46              |
| 8:CB:1038:G:C2    | 8:CB:1039:A:C5     | 3.03                     | 0.46              |
| 8:CB:1055:G:H8    | 8:CB:1055:G:OP2    | 1.97                     | 0.46              |
| 8:CB:1348:C:H5''  | 8:CB:1348:C:H6     | 1.80                     | 0.46              |
| 8:CB:1609:A:N1    | 8:CB:1616:A:C5     | 2.84                     | 0.46              |
| 8:CB:1707:G:N7    | 8:CB:1756:G:C5     | 2.83                     | 0.46              |
| 8:CB:1788:C:C2'   | 8:CB:1789:A:H5'    | 2.45                     | 0.46              |
| 8:CB:2026:U:H5''  | 8:CB:2027:G:OP2    | 2.15                     | 0.46              |
| 8:CB:2090:A:N6    | 8:CB:2091:C:H42    | 2.14                     | 0.46              |
| 8:CB:2211:A:O2'   | 8:CB:2212:A:P      | 2.73                     | 0.46              |
| 8:CB:2656:U:H2'   | 8:CB:2657:A:C8     | 2.50                     | 0.46              |
| 8:CB:2872:A:O2'   | 8:CB:2873:A:C5'    | 2.58                     | 0.46              |
| 9:CC:45:ASN:OD1   | 9:CC:46:GLY:N      | 2.48                     | 0.46              |
| 9:CC:180:MET:O    | 9:CC:264:LYS:O     | 2.34                     | 0.46              |
| 10:CD:37:VAL:HG21 | 10:CD:46:ARG:CZ    | 2.46                     | 0.46              |
| 10:CD:124:ARG:C   | 10:CD:160:LYS:HG2  | 2.35                     | 0.46              |
| 12:CF:63:LYS:HA   | 12:CF:64:PRO:HD3   | 1.78                     | 0.46              |
| 14:CH:53:GLU:HG2  | 14:CH:57:LYS:HE2   | 1.98                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:CJ:32:LEU:HD22 | 16:CJ:122:LEU:HD21 | 1.97                     | 0.46              |
| 17:CK:16:ALA:O    | 17:CK:17:ARG:O     | 2.34                     | 0.46              |
| 17:CK:108:ARG:HA  | 17:CK:116:ILE:CD1  | 2.45                     | 0.46              |
| 18:CL:109:LYS:HA  | 18:CL:126:ARG:CB   | 2.44                     | 0.46              |
| 19:CM:18:ARG:H    | 19:CM:18:ARG:CD    | 2.27                     | 0.46              |
| 19:CM:42:THR:HG23 | 19:CM:45:GLN:NE2   | 2.30                     | 0.46              |
| 19:CM:74:THR:HG21 | 19:CM:85:GLY:HA2   | 1.97                     | 0.46              |
| 23:CQ:34:ALA:O    | 23:CQ:37:ALA:HB3   | 2.16                     | 0.46              |
| 25:CS:19:LEU:O    | 25:CS:20:VAL:C     | 2.53                     | 0.46              |
| 25:CS:83:LYS:HB2  | 25:CS:83:LYS:HZ3   | 1.77                     | 0.46              |
| 26:CT:20:ALA:O    | 26:CT:21:SER:HB2   | 2.15                     | 0.46              |
| 27:CU:10:VAL:HG22 | 27:CU:22:GLY:O     | 2.15                     | 0.46              |
| 27:CU:87:GLU:O    | 27:CU:88:ASP:C     | 2.53                     | 0.46              |
| 28:CV:70:ILE:CD1  | 28:CV:70:ILE:H     | 2.28                     | 0.46              |
| 32:CZ:48:GLN:NE2  | 32:CZ:49:ARG:N     | 2.64                     | 0.46              |
| 33:DA:9:G:N7      | 33:DA:10:A:N7      | 2.63                     | 0.46              |
| 33:DA:46:G:C2     | 33:DA:366:A:C8     | 3.03                     | 0.46              |
| 33:DA:197:A:C6    | 33:DA:221:C:H5'    | 2.50                     | 0.46              |
| 33:DA:467:U:H6    | 33:DA:467:U:C3'    | 2.27                     | 0.46              |
| 33:DA:538:G:H5''  | 44:DL:110:LYS:NZ   | 2.31                     | 0.46              |
| 33:DA:545:C:O2'   | 33:DA:546:A:H5'    | 2.16                     | 0.46              |
| 33:DA:551:U:C2'   | 33:DA:552:U:C6     | 2.97                     | 0.46              |
| 33:DA:560:A:H4'   | 33:DA:561:U:H5''   | 1.98                     | 0.46              |
| 33:DA:581:G:N2    | 33:DA:582:C:N4     | 2.62                     | 0.46              |
| 33:DA:791:G:H5''  | 33:DA:792:A:OP2    | 2.15                     | 0.46              |
| 33:DA:951:G:H3'   | 33:DA:952:U:C5     | 2.49                     | 0.46              |
| 33:DA:1077:G:N2   | 33:DA:1081:A:C2    | 2.83                     | 0.46              |
| 33:DA:1371:G:OP2  | 41:DI:110:VAL:HG21 | 2.15                     | 0.46              |
| 33:DA:1503:A:O4'  | 33:DA:1531:A:N3    | 2.47                     | 0.46              |
| 35:DC:67:ILE:HD12 | 35:DC:68:HIS:H     | 1.81                     | 0.46              |
| 35:DC:159:ALA:HB1 | 35:DC:161:ILE:HD12 | 1.96                     | 0.46              |
| 43:DK:16:SER:HA   | 43:DK:78:ILE:HG22  | 1.94                     | 0.46              |
| 43:DK:81:LEU:CD1  | 43:DK:104:PHE:CD1  | 2.98                     | 0.46              |
| 48:DP:2:VAL:O     | 48:DP:66:THR:N     | 2.48                     | 0.46              |
| 52:DT:13:SER:O    | 52:DT:16:ALA:HB3   | 2.15                     | 0.46              |
| 5:A4:15:LYS:CD    | 5:A4:26:ILE:CG1    | 2.84                     | 0.46              |
| 5:A4:23:ILE:HG12  | 5:A4:37:GLN:HG2    | 1.97                     | 0.46              |
| 7:AA:106:G:H5''   | 7:AA:107:G:OP2     | 2.15                     | 0.46              |
| 8:AB:5:A:H5''     | 8:AB:6:A:OP2       | 2.15                     | 0.46              |
| 8:AB:20:C:O2'     | 8:AB:21:A:H5'      | 2.15                     | 0.46              |
| 8:AB:90:U:H2'     | 8:AB:90:U:O2       | 2.15                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:246:C:H42    | 8:AB:252:G:H22     | 1.63                     | 0.46              |
| 8:AB:311:A:H4'    | 8:AB:312:G:OP2     | 2.15                     | 0.46              |
| 8:AB:407:G:N2     | 8:AB:421:C:C2      | 2.83                     | 0.46              |
| 8:AB:585:G:C2     | 8:AB:1251:C:N3     | 2.84                     | 0.46              |
| 8:AB:622:G:C6     | 8:AB:623:C:C4      | 3.03                     | 0.46              |
| 8:AB:627:A:C6     | 8:AB:637:A:C8      | 3.03                     | 0.46              |
| 8:AB:682:G:H2'    | 8:AB:683:U:H6      | 1.79                     | 0.46              |
| 8:AB:898:C:N3     | 8:AB:899:A:N6      | 2.64                     | 0.46              |
| 8:AB:968:C:C6     | 8:AB:968:C:C3'     | 2.98                     | 0.46              |
| 8:AB:969:G:N2     | 8:AB:970:U:C2      | 2.83                     | 0.46              |
| 8:AB:1026:G:C5    | 8:AB:1134:A:C6     | 3.03                     | 0.46              |
| 8:AB:1066:U:H2'   | 8:AB:1068:G:OP2    | 2.14                     | 0.46              |
| 8:AB:1295:C:O2'   | 8:AB:1296:G:H5'    | 2.14                     | 0.46              |
| 8:AB:1322:A:H4'   | 25:AS:82:MET:CE    | 2.45                     | 0.46              |
| 8:AB:1407:G:N1    | 8:AB:1596:A:C2     | 2.84                     | 0.46              |
| 8:AB:1593:A:C6    | 8:AB:1594:U:C4     | 3.04                     | 0.46              |
| 8:AB:2024:G:C5    | 8:AB:2025:C:C5     | 3.04                     | 0.46              |
| 8:AB:2199:A:C2    | 8:AB:2225:A:C2     | 3.03                     | 0.46              |
| 8:AB:2294:G:C6    | 8:AB:2295:C:C5     | 3.03                     | 0.46              |
| 8:AB:2300:C:H3'   | 8:AB:2300:C:C6     | 2.50                     | 0.46              |
| 8:AB:2341:G:C8    | 8:AB:2342:C:C5     | 3.04                     | 0.46              |
| 8:AB:2466:C:H2'   | 8:AB:2467:C:H6     | 1.80                     | 0.46              |
| 8:AB:2515:C:H2'   | 8:AB:2516:A:H8     | 1.81                     | 0.46              |
| 8:AB:2550:G:C2    | 8:AB:2559:C:O2     | 2.69                     | 0.46              |
| 8:AB:2574:G:C2    | 8:AB:2575:C:C2     | 3.02                     | 0.46              |
| 8:AB:2592:G:C5'   | 8:AB:2593:U:OP2    | 2.54                     | 0.46              |
| 8:AB:2692:G:N2    | 8:AB:2693:G:C4     | 2.83                     | 0.46              |
| 8:AB:2900:A:N7    | 8:AB:2901:C:C5     | 2.83                     | 0.46              |
| 9:AC:70:LYS:HB2   | 9:AC:101:ARG:NH2   | 2.30                     | 0.46              |
| 9:AC:106:PRO:HD2  | 9:AC:109:LEU:CD2   | 2.46                     | 0.46              |
| 9:AC:125:PRO:HA   | 9:AC:192:GLY:HA2   | 1.96                     | 0.46              |
| 9:AC:141:HIS:O    | 9:AC:142:ASN:C     | 2.52                     | 0.46              |
| 9:AC:219:VAL:C    | 9:AC:220:ARG:HD2   | 2.36                     | 0.46              |
| 10:AD:8:LYS:O     | 10:AD:9:VAL:O      | 2.34                     | 0.46              |
| 11:AE:118:LEU:O   | 11:AE:119:ILE:HG23 | 2.16                     | 0.46              |
| 11:AE:139:LYS:HZ2 | 11:AE:139:LYS:HG3  | 1.46                     | 0.46              |
| 11:AE:172:ALA:O   | 11:AE:201:ALA:CA   | 2.63                     | 0.46              |
| 14:AH:31:VAL:CB   | 14:AH:32:PRO:CD    | 2.94                     | 0.46              |
| 15:AI:96:LYS:CE   | 15:AI:138:VAL:HG21 | 2.44                     | 0.46              |
| 16:AJ:5:THR:CG2   | 16:AJ:45:THR:OG1   | 2.52                     | 0.46              |
| 18:AL:78:ARG:NH1  | 18:AL:78:ARG:HG3   | 2.30                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 21:AO:45:SER:CB    | 21:AO:47:VAL:HG22 | 2.37                     | 0.46              |
| 24:AR:5:PHE:CD1    | 24:AR:40:MET:CB   | 2.91                     | 0.46              |
| 24:AR:36:ALA:HB1   | 24:AR:62:GLU:O    | 2.15                     | 0.46              |
| 24:AR:84:ARG:CG    | 24:AR:84:ARG:O    | 2.64                     | 0.46              |
| 26:AT:41:ALA:C     | 26:AT:43:ILE:H    | 2.19                     | 0.46              |
| 26:AT:55:VAL:CG1   | 26:AT:56:GLU:N    | 2.79                     | 0.46              |
| 26:AT:88:LYS:C     | 26:AT:90:GLY:H    | 2.19                     | 0.46              |
| 33:BA:104:G:N2     | 33:BA:105:G:C5    | 2.83                     | 0.46              |
| 33:BA:225:C:C5     | 33:BA:226:G:C8    | 3.04                     | 0.46              |
| 33:BA:257:G:H5''   | 33:BA:257:G:H8    | 1.80                     | 0.46              |
| 33:BA:403:C:H2'    | 33:BA:404:G:H8    | 1.80                     | 0.46              |
| 33:BA:448:A:H2'    | 33:BA:449:G:O4'   | 2.15                     | 0.46              |
| 33:BA:501:C:H3'    | 33:BA:501:C:C6    | 2.51                     | 0.46              |
| 33:BA:518:C:C6     | 33:BA:530:G:C4    | 3.04                     | 0.46              |
| 33:BA:784:A:C6     | 33:BA:799:G:N1    | 2.84                     | 0.46              |
| 33:BA:833:G:N2     | 33:BA:854:U:C1'   | 2.79                     | 0.46              |
| 33:BA:923:A:O2'    | 33:BA:1399:C:OP2  | 2.33                     | 0.46              |
| 33:BA:949:A:C2     | 33:BA:950:U:C2    | 3.04                     | 0.46              |
| 33:BA:1278:G:H5''  | 33:BA:1278:G:C8   | 2.51                     | 0.46              |
| 33:BA:1459:G:C4    | 33:BA:1460:C:C6   | 3.03                     | 0.46              |
| 33:BA:1484:C:O2'   | 33:BA:1485:U:C5'  | 2.63                     | 0.46              |
| 37:BE:25:LYS:HE2   | 37:BE:25:LYS:HA   | 1.96                     | 0.46              |
| 39:BG:128:GLU:O    | 39:BG:129:ASN:HB2 | 2.15                     | 0.46              |
| 40:BH:45:ILE:CD1   | 40:BH:48:PHE:HD1  | 2.29                     | 0.46              |
| 40:BH:100:ILE:HG12 | 40:BH:128:VAL:HB  | 1.95                     | 0.46              |
| 48:BP:28:ARG:HG3   | 48:BP:29:ASN:H    | 1.80                     | 0.46              |
| 49:BQ:4:ILE:HB     | 49:BQ:5:ARG:H     | 1.45                     | 0.46              |
| 52:BT:61:ALA:O     | 52:BT:67:HIS:CE1  | 2.69                     | 0.46              |
| 5:C4:16:ILE:CG1    | 5:C4:17:VAL:HG12  | 2.43                     | 0.46              |
| 7:CA:29:A:C2       | 7:CA:56:G:N1      | 2.82                     | 0.46              |
| 8:CB:11:C:N4       | 8:CB:2629:U:N3    | 2.63                     | 0.46              |
| 8:CB:136:G:P       | 8:CB:136:G:H8     | 2.39                     | 0.46              |
| 8:CB:322:A:OP2     | 8:CB:322:A:H2'    | 2.15                     | 0.46              |
| 8:CB:378:C:C3'     | 8:CB:379:G:H5'    | 2.44                     | 0.46              |
| 8:CB:556:A:H2      | 8:CB:557:C:C1'    | 2.28                     | 0.46              |
| 8:CB:616:A:C2      | 8:CB:617:G:C4     | 3.04                     | 0.46              |
| 8:CB:725:G:C5      | 8:CB:726:G:C6     | 3.03                     | 0.46              |
| 8:CB:743:A:H2'     | 8:CB:744:U:H5'    | 1.96                     | 0.46              |
| 8:CB:1358:G:H8     | 8:CB:1358:G:O5'   | 1.98                     | 0.46              |
| 8:CB:1558:C:H4'    | 8:CB:1559:U:H5'   | 1.98                     | 0.46              |
| 8:CB:1567:G:N7     | 9:CC:82:TYR:CD2   | 2.84                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1624:U:O2'   | 8:CB:1625:C:H5'   | 2.15                     | 0.46              |
| 8:CB:1788:C:N4    | 8:CB:1789:A:C5    | 2.83                     | 0.46              |
| 8:CB:1788:C:O2'   | 8:CB:1789:A:H5'   | 2.16                     | 0.46              |
| 8:CB:1809:A:C6    | 8:CB:1810:A:N6    | 2.83                     | 0.46              |
| 8:CB:1885:A:H2'   | 8:CB:1886:U:O4'   | 2.16                     | 0.46              |
| 8:CB:2316:G:C2    | 8:CB:2317:A:N7    | 2.84                     | 0.46              |
| 8:CB:2515:C:C2    | 8:CB:2516:A:C8    | 3.04                     | 0.46              |
| 8:CB:2535:G:H5''  | 8:CB:2535:G:H8    | 1.80                     | 0.46              |
| 8:CB:2543:G:H2'   | 8:CB:2544:G:O4'   | 2.15                     | 0.46              |
| 8:CB:2627:G:H2'   | 8:CB:2628:C:H6    | 1.80                     | 0.46              |
| 8:CB:2648:G:C2    | 8:CB:2649:C:C2    | 3.03                     | 0.46              |
| 8:CB:2773:C:H2'   | 8:CB:2774:C:C6    | 2.50                     | 0.46              |
| 9:CC:141:HIS:O    | 9:CC:142:ASN:C    | 2.53                     | 0.46              |
| 9:CC:229:HIS:HD1  | 9:CC:231:HIS:CD2  | 2.34                     | 0.46              |
| 13:CG:10:VAL:HB   | 13:CG:47:ASN:HA   | 1.98                     | 0.46              |
| 15:CI:16:MET:CE   | 15:CI:19:PRO:HG2  | 2.45                     | 0.46              |
| 16:CJ:7:LYS:HG2   | 16:CJ:7:LYS:O     | 2.16                     | 0.46              |
| 18:CL:45:GLY:C    | 18:CL:47:ARG:N    | 2.68                     | 0.46              |
| 18:CL:73:ILE:HG22 | 18:CL:75:ALA:HA   | 1.98                     | 0.46              |
| 19:CM:33:LEU:O    | 19:CM:99:GLY:HA2  | 2.16                     | 0.46              |
| 22:CP:73:PHE:CE2  | 22:CP:75:THR:CG2  | 2.88                     | 0.46              |
| 23:CQ:96:ASP:C    | 23:CQ:97:ILE:HD13 | 2.35                     | 0.46              |
| 24:CR:76:LYS:NZ   | 24:CR:90:ARG:HH11 | 2.13                     | 0.46              |
| 25:CS:66:ILE:C    | 25:CS:68:ASP:N    | 2.68                     | 0.46              |
| 33:DA:273:U:C4    | 33:DA:274:A:N7    | 2.83                     | 0.46              |
| 33:DA:389:A:C5    | 33:DA:390:U:H1'   | 2.50                     | 0.46              |
| 33:DA:502:A:H2'   | 33:DA:503:C:O5'   | 2.14                     | 0.46              |
| 33:DA:662:U:O3'   | 33:DA:836:G:OP1   | 2.33                     | 0.46              |
| 33:DA:675:A:H1'   | 43:DK:117:HIS:CE1 | 2.50                     | 0.46              |
| 33:DA:781:A:C8    | 33:DA:782:A:O4'   | 2.68                     | 0.46              |
| 33:DA:881:G:C5    | 33:DA:882:C:C5    | 3.03                     | 0.46              |
| 33:DA:967:C:H3'   | 33:DA:968:A:C5'   | 2.46                     | 0.46              |
| 33:DA:1074:G:C2   | 33:DA:1102:A:C6   | 3.04                     | 0.46              |
| 33:DA:1120:C:H2'  | 33:DA:1120:C:O2   | 2.16                     | 0.46              |
| 35:DC:76:ILE:O    | 35:DC:83:VAL:HG22 | 2.16                     | 0.46              |
| 35:DC:107:LYS:HB2 | 35:DC:110:LEU:CD2 | 2.45                     | 0.46              |
| 36:DD:13:ARG:HD2  | 36:DD:55:ARG:NH2  | 2.29                     | 0.46              |
| 37:DE:148:SER:HB2 | 37:DE:149:PRO:CD  | 2.46                     | 0.46              |
| 39:DG:112:ASP:HB2 | 39:DG:118:ARG:CG  | 2.46                     | 0.46              |
| 40:DH:76:ARG:O    | 40:DH:77:VAL:HG13 | 2.14                     | 0.46              |
| 41:DI:74:GLN:O    | 41:DI:78:ILE:N    | 2.48                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:DI:112:ARG:O   | 41:DI:112:ARG:HG3 | 2.15                     | 0.46              |
| 42:DJ:74:VAL:HG12 | 42:DJ:75:ASP:N    | 2.30                     | 0.46              |
| 43:DK:83:VAL:O    | 43:DK:109:ILE:HA  | 2.15                     | 0.46              |
| 48:DP:4:ILE:HD13  | 48:DP:57:ILE:HD13 | 1.97                     | 0.46              |
| 49:DQ:60:ILE:HG22 | 49:DQ:74:LEU:CB   | 2.46                     | 0.46              |
| 1:A0:39:ARG:HH11  | 8:AB:2816:G:H4'   | 1.80                     | 0.46              |
| 2:A1:19:PHE:CD2   | 2:A1:40:PRO:HA    | 2.48                     | 0.46              |
| 5:A4:2:LYS:HE2    | 5:A4:36:ARG:HB3   | 1.98                     | 0.46              |
| 5:A4:9:LYS:HB2    | 5:A4:25:VAL:HG13  | 1.98                     | 0.46              |
| 5:A4:15:LYS:CD    | 5:A4:26:ILE:HG12  | 2.44                     | 0.46              |
| 7:AA:78:A:N6      | 7:AA:99:A:C8      | 2.83                     | 0.46              |
| 8:AB:3:U:H2'      | 8:AB:4:U:C6       | 2.51                     | 0.46              |
| 8:AB:56:A:H1'     | 8:AB:127:A:N3     | 2.30                     | 0.46              |
| 8:AB:84:A:H61     | 8:AB:99:U:H5'     | 1.81                     | 0.46              |
| 8:AB:222:A:N7     | 8:AB:224:U:C4     | 2.83                     | 0.46              |
| 8:AB:332:A:O2'    | 8:AB:334:C:OP2    | 2.33                     | 0.46              |
| 8:AB:340:A:C8     | 8:AB:340:A:H3'    | 2.50                     | 0.46              |
| 8:AB:355:U:H2'    | 8:AB:356:G:H8     | 1.81                     | 0.46              |
| 8:AB:545:U:C6     | 8:AB:545:U:C3'    | 2.98                     | 0.46              |
| 8:AB:554:U:O2'    | 8:AB:555:G:H5'    | 2.15                     | 0.46              |
| 8:AB:578:G:H5'    | 8:AB:1254:A:OP1   | 2.16                     | 0.46              |
| 8:AB:758:C:O2     | 8:AB:1981:A:C2    | 2.69                     | 0.46              |
| 8:AB:860:U:O2'    | 8:AB:2267:A:H4'   | 2.15                     | 0.46              |
| 8:AB:945:A:C4     | 8:AB:2448:A:C2    | 3.04                     | 0.46              |
| 8:AB:1036:G:N7    | 8:AB:1120:G:O6    | 2.49                     | 0.46              |
| 8:AB:1287:A:OP1   | 20:AN:104:ALA:O   | 2.33                     | 0.46              |
| 8:AB:1336:A:H2'   | 8:AB:1336:A:N3    | 2.31                     | 0.46              |
| 8:AB:1383:A:H3'   | 8:AB:1383:A:P     | 2.56                     | 0.46              |
| 8:AB:1515:A:H2'   | 8:AB:1516:G:O4'   | 2.15                     | 0.46              |
| 8:AB:1606:C:H6    | 8:AB:1606:C:H3'   | 1.81                     | 0.46              |
| 8:AB:1680:U:H2'   | 8:AB:1681:G:H5'   | 1.97                     | 0.46              |
| 8:AB:1795:C:C2    | 8:AB:1796:U:C6    | 3.03                     | 0.46              |
| 8:AB:1797:G:C5    | 8:AB:1798:U:C5    | 3.03                     | 0.46              |
| 8:AB:1803:A:C2    | 8:AB:1822:C:O2    | 2.64                     | 0.46              |
| 8:AB:1850:G:O5'   | 8:AB:1850:G:H8    | 1.98                     | 0.46              |
| 8:AB:1914:C:H2'   | 8:AB:1915:U:C5    | 2.51                     | 0.46              |
| 8:AB:1915:U:H2'   | 8:AB:1916:A:O4'   | 2.16                     | 0.46              |
| 8:AB:2010:G:O2'   | 8:AB:2011:U:H5'   | 2.15                     | 0.46              |
| 8:AB:2050:C:C4    | 8:AB:2051:A:N1    | 2.83                     | 0.46              |
| 8:AB:2077:A:C4    | 8:AB:2435:A:C8    | 3.03                     | 0.46              |
| 8:AB:2079:U:C2    | 8:AB:2080:A:N7    | 2.83                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2201:G:H5'    | 8:AB:2202:U:OP2    | 2.16                     | 0.46              |
| 8:AB:2204:G:N3     | 8:AB:2205:A:C8     | 2.83                     | 0.46              |
| 8:AB:2683:C:O2'    | 8:AB:2684:U:H5'    | 2.15                     | 0.46              |
| 8:AB:2684:U:C5     | 8:AB:2685:G:N7     | 2.83                     | 0.46              |
| 9:AC:89:ASN:OD1    | 9:AC:199:HIS:CE1   | 2.57                     | 0.46              |
| 9:AC:149:LYS:HB3   | 9:AC:150:GLY:H     | 1.55                     | 0.46              |
| 9:AC:229:HIS:HE1   | 9:AC:231:HIS:NE2   | 2.14                     | 0.46              |
| 9:AC:237:ARG:O     | 9:AC:237:ARG:NH1   | 2.46                     | 0.46              |
| 10:AD:31:ALA:O     | 10:AD:32:ASN:ND2   | 2.49                     | 0.46              |
| 13:AG:129:GLU:C    | 13:AG:130:ILE:HG13 | 2.36                     | 0.46              |
| 14:AH:147:VAL:HG12 | 14:AH:148:ALA:H    | 1.81                     | 0.46              |
| 16:AJ:103:ILE:HG22 | 16:AJ:103:ILE:O    | 2.16                     | 0.46              |
| 18:AL:64:PHE:O     | 18:AL:66:PHE:CE1   | 2.68                     | 0.46              |
| 19:AM:89:VAL:O     | 19:AM:89:VAL:HG13  | 2.15                     | 0.46              |
| 20:AN:8:ARG:HA     | 20:AN:43:GLU:OE1   | 2.15                     | 0.46              |
| 20:AN:49:GLU:O     | 20:AN:53:THR:HG23  | 2.15                     | 0.46              |
| 22:AP:71:ARG:NH2   | 22:AP:102:ARG:CB   | 2.75                     | 0.46              |
| 23:AQ:73:ILE:CG2   | 23:AQ:77:LYS:HD2   | 2.43                     | 0.46              |
| 23:AQ:98:ALA:O     | 23:AQ:102:LYS:CE   | 2.63                     | 0.46              |
| 24:AR:4:VAL:HA     | 24:AR:12:HIS:CB    | 2.44                     | 0.46              |
| 25:AS:29:VAL:HG11  | 25:AS:69:LEU:CD2   | 2.45                     | 0.46              |
| 26:AT:3:ARG:HB2    | 26:AT:7:LEU:HD23   | 1.97                     | 0.46              |
| 27:AU:48:VAL:HG11  | 27:AU:52:ASN:HD22  | 1.81                     | 0.46              |
| 28:AV:38:LEU:O     | 28:AV:40:ILE:HG23  | 2.16                     | 0.46              |
| 29:AW:24:ARG:O     | 29:AW:24:ARG:CG    | 2.59                     | 0.46              |
| 30:AX:11:VAL:HG22  | 30:AX:11:VAL:O     | 2.15                     | 0.46              |
| 33:BA:40:C:H5''    | 33:BA:41:G:OP2     | 2.15                     | 0.46              |
| 33:BA:44:A:C2      | 33:BA:45:G:C4      | 3.04                     | 0.46              |
| 33:BA:355:C:C2'    | 33:BA:356:A:H8     | 2.21                     | 0.46              |
| 33:BA:405:U:O2     | 33:BA:498:A:H2'    | 2.16                     | 0.46              |
| 33:BA:407:U:C2     | 33:BA:408:A:C8     | 3.03                     | 0.46              |
| 33:BA:414:A:H2'    | 33:BA:415:A:O4'    | 2.16                     | 0.46              |
| 33:BA:416:G:H8     | 33:BA:416:G:O5'    | 1.98                     | 0.46              |
| 33:BA:433:G:H8     | 33:BA:433:G:O5'    | 1.98                     | 0.46              |
| 33:BA:487:A:C6     | 33:BA:488:C:O2     | 2.68                     | 0.46              |
| 33:BA:668:G:N3     | 47:BO:45:HIS:NE2   | 2.63                     | 0.46              |
| 33:BA:675:A:C2     | 33:BA:716:A:H2     | 2.34                     | 0.46              |
| 33:BA:684:U:C2'    | 33:BA:685:G:H5'    | 2.46                     | 0.46              |
| 33:BA:852:G:C6     | 33:BA:853:C:C4     | 3.04                     | 0.46              |
| 33:BA:888:G:C4     | 33:BA:889:A:N7     | 2.83                     | 0.46              |
| 33:BA:1074:G:C4    | 33:BA:1102:A:C2    | 3.04                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:1348:U:C2   | 33:BA:1349:A:C8    | 3.03                     | 0.46              |
| 33:BA:1430:A:N1   | 33:BA:1431:A:C4    | 2.83                     | 0.46              |
| 34:BB:53:LEU:HD21 | 34:BB:212:TYR:HE2  | 1.80                     | 0.46              |
| 35:BC:135:ARG:O   | 35:BC:137:VAL:N    | 2.49                     | 0.46              |
| 37:BE:48:GLY:O    | 37:BE:62:ALA:HB1   | 2.15                     | 0.46              |
| 39:BG:70:PRO:HG2  | 39:BG:102:TRP:CH2  | 2.35                     | 0.46              |
| 39:BG:129:ASN:HA  | 39:BG:134:VAL:HG11 | 1.97                     | 0.46              |
| 41:BI:37:TYR:CD2  | 41:BI:38:PHE:CD2   | 3.04                     | 0.46              |
| 45:BM:52:ILE:HD12 | 45:BM:55:LEU:HD12  | 1.97                     | 0.46              |
| 48:BP:25:ARG:HD3  | 48:BP:25:ARG:N     | 2.24                     | 0.46              |
| 53:BU:39:LYS:O    | 53:BU:42:THR:C     | 2.54                     | 0.46              |
| 2:C1:43:ARG:HB3   | 2:C1:44:GLN:H      | 1.42                     | 0.46              |
| 3:C2:30:VAL:HG12  | 3:C2:31:LEU:N      | 2.30                     | 0.46              |
| 3:C2:44:VAL:HG21  | 8:CB:126:A:C2      | 2.51                     | 0.46              |
| 4:C3:32:LEU:HD13  | 4:C3:33:THR:N      | 2.31                     | 0.46              |
| 4:C3:39:ARG:HD3   | 4:C3:39:ARG:HA     | 1.61                     | 0.46              |
| 5:C4:17:VAL:HG23  | 5:C4:23:ILE:HG22   | 1.98                     | 0.46              |
| 8:CB:31:C:C6      | 8:CB:31:C:C3'      | 2.98                     | 0.46              |
| 8:CB:79:C:H5''    | 8:CB:80:G:OP2      | 2.16                     | 0.46              |
| 8:CB:131:A:N1     | 8:CB:132:G:C6      | 2.84                     | 0.46              |
| 8:CB:170:U:H2'    | 8:CB:171:U:C6      | 2.51                     | 0.46              |
| 8:CB:188:G:N1     | 8:CB:209:C:N4      | 2.64                     | 0.46              |
| 8:CB:190:A:H2'    | 8:CB:191:A:C8      | 2.51                     | 0.46              |
| 8:CB:193:U:C4     | 8:CB:194:G:N7      | 2.83                     | 0.46              |
| 8:CB:271:G:H22    | 8:CB:366:C:N4      | 2.14                     | 0.46              |
| 8:CB:597:G:N2     | 8:CB:661:A:C4      | 2.83                     | 0.46              |
| 8:CB:612:G:H1'    | 8:CB:616:A:N6      | 2.31                     | 0.46              |
| 8:CB:612:G:O5'    | 8:CB:612:G:H8      | 1.98                     | 0.46              |
| 8:CB:659:G:C6     | 8:CB:660:C:C4      | 3.03                     | 0.46              |
| 8:CB:680:C:O2'    | 8:CB:681:G:H5'     | 2.16                     | 0.46              |
| 8:CB:696:G:H2'    | 8:CB:697:G:H8      | 1.80                     | 0.46              |
| 8:CB:771:G:N1     | 8:CB:772:C:C4      | 2.84                     | 0.46              |
| 8:CB:800:A:H4'    | 8:CB:801:G:H5'     | 1.97                     | 0.46              |
| 8:CB:806:C:O2'    | 8:CB:807:U:H5'     | 2.13                     | 0.46              |
| 8:CB:933:A:H2'    | 8:CB:934:U:H5'     | 1.97                     | 0.46              |
| 8:CB:1007:C:N4    | 8:CB:1008:A:C6     | 2.84                     | 0.46              |
| 8:CB:1059:G:N2    | 15:CI:134:SER:OG   | 2.49                     | 0.46              |
| 8:CB:1100:C:OP1   | 15:CI:2:LYS:HA     | 2.16                     | 0.46              |
| 8:CB:1197:G:O2'   | 8:CB:1198:U:H5'    | 2.14                     | 0.46              |
| 8:CB:1216:G:C5'   | 8:CB:1216:G:H8     | 2.29                     | 0.46              |
| 8:CB:1269:A:C6    | 8:CB:1270:C:N4     | 2.83                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1297:C:N3     | 8:CB:1643:G:O6     | 2.48                     | 0.46              |
| 8:CB:1298:C:H1'    | 8:CB:1302:A:N3     | 2.31                     | 0.46              |
| 8:CB:1313:U:H2'    | 8:CB:1313:U:O2     | 2.15                     | 0.46              |
| 8:CB:1338:G:H2'    | 8:CB:1339:G:H5'    | 1.98                     | 0.46              |
| 8:CB:1353:A:C5     | 8:CB:1378:A:C5     | 3.03                     | 0.46              |
| 8:CB:1365:A:C4     | 8:CB:1366:A:C8     | 3.04                     | 0.46              |
| 8:CB:1369:G:N2     | 8:CB:1370:C:C2     | 2.84                     | 0.46              |
| 8:CB:1380:G:C8     | 8:CB:1380:G:O5'    | 2.68                     | 0.46              |
| 8:CB:1563:U:O2'    | 8:CB:1564:C:H5'    | 2.16                     | 0.46              |
| 8:CB:1796:U:C2'    | 8:CB:1797:G:H5'    | 2.45                     | 0.46              |
| 8:CB:1936:A:C2     | 8:CB:1943:U:O4     | 2.69                     | 0.46              |
| 8:CB:1973:G:C2     | 8:CB:1974:C:O2     | 2.68                     | 0.46              |
| 8:CB:1975:G:C4     | 8:CB:1976:U:C6     | 3.02                     | 0.46              |
| 8:CB:2007:U:HO2'   | 8:CB:2824:C:HO2'   | 1.62                     | 0.46              |
| 8:CB:2028:U:H3'    | 8:CB:2029:G:C8     | 2.50                     | 0.46              |
| 8:CB:2192:U:H6     | 8:CB:2192:U:C5'    | 2.28                     | 0.46              |
| 8:CB:2294:G:C4     | 8:CB:2295:C:C6     | 3.03                     | 0.46              |
| 8:CB:2310:C:H6     | 8:CB:2310:C:H5''   | 1.80                     | 0.46              |
| 8:CB:2519:U:C2     | 8:CB:2542:A:N6     | 2.83                     | 0.46              |
| 8:CB:2617:U:H2'    | 8:CB:2618:G:H5'    | 1.96                     | 0.46              |
| 8:CB:2631:G:C6     | 8:CB:2632:A:N7     | 2.84                     | 0.46              |
| 8:CB:2726:A:O2'    | 8:CB:2727:A:H5'    | 2.15                     | 0.46              |
| 8:CB:2838:G:N2     | 20:CN:93:GLY:N     | 2.62                     | 0.46              |
| 9:CC:48:ILE:HG22   | 9:CC:49:THR:H      | 1.79                     | 0.46              |
| 9:CC:153:LEU:O     | 9:CC:153:LEU:CD2   | 2.63                     | 0.46              |
| 9:CC:161:VAL:HG12  | 9:CC:173:LEU:CD2   | 2.44                     | 0.46              |
| 9:CC:257:ARG:CG    | 9:CC:261:ARG:NH1   | 2.72                     | 0.46              |
| 10:CD:61:THR:N     | 10:CD:62:LYS:HZ2   | 2.14                     | 0.46              |
| 12:CF:107:VAL:HB   | 12:CF:108:PRO:HD3  | 1.97                     | 0.46              |
| 13:CG:67:ALA:O     | 13:CG:68:ARG:C     | 2.54                     | 0.46              |
| 14:CH:117:LEU:HD12 | 14:CH:130:VAL:HG21 | 1.97                     | 0.46              |
| 17:CK:64:ARG:O     | 17:CK:82:ASN:HA    | 2.16                     | 0.46              |
| 17:CK:82:ASN:ND2   | 17:CK:82:ASN:N     | 2.63                     | 0.46              |
| 17:CK:116:ILE:H    | 17:CK:116:ILE:HG12 | 1.25                     | 0.46              |
| 18:CL:54:GLN:HE22  | 18:CL:55:MET:HB3   | 1.80                     | 0.46              |
| 19:CM:42:THR:OG1   | 19:CM:45:GLN:NE2   | 2.48                     | 0.46              |
| 19:CM:77:PRO:N     | 19:CM:86:LYS:HZ3   | 2.13                     | 0.46              |
| 20:CN:67:PHE:O     | 20:CN:68:ALA:O     | 2.33                     | 0.46              |
| 21:CO:31:THR:HG23  | 21:CO:32:PRO:HD2   | 1.98                     | 0.46              |
| 24:CR:11:GLN:N     | 24:CR:21:ARG:NH2   | 2.64                     | 0.46              |
| 26:CT:11:LEU:HD21  | 26:CT:47:VAL:CG2   | 2.46                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 27:CU:24:VAL:O    | 27:CU:25:LYS:CB   | 2.52                     | 0.46              |
| 28:CV:16:ALA:O    | 28:CV:20:LEU:HG   | 2.15                     | 0.46              |
| 29:CW:65:LYS:HB3  | 29:CW:65:LYS:HE3  | 1.65                     | 0.46              |
| 30:CX:3:ALA:N     | 30:CX:6:LEU:HD21  | 2.31                     | 0.46              |
| 30:CX:41:HIS:CE1  | 30:CX:43:LEU:CB   | 2.91                     | 0.46              |
| 33:DA:15:G:N7     | 33:DA:1396:A:C4   | 2.83                     | 0.46              |
| 33:DA:22:G:H2'    | 33:DA:23:C:C6     | 2.50                     | 0.46              |
| 33:DA:57:G:O5'    | 33:DA:57:G:H8     | 1.97                     | 0.46              |
| 33:DA:197:A:H4'   | 33:DA:198:G:O5'   | 2.16                     | 0.46              |
| 33:DA:203:G:H2'   | 33:DA:204:G:C8    | 2.51                     | 0.46              |
| 33:DA:232:G:C5'   | 33:DA:232:G:C8    | 2.94                     | 0.46              |
| 33:DA:276:G:O2'   | 33:DA:277:C:H5'   | 2.15                     | 0.46              |
| 33:DA:415:A:C6    | 33:DA:416:G:C2    | 3.03                     | 0.46              |
| 33:DA:592:G:H2'   | 33:DA:593:U:C5'   | 2.45                     | 0.46              |
| 33:DA:685:G:H2'   | 33:DA:686:U:C6    | 2.51                     | 0.46              |
| 33:DA:755:G:C6    | 33:DA:756:C:N4    | 2.83                     | 0.46              |
| 33:DA:976:G:C8    | 33:DA:1358:U:C2   | 3.04                     | 0.46              |
| 33:DA:1005:A:H4'  | 33:DA:1037:C:O2   | 2.16                     | 0.46              |
| 33:DA:1056:U:H4'  | 35:DC:162:ALA:CB  | 2.46                     | 0.46              |
| 33:DA:1129:C:H1'  | 33:DA:1144:G:H22  | 1.81                     | 0.46              |
| 33:DA:1142:G:O5'  | 33:DA:1142:G:C8   | 2.66                     | 0.46              |
| 33:DA:1234:C:C5   | 33:DA:1235:U:C5   | 3.04                     | 0.46              |
| 34:DB:90:PHE:CD2  | 34:DB:149:GLY:HA3 | 2.49                     | 0.46              |
| 35:DC:56:ILE:HD12 | 35:DC:56:ILE:N    | 2.30                     | 0.46              |
| 35:DC:143:LEU:O   | 35:DC:144:GLY:O   | 2.34                     | 0.46              |
| 36:DD:115:GLN:HG3 | 36:DD:119:HIS:CE1 | 2.51                     | 0.46              |
| 38:DF:61:LEU:HD12 | 38:DF:63:ASN:OD1  | 2.15                     | 0.46              |
| 39:DG:87:PRO:HD2  | 39:DG:151:ALA:O   | 2.16                     | 0.46              |
| 41:DI:46:VAL:CB   | 41:DI:75:ALA:HB1  | 2.45                     | 0.46              |
| 41:DI:51:LEU:HD21 | 41:DI:82:ILE:CG2  | 2.45                     | 0.46              |
| 45:DM:79:LEU:HD12 | 45:DM:79:LEU:C    | 2.36                     | 0.46              |
| 49:DQ:74:LEU:H    | 49:DQ:74:LEU:HD12 | 1.80                     | 0.46              |
| 50:DR:33:THR:H    | 50:DR:39:VAL:CG2  | 2.29                     | 0.46              |
| 52:DT:38:ILE:C    | 52:DT:40:ALA:N    | 2.68                     | 0.46              |
| 2:A1:46:VAL:CG2   | 2:A1:47:ILE:HG13  | 2.45                     | 0.46              |
| 4:A3:38:LYS:HA    | 4:A3:38:LYS:HD3   | 1.55                     | 0.46              |
| 7:AA:21:G:C6      | 7:AA:22:U:C4      | 3.03                     | 0.46              |
| 7:AA:113:C:O2'    | 7:AA:114:C:O4'    | 2.27                     | 0.46              |
| 8:AB:115:C:N4     | 8:AB:116:C:H5     | 2.10                     | 0.46              |
| 8:AB:379:G:N2     | 8:AB:396:G:C8     | 2.83                     | 0.46              |
| 8:AB:410:G:C2     | 8:AB:2407:A:C5    | 3.04                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:690:G:H5''    | 8:AB:690:G:C8      | 2.50                     | 0.46              |
| 8:AB:796:C:H2'     | 8:AB:797:G:H8      | 1.81                     | 0.46              |
| 8:AB:1003:G:C2'    | 8:AB:1010:A:N1     | 2.78                     | 0.46              |
| 8:AB:1064:C:H1'    | 15:AI:90:GLY:HA2   | 1.98                     | 0.46              |
| 8:AB:1296:G:C8     | 8:AB:1296:G:H3'    | 2.49                     | 0.46              |
| 8:AB:1345:C:C6     | 8:AB:1345:C:C3'    | 2.98                     | 0.46              |
| 8:AB:1364:G:H5''   | 8:AB:1365:A:OP2    | 2.16                     | 0.46              |
| 8:AB:1805:A:H8     | 8:AB:1805:A:O5'    | 1.99                     | 0.46              |
| 8:AB:2083:G:H2'    | 8:AB:2084:C:C5'    | 2.46                     | 0.46              |
| 8:AB:2294:G:N2     | 8:AB:2295:C:H1'    | 2.31                     | 0.46              |
| 8:AB:2378:A:H3'    | 8:AB:2378:A:H8     | 1.80                     | 0.46              |
| 8:AB:2619:C:O4'    | 10:AD:155:VAL:HG11 | 2.16                     | 0.46              |
| 8:AB:2636:C:C4'    | 10:AD:80:TRP:CZ2   | 2.98                     | 0.46              |
| 8:AB:2760:C:C2'    | 8:AB:2761:A:H5''   | 2.46                     | 0.46              |
| 8:AB:2852:G:C5     | 8:AB:2853:C:C4     | 3.04                     | 0.46              |
| 9:AC:20:ASN:HA     | 9:AC:21:PRO:HD3    | 1.48                     | 0.46              |
| 9:AC:29:PHE:CZ     | 9:AC:81:GLU:OE1    | 2.69                     | 0.46              |
| 9:AC:179:GLU:HB2   | 9:AC:266:ILE:HA    | 1.97                     | 0.46              |
| 9:AC:218:THR:O     | 9:AC:220:ARG:HD2   | 2.15                     | 0.46              |
| 9:AC:244:VAL:CG2   | 9:AC:245:THR:H     | 2.20                     | 0.46              |
| 10:AD:55:LYS:HB2   | 10:AD:55:LYS:NZ    | 2.31                     | 0.46              |
| 11:AE:44:ARG:N     | 11:AE:44:ARG:NE    | 2.64                     | 0.46              |
| 11:AE:46:GLN:NE2   | 11:AE:47:LYS:HG3   | 2.25                     | 0.46              |
| 11:AE:109:LEU:H    | 11:AE:109:LEU:HD23 | 1.79                     | 0.46              |
| 11:AE:175:ILE:HG22 | 11:AE:176:ASP:N    | 2.30                     | 0.46              |
| 15:AI:17:ALA:H     | 15:AI:42:ASN:HD21  | 1.63                     | 0.46              |
| 16:AJ:38:GLY:C     | 16:AJ:41:LYS:HB3   | 2.36                     | 0.46              |
| 17:AK:9:ASN:O      | 17:AK:83:ALA:HA    | 2.15                     | 0.46              |
| 17:AK:98:ARG:HD2   | 17:AK:100:PHE:CE2  | 2.51                     | 0.46              |
| 17:AK:100:PHE:CD2  | 17:AK:100:PHE:N    | 2.82                     | 0.46              |
| 18:AL:64:PHE:O     | 18:AL:66:PHE:CD1   | 2.69                     | 0.46              |
| 18:AL:78:ARG:HH12  | 18:AL:80:SER:HA    | 1.80                     | 0.46              |
| 22:AP:26:GLU:HA    | 22:AP:47:ILE:H     | 1.79                     | 0.46              |
| 26:AT:31:VAL:HG23  | 26:AT:32:LEU:N     | 2.22                     | 0.46              |
| 27:AU:34:ILE:O     | 27:AU:35:VAL:C     | 2.52                     | 0.46              |
| 27:AU:56:GLY:O     | 27:AU:57:ILE:O     | 2.34                     | 0.46              |
| 29:AW:16:GLU:CA    | 29:AW:18:LYS:HD2   | 2.44                     | 0.46              |
| 33:BA:22:G:H2'     | 33:BA:23:C:H6      | 1.80                     | 0.46              |
| 33:BA:431:A:O5'    | 33:BA:431:A:C8     | 2.64                     | 0.46              |
| 33:BA:524:G:O5'    | 33:BA:524:G:C8     | 2.69                     | 0.46              |
| 33:BA:562:U:C5     | 44:BL:12:ALA:O     | 2.68                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:872:A:N3    | 33:BA:872:A:H2'    | 2.31                     | 0.46              |
| 33:BA:908:A:C6    | 33:BA:909:A:N7     | 2.84                     | 0.46              |
| 33:BA:1055:A:C8   | 33:BA:1055:A:C3'   | 2.98                     | 0.46              |
| 33:BA:1237:C:H5'  | 33:BA:1303:C:O2    | 2.16                     | 0.46              |
| 33:BA:1347:G:O2'  | 33:BA:1373:G:N1    | 2.47                     | 0.46              |
| 33:BA:1518:A:C2   | 33:BA:1519:A:C6    | 3.04                     | 0.46              |
| 34:BB:66:ILE:N    | 34:BB:88:GLN:HG2   | 2.30                     | 0.46              |
| 34:BB:106:VAL:CG1 | 34:BB:110:ILE:HD11 | 2.42                     | 0.46              |
| 34:BB:131:LYS:HE2 | 34:BB:131:LYS:HB3  | 1.41                     | 0.46              |
| 36:BD:55:ARG:C    | 36:BD:57:LYS:H     | 2.17                     | 0.46              |
| 36:BD:102:TYR:HD1 | 36:BD:107:GLY:O    | 1.98                     | 0.46              |
| 37:BE:24:VAL:HG23 | 37:BE:25:LYS:N     | 2.31                     | 0.46              |
| 37:BE:62:ALA:O    | 37:BE:66:ALA:HB2   | 2.16                     | 0.46              |
| 37:BE:158:LYS:HE2 | 37:BE:158:LYS:HA   | 1.97                     | 0.46              |
| 40:BH:9:MET:HA    | 40:BH:26:MET:HE2   | 1.97                     | 0.46              |
| 42:BJ:19:ASP:HA   | 42:BJ:22:THR:HG22  | 1.97                     | 0.46              |
| 43:BK:126:ARG:O   | 53:BU:33:ARG:CZ    | 2.64                     | 0.46              |
| 44:BL:54:VAL:O    | 44:BL:54:VAL:HG23  | 2.16                     | 0.46              |
| 45:BM:2:ARG:O     | 45:BM:3:ILE:HB     | 2.16                     | 0.46              |
| 46:BN:5:MET:HE3   | 46:BN:62:ARG:NH2   | 2.30                     | 0.46              |
| 52:BT:67:HIS:O    | 52:BT:68:LYS:CB    | 2.63                     | 0.46              |
| 53:BU:14:ALA:C    | 53:BU:16:ARG:HE    | 2.18                     | 0.46              |
| 1:C0:27:LEU:HD21  | 8:CB:2886:A:C2     | 2.50                     | 0.46              |
| 3:C2:5:PHE:HE1    | 8:CB:464:U:C5'     | 2.23                     | 0.46              |
| 7:CA:99:A:C2      | 7:CA:100:G:H1'     | 2.51                     | 0.46              |
| 7:CA:99:A:C2      | 7:CA:100:G:N9      | 2.84                     | 0.46              |
| 8:CB:72:U:C5      | 8:CB:112:U:O2'     | 2.69                     | 0.46              |
| 8:CB:194:G:O6     | 8:CB:195:A:N6      | 2.49                     | 0.46              |
| 8:CB:277:G:H1'    | 8:CB:361:G:C6      | 2.50                     | 0.46              |
| 8:CB:312:G:H4'    | 8:CB:331:C:N3      | 2.30                     | 0.46              |
| 8:CB:379:G:C8     | 8:CB:379:G:H3'     | 2.50                     | 0.46              |
| 8:CB:536:G:C5     | 8:CB:537:G:C5      | 3.04                     | 0.46              |
| 8:CB:635:C:C2     | 8:CB:636:G:C8      | 3.04                     | 0.46              |
| 8:CB:644:A:H2     | 8:CB:646:U:C4      | 2.34                     | 0.46              |
| 8:CB:679:C:C2     | 8:CB:680:C:H5      | 2.33                     | 0.46              |
| 8:CB:744:U:H2'    | 8:CB:745:G:O5'     | 2.16                     | 0.46              |
| 8:CB:794:A:C5     | 8:CB:795:C:C5      | 3.04                     | 0.46              |
| 8:CB:917:A:C2'    | 8:CB:918:A:H5'     | 2.46                     | 0.46              |
| 8:CB:1011:G:OP1   | 23:CQ:76:SER:OG    | 2.34                     | 0.46              |
| 8:CB:1340:U:O2    | 8:CB:1340:U:O4'    | 2.34                     | 0.46              |
| 8:CB:1426:G:N1    | 8:CB:1427:A:N6     | 2.64                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1488:C:H2'   | 8:CB:1489:C:H6    | 1.81                     | 0.46              |
| 8:CB:1702:G:C8    | 8:CB:1702:G:H3'   | 2.51                     | 0.46              |
| 8:CB:1805:A:N3    | 8:CB:1813:G:C2    | 2.83                     | 0.46              |
| 8:CB:1839:G:C6    | 8:CB:1927:A:C2    | 3.04                     | 0.46              |
| 8:CB:1839:G:C6    | 8:CB:1840:G:N7    | 2.84                     | 0.46              |
| 8:CB:2229:U:C2    | 8:CB:2230:G:N7    | 2.84                     | 0.46              |
| 8:CB:2264:C:N3    | 8:CB:2265:U:N3    | 2.64                     | 0.46              |
| 8:CB:2466:C:C2    | 8:CB:2485:G:C2    | 3.03                     | 0.46              |
| 8:CB:2636:C:C4'   | 10:CD:80:TRP:CZ2  | 2.98                     | 0.46              |
| 8:CB:2684:U:C3'   | 8:CB:2684:U:C6    | 2.99                     | 0.46              |
| 8:CB:2729:G:H2'   | 8:CB:2730:C:H6    | 1.80                     | 0.46              |
| 8:CB:2784:U:H4'   | 10:CD:41:ALA:O    | 2.15                     | 0.46              |
| 8:CB:2823:A:C6    | 8:CB:2824:C:C4    | 3.03                     | 0.46              |
| 8:CB:2824:C:N4    | 8:CB:2825:G:N7    | 2.64                     | 0.46              |
| 8:CB:2850:A:N3    | 8:CB:2851:A:C8    | 2.82                     | 0.46              |
| 8:CB:2891:U:C2'   | 8:CB:2892:G:H5'   | 2.45                     | 0.46              |
| 55:CB:5153:HOH:O  | 11:CE:57:LYS:HE2  | 2.16                     | 0.46              |
| 9:CC:62:ARG:HD3   | 9:CC:62:ARG:C     | 2.35                     | 0.46              |
| 9:CC:80:LEU:HA    | 9:CC:91:ALA:CA    | 2.43                     | 0.46              |
| 9:CC:134:ILE:CD1  | 9:CC:135:PRO:HD2  | 2.44                     | 0.46              |
| 9:CC:260:LYS:HG2  | 9:CC:262:THR:OG1  | 2.16                     | 0.46              |
| 11:CE:19:PHE:O    | 11:CE:19:PHE:CD1  | 2.68                     | 0.46              |
| 13:CG:86:LEU:CD2  | 13:CG:147:LEU:HB2 | 2.46                     | 0.46              |
| 14:CH:29:PHE:HA   | 14:CH:33:GLN:HB2  | 1.97                     | 0.46              |
| 14:CH:35:LYS:HZ3  | 14:CH:37:VAL:CG2  | 2.28                     | 0.46              |
| 15:CI:57:VAL:O    | 15:CI:68:PHE:HA   | 2.16                     | 0.46              |
| 16:CJ:8:PRO:HG2   | 16:CJ:11:VAL:HG11 | 1.98                     | 0.46              |
| 22:CP:50:ARG:HH11 | 22:CP:50:ARG:N    | 2.14                     | 0.46              |
| 22:CP:50:ARG:CZ   | 22:CP:50:ARG:HB2  | 2.46                     | 0.46              |
| 23:CQ:78:PHE:CZ   | 23:CQ:82:LEU:HD11 | 2.51                     | 0.46              |
| 24:CR:46:GLU:HG3  | 24:CR:51:VAL:HB   | 1.98                     | 0.46              |
| 24:CR:96:VAL:O    | 24:CR:96:VAL:CG1  | 2.63                     | 0.46              |
| 25:CS:40:ASN:O    | 25:CS:41:LYS:CB   | 2.63                     | 0.46              |
| 27:CU:89:GLY:C    | 27:CU:91:LYS:H    | 2.18                     | 0.46              |
| 32:CZ:17:SER:CB   | 32:CZ:21:VAL:HB   | 2.45                     | 0.46              |
| 33:DA:25:C:C5     | 33:DA:558:G:C2    | 3.03                     | 0.46              |
| 33:DA:54:C:C5     | 33:DA:352:C:C5    | 3.04                     | 0.46              |
| 33:DA:104:G:N2    | 33:DA:105:G:C5    | 2.83                     | 0.46              |
| 33:DA:105:G:C6    | 33:DA:106:C:C4    | 3.03                     | 0.46              |
| 33:DA:171:A:O2'   | 33:DA:172:A:H5'   | 2.15                     | 0.46              |
| 33:DA:246:A:C5    | 33:DA:279:A:C6    | 3.04                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:394:G:C2    | 33:DA:395:C:C6     | 3.03                     | 0.46              |
| 33:DA:528:C:H1'   | 33:DA:535:A:C2     | 2.51                     | 0.46              |
| 33:DA:718:A:C5    | 33:DA:719:C:C2     | 3.04                     | 0.46              |
| 33:DA:769:G:H2'   | 33:DA:770:C:O4'    | 2.16                     | 0.46              |
| 33:DA:794:A:N6    | 33:DA:795:C:N4     | 2.64                     | 0.46              |
| 33:DA:887:G:C2    | 33:DA:911:U:O2     | 2.69                     | 0.46              |
| 33:DA:944:G:OP1   | 33:DA:946:A:N6     | 2.49                     | 0.46              |
| 33:DA:946:A:H2'   | 33:DA:947:G:C8     | 2.50                     | 0.46              |
| 33:DA:963:G:N2    | 33:DA:973:G:N7     | 2.64                     | 0.46              |
| 33:DA:1367:C:O2'  | 42:DJ:50:THR:HB    | 2.16                     | 0.46              |
| 33:DA:1420:U:H3'  | 33:DA:1420:U:C6    | 2.51                     | 0.46              |
| 34:DB:107:ARG:CG  | 34:DB:110:ILE:HD12 | 2.46                     | 0.46              |
| 36:DD:13:ARG:CG   | 36:DD:55:ARG:NH2   | 2.78                     | 0.46              |
| 36:DD:50:TYR:CD2  | 36:DD:51:GLY:N     | 2.83                     | 0.46              |
| 36:DD:145:ARG:O   | 36:DD:147:LYS:N    | 2.49                     | 0.46              |
| 38:DF:50:PRO:HD2  | 50:DR:73:HIS:ND1   | 2.30                     | 0.46              |
| 38:DF:68:GLN:HA   | 38:DF:71:ILE:CG2   | 2.39                     | 0.46              |
| 38:DF:76:THR:C    | 38:DF:78:PHE:N     | 2.68                     | 0.46              |
| 39:DG:140:VAL:O   | 39:DG:143:MET:HB2  | 2.15                     | 0.46              |
| 39:DG:145:GLU:HA  | 39:DG:148:LYS:HB3  | 1.98                     | 0.46              |
| 40:DH:10:LEU:HD13 | 40:DH:74:ILE:CD1   | 2.29                     | 0.46              |
| 41:DI:24:ASN:O    | 41:DI:58:GLU:HA    | 2.15                     | 0.46              |
| 42:DJ:8:ILE:CG1   | 42:DJ:74:VAL:HB    | 2.46                     | 0.46              |
| 53:DU:16:ARG:HE   | 53:DU:17:ARG:HH12  | 1.63                     | 0.46              |
| 1:A0:2:VAL:HG22   | 1:A0:3:GLN:N       | 2.29                     | 0.46              |
| 4:A3:12:ARG:O     | 4:A3:12:ARG:CG     | 2.63                     | 0.46              |
| 5:A4:1:MET:HE2    | 8:AB:2479:U:OP2    | 2.15                     | 0.46              |
| 7:AA:31:C:H4'     | 7:AA:54:G:N2       | 2.31                     | 0.46              |
| 8:AB:81:G:C2'     | 8:AB:82:U:H5'      | 2.46                     | 0.46              |
| 8:AB:84:A:N6      | 8:AB:99:U:H5'      | 2.30                     | 0.46              |
| 8:AB:90:U:H3      | 8:AB:91:A:H62      | 1.63                     | 0.46              |
| 8:AB:118:A:H8     | 8:AB:119:A:H8      | 1.63                     | 0.46              |
| 8:AB:237:C:C5     | 8:AB:238:C:H5      | 2.34                     | 0.46              |
| 8:AB:393:C:H2'    | 8:AB:394:C:C6      | 2.51                     | 0.46              |
| 8:AB:450:G:H4'    | 11:AE:47:LYS:NZ    | 2.29                     | 0.46              |
| 8:AB:452:G:C2     | 8:AB:458:G:C5      | 3.03                     | 0.46              |
| 8:AB:900:A:H2'    | 8:AB:901:C:C6      | 2.50                     | 0.46              |
| 8:AB:952:G:H3'    | 8:AB:953:G:H5''    | 1.96                     | 0.46              |
| 8:AB:1055:G:C2    | 8:AB:1105:U:N3     | 2.84                     | 0.46              |
| 8:AB:1255:U:H3    | 11:AE:66:GLY:CA    | 2.27                     | 0.46              |
| 8:AB:1268:A:OP1   | 8:AB:2006:C:OP1    | 2.33                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1270:C:H2'   | 8:AB:1648:U:H5''   | 1.98                     | 0.46              |
| 8:AB:1413:A:O5'   | 8:AB:1413:A:C8     | 2.67                     | 0.46              |
| 8:AB:1499:C:H3'   | 8:AB:1499:C:C6     | 2.50                     | 0.46              |
| 8:AB:1528:A:C6    | 8:AB:1529:G:H1'    | 2.51                     | 0.46              |
| 8:AB:1558:C:H1'   | 8:AB:1560:G:C8     | 2.51                     | 0.46              |
| 8:AB:1633:G:O2'   | 8:AB:1634:A:H5''   | 2.16                     | 0.46              |
| 8:AB:1801:A:C8    | 8:AB:2203:U:C6     | 3.04                     | 0.46              |
| 8:AB:2051:A:C8    | 8:AB:2051:A:C5'    | 2.99                     | 0.46              |
| 8:AB:2056:G:H1'   | 8:AB:2577:A:N1     | 2.31                     | 0.46              |
| 8:AB:2095:A:C8    | 8:AB:2095:A:C3'    | 2.98                     | 0.46              |
| 8:AB:2201:G:N1    | 8:AB:2202:U:O2     | 2.49                     | 0.46              |
| 8:AB:2211:A:O2'   | 8:AB:2212:A:P      | 2.73                     | 0.46              |
| 8:AB:2285:C:H3'   | 8:AB:2285:C:C6     | 2.51                     | 0.46              |
| 8:AB:2328:A:O5'   | 8:AB:2328:A:H8     | 1.98                     | 0.46              |
| 8:AB:2435:A:C2'   | 8:AB:2436:G:O5'    | 2.64                     | 0.46              |
| 8:AB:2478:A:H3'   | 8:AB:2479:U:H6     | 1.80                     | 0.46              |
| 8:AB:2703:C:H2'   | 8:AB:2704:C:H6     | 1.80                     | 0.46              |
| 8:AB:2746:U:H1'   | 13:AG:138:GLN:HB2  | 1.97                     | 0.46              |
| 8:AB:2758:A:N7    | 13:AG:66:THR:HG21  | 2.31                     | 0.46              |
| 8:AB:2769:U:C2    | 8:AB:2770:G:N7     | 2.83                     | 0.46              |
| 9:AC:63:ILE:HG21  | 9:AC:102:TYR:CE2   | 2.51                     | 0.46              |
| 9:AC:134:ILE:HA   | 9:AC:135:PRO:HD3   | 1.66                     | 0.46              |
| 11:AE:67:ARG:HD2  | 11:AE:67:ARG:N     | 2.29                     | 0.46              |
| 13:AG:152:ARG:O   | 13:AG:154:GLU:N    | 2.49                     | 0.46              |
| 15:AI:99:LYS:O    | 15:AI:100:ILE:HD13 | 2.15                     | 0.46              |
| 16:AJ:24:THR:C    | 16:AJ:25:LEU:HD13  | 2.36                     | 0.46              |
| 16:AJ:50:THR:HG23 | 16:AJ:51:GLY:N     | 2.30                     | 0.46              |
| 20:AN:28:LEU:HD13 | 20:AN:34:ILE:CD1   | 2.46                     | 0.46              |
| 22:AP:18:SER:HA   | 22:AP:87:ARG:HH21  | 1.79                     | 0.46              |
| 23:AQ:40:LYS:HD2  | 23:AQ:43:GLN:NE2   | 2.31                     | 0.46              |
| 24:AR:82:HIS:O    | 24:AR:83:TYR:CD1   | 2.68                     | 0.46              |
| 27:AU:9:GLU:O     | 27:AU:71:ILE:HA    | 2.16                     | 0.46              |
| 32:AZ:2:LYS:C     | 32:AZ:4:ASP:N      | 2.68                     | 0.46              |
| 32:AZ:5:ILE:HB    | 32:AZ:51:VAL:HG12  | 1.98                     | 0.46              |
| 33:BA:17:U:H1'    | 33:BA:1080:A:N3    | 2.30                     | 0.46              |
| 33:BA:300:A:H1'   | 33:BA:565:U:O2     | 2.15                     | 0.46              |
| 33:BA:361:G:C2'   | 33:BA:362:G:H5'    | 2.46                     | 0.46              |
| 33:BA:390:U:H2'   | 33:BA:391:G:H8     | 1.79                     | 0.46              |
| 33:BA:724:G:C4    | 33:BA:725:G:C8     | 3.04                     | 0.46              |
| 33:BA:729:A:H2'   | 33:BA:730:G:H8     | 1.81                     | 0.46              |
| 33:BA:835:U:C2    | 33:BA:836:G:C8     | 3.04                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:844:G:O2'   | 33:BA:845:A:H8     | 1.98                     | 0.46              |
| 33:BA:1004:A:C2   | 33:BA:1026:G:N9    | 2.84                     | 0.46              |
| 33:BA:1004:A:C2   | 33:BA:1026:G:C4    | 3.04                     | 0.46              |
| 33:BA:1088:G:C6   | 33:BA:1089:G:C5    | 3.03                     | 0.46              |
| 33:BA:1222:G:C5   | 33:BA:1223:C:C4    | 3.03                     | 0.46              |
| 33:BA:1306:A:N3   | 45:BM:107:THR:HG21 | 2.30                     | 0.46              |
| 33:BA:1415:G:C4   | 33:BA:1486:G:C2    | 3.04                     | 0.46              |
| 33:BA:1511:G:C2   | 33:BA:1525:G:C2    | 3.03                     | 0.46              |
| 33:BA:1525:G:C8   | 33:BA:1525:G:C3'   | 2.99                     | 0.46              |
| 34:BB:17:HIS:HD2  | 34:BB:18:GLN:HE22  | 1.61                     | 0.46              |
| 35:BC:75:VAL:HG12 | 35:BC:76:ILE:N     | 2.30                     | 0.46              |
| 36:BD:114:ARG:O   | 36:BD:115:GLN:C    | 2.54                     | 0.46              |
| 45:BM:12:LYS:HB2  | 45:BM:17:ALA:HB2   | 1.96                     | 0.46              |
| 46:BN:30:ILE:CG1  | 46:BN:44:VAL:HG21  | 2.41                     | 0.46              |
| 4:C3:30:HIS:C     | 4:C3:31:ILE:CG2    | 2.84                     | 0.46              |
| 5:C4:16:ILE:HD12  | 8:CB:1033:U:C6     | 2.50                     | 0.46              |
| 5:C4:18:LYS:O     | 5:C4:19:ARG:HG3    | 2.15                     | 0.46              |
| 5:C4:23:ILE:HG13  | 5:C4:24:ARG:H      | 1.81                     | 0.46              |
| 7:CA:27:C:H6      | 7:CA:27:C:H5''     | 1.81                     | 0.46              |
| 7:CA:92:C:O2'     | 7:CA:93:C:H5'      | 2.14                     | 0.46              |
| 7:CA:104:A:H2'    | 7:CA:105:G:O4'     | 2.15                     | 0.46              |
| 8:CB:37:C:N4      | 8:CB:442:G:H1      | 2.08                     | 0.46              |
| 8:CB:319:G:N1     | 8:CB:320:A:C5      | 2.84                     | 0.46              |
| 8:CB:411:G:OP2    | 8:CB:2407:A:P      | 2.74                     | 0.46              |
| 8:CB:445:C:O2'    | 8:CB:449:A:N3      | 2.49                     | 0.46              |
| 8:CB:486:C:O2     | 8:CB:495:G:C2      | 2.68                     | 0.46              |
| 8:CB:624:C:O2'    | 8:CB:625:G:H5'     | 2.15                     | 0.46              |
| 8:CB:725:G:C6     | 8:CB:726:G:C6      | 3.04                     | 0.46              |
| 8:CB:792:A:C5     | 8:CB:2440:C:C6     | 3.04                     | 0.46              |
| 8:CB:943:A:OP2    | 18:CL:40:SER:CB    | 2.64                     | 0.46              |
| 8:CB:1188:U:H2'   | 8:CB:1188:U:O2     | 2.15                     | 0.46              |
| 8:CB:1203:U:H3    | 8:CB:1243:C:H42    | 1.63                     | 0.46              |
| 8:CB:1255:U:N3    | 11:CE:66:GLY:O     | 2.49                     | 0.46              |
| 8:CB:1381:G:N7    | 8:CB:1382:G:N2     | 2.64                     | 0.46              |
| 8:CB:1418:G:H2'   | 8:CB:1579:A:N6     | 2.30                     | 0.46              |
| 8:CB:1449:G:N2    | 8:CB:1450:G:H1'    | 2.31                     | 0.46              |
| 8:CB:1473:G:H2'   | 8:CB:1474:U:H6     | 1.81                     | 0.46              |
| 8:CB:1606:C:C6    | 8:CB:1606:C:C3'    | 2.99                     | 0.46              |
| 8:CB:1649:G:H1'   | 20:CN:106:ASP:HB2  | 1.96                     | 0.46              |
| 8:CB:1797:G:N7    | 8:CB:1798:U:C5     | 2.84                     | 0.46              |
| 8:CB:1821:A:H2'   | 8:CB:1822:C:C6     | 2.49                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2044:C:C2    | 8:CB:2625:G:N2     | 2.84                     | 0.46              |
| 8:CB:2061:G:O4'   | 8:CB:2503:A:C5     | 2.68                     | 0.46              |
| 8:CB:2086:U:OP1   | 9:CC:257:ARG:NH2   | 2.49                     | 0.46              |
| 8:CB:2359:C:O2'   | 8:CB:2360:G:P      | 2.74                     | 0.46              |
| 8:CB:2396:G:H5''  | 8:CB:2396:G:H8     | 1.80                     | 0.46              |
| 8:CB:2512:C:P     | 10:CD:128:ARG:HA   | 2.54                     | 0.46              |
| 8:CB:2521:C:C4    | 8:CB:2522:U:C4     | 3.04                     | 0.46              |
| 8:CB:2529:G:H5'   | 8:CB:2530:A:O5'    | 2.15                     | 0.46              |
| 8:CB:2531:A:C2'   | 8:CB:2532:G:H5'    | 2.45                     | 0.46              |
| 8:CB:2567:G:O2'   | 8:CB:2568:U:H5'    | 2.16                     | 0.46              |
| 8:CB:2722:G:N3    | 8:CB:2723:C:C6     | 2.83                     | 0.46              |
| 8:CB:2741:A:H62   | 8:CB:2763:G:H1'    | 1.80                     | 0.46              |
| 8:CB:2834:G:O6    | 8:CB:2879:A:C2'    | 2.64                     | 0.46              |
| 8:CB:2838:G:N2    | 8:CB:2839:G:H1'    | 2.31                     | 0.46              |
| 8:CB:2846:G:OP1   | 22:CP:54:LEU:HD12  | 2.15                     | 0.46              |
| 9:CC:23:LEU:O     | 9:CC:23:LEU:HD12   | 2.16                     | 0.46              |
| 9:CC:105:ALA:O    | 9:CC:195:GLY:HA2   | 2.16                     | 0.46              |
| 9:CC:229:HIS:CD2  | 9:CC:230:PRO:HD3   | 2.50                     | 0.46              |
| 9:CC:231:HIS:CE1  | 9:CC:242:HIS:ND1   | 2.84                     | 0.46              |
| 10:CD:24:VAL:HB   | 10:CD:193:VAL:HG11 | 1.98                     | 0.46              |
| 10:CD:130:GLN:OE1 | 10:CD:138:LEU:HD23 | 2.16                     | 0.46              |
| 11:CE:52:VAL:O    | 11:CE:53:THR:OG1   | 2.33                     | 0.46              |
| 12:CF:49:LEU:HD22 | 12:CF:52:ALA:HB2   | 1.96                     | 0.46              |
| 14:CH:42:LYS:HE2  | 14:CH:42:LYS:HB3   | 1.69                     | 0.46              |
| 15:CI:99:LYS:HG2  | 15:CI:99:LYS:O     | 2.16                     | 0.46              |
| 16:CJ:55:ILE:HG12 | 16:CJ:123:LYS:HB2  | 1.97                     | 0.46              |
| 16:CJ:127:GLY:O   | 16:CJ:130:HIS:ND1  | 2.48                     | 0.46              |
| 16:CJ:131:ASN:O   | 16:CJ:133:ALA:N    | 2.48                     | 0.46              |
| 17:CK:2:ILE:CB    | 17:CK:67:LYS:HE3   | 2.45                     | 0.46              |
| 17:CK:43:ILE:O    | 17:CK:54:LYS:HA    | 2.16                     | 0.46              |
| 20:CN:8:ARG:HD2   | 20:CN:43:GLU:CD    | 2.36                     | 0.46              |
| 22:CP:6:GLN:OE1   | 22:CP:6:GLN:N      | 2.49                     | 0.46              |
| 23:CQ:24:TYR:CD1  | 23:CQ:24:TYR:C     | 2.87                     | 0.46              |
| 23:CQ:46:TYR:HA   | 24:CR:77:PHE:CD1   | 2.51                     | 0.46              |
| 24:CR:11:GLN:HB3  | 24:CR:21:ARG:NH2   | 2.30                     | 0.46              |
| 24:CR:33:VAL:CG2  | 24:CR:34:GLU:H     | 2.07                     | 0.46              |
| 28:CV:6:ALA:HB1   | 28:CV:40:ILE:HB    | 1.97                     | 0.46              |
| 29:CW:24:ARG:HH12 | 29:CW:56:HIS:HE1   | 1.64                     | 0.46              |
| 29:CW:72:GLY:C    | 29:CW:74:LYS:N     | 2.69                     | 0.46              |
| 30:CX:47:ARG:O    | 30:CX:50:VAL:HG22  | 2.16                     | 0.46              |
| 33:DA:124:C:N3    | 33:DA:125:U:C5     | 2.83                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:325:A:N6    | 33:DA:326:G:C2    | 2.84                     | 0.46              |
| 33:DA:376:G:C2    | 33:DA:389:A:C2    | 3.04                     | 0.46              |
| 33:DA:408:A:C8    | 33:DA:409:U:C6    | 3.03                     | 0.46              |
| 33:DA:465:A:O3'   | 33:DA:466:A:N3    | 2.49                     | 0.46              |
| 33:DA:514:C:N4    | 33:DA:515:G:O6    | 2.44                     | 0.46              |
| 33:DA:592:G:C6    | 33:DA:593:U:C2    | 3.04                     | 0.46              |
| 33:DA:630:A:H2'   | 33:DA:631:C:H6    | 1.78                     | 0.46              |
| 33:DA:646:G:H2'   | 33:DA:646:G:N3    | 2.30                     | 0.46              |
| 33:DA:683:G:O6    | 33:DA:708:C:N3    | 2.48                     | 0.46              |
| 33:DA:754:C:C1'   | 47:DO:68:TYR:CD1  | 2.99                     | 0.46              |
| 33:DA:803:G:C8    | 33:DA:803:G:H3'   | 2.51                     | 0.46              |
| 33:DA:844:G:H2'   | 33:DA:845:A:H8    | 1.79                     | 0.46              |
| 33:DA:912:C:H2'   | 33:DA:913:A:C5'   | 2.46                     | 0.46              |
| 33:DA:975:A:C4'   | 33:DA:976:G:H5'   | 2.38                     | 0.46              |
| 33:DA:1012:A:N6   | 33:DA:1013:G:N1   | 2.63                     | 0.46              |
| 33:DA:1421:G:C2   | 33:DA:1422:G:C4   | 3.03                     | 0.46              |
| 33:DA:1426:G:C1'  | 33:DA:1475:G:N2   | 2.79                     | 0.46              |
| 33:DA:1524:C:OP1  | 43:DK:124:LYS:HD3 | 2.16                     | 0.46              |
| 38:DF:85:ILE:HG22 | 38:DF:86:ARG:H    | 1.79                     | 0.46              |
| 39:DG:87:PRO:HB3  | 39:DG:144:ALA:HB1 | 1.97                     | 0.46              |
| 39:DG:137:ARG:C   | 39:DG:139:ASP:H   | 2.18                     | 0.46              |
| 40:DH:10:LEU:CD1  | 40:DH:74:ILE:HD11 | 2.29                     | 0.46              |
| 40:DH:95:MET:C    | 40:DH:97:GLY:H    | 2.18                     | 0.46              |
| 41:DI:40:ARG:N    | 41:DI:44:ARG:CD   | 2.68                     | 0.46              |
| 42:DJ:76:ILE:HG22 | 42:DJ:77:VAL:N    | 2.30                     | 0.46              |
| 44:DL:36:VAL:HG23 | 44:DL:36:VAL:O    | 2.16                     | 0.46              |
| 47:DO:68:TYR:O    | 47:DO:69:LEU:C    | 2.54                     | 0.46              |
| 48:DP:13:LYS:HB2  | 48:DP:14:ARG:H    | 1.43                     | 0.46              |
| 2:A1:7:LYS:NZ     | 8:AB:2285:C:H5    | 2.13                     | 0.46              |
| 7:AA:20:G:N1      | 7:AA:21:G:C6      | 2.84                     | 0.46              |
| 7:AA:30:C:C3'     | 7:AA:31:C:H5'     | 2.46                     | 0.46              |
| 7:AA:43:C:C2'     | 7:AA:44:G:H5''    | 2.45                     | 0.46              |
| 7:AA:112:G:O2'    | 7:AA:113:C:H5'    | 2.16                     | 0.46              |
| 8:AB:142:A:C6     | 8:AB:143:C:N4     | 2.84                     | 0.46              |
| 8:AB:218:A:H2'    | 8:AB:219:A:H8     | 1.81                     | 0.46              |
| 8:AB:235:U:C2     | 8:AB:236:C:C5     | 3.04                     | 0.46              |
| 8:AB:237:C:N3     | 8:AB:261:G:C2     | 2.84                     | 0.46              |
| 8:AB:296:U:H5'    | 8:AB:296:U:H6     | 1.81                     | 0.46              |
| 8:AB:297:G:C6     | 8:AB:342:A:C2     | 3.03                     | 0.46              |
| 8:AB:336:C:O2     | 8:AB:337:C:C5     | 2.69                     | 0.46              |
| 8:AB:372:G:H8     | 32:AZ:54:GLY:HA3  | 1.79                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:416:U:O5'     | 8:AB:416:U:H6      | 1.99                     | 0.46              |
| 8:AB:418:C:C2      | 8:AB:419:U:C5      | 3.04                     | 0.46              |
| 8:AB:587:C:C2      | 18:AL:38:GLN:CD    | 2.89                     | 0.46              |
| 8:AB:616:A:C2      | 8:AB:617:G:H1'     | 2.51                     | 0.46              |
| 8:AB:673:C:N3      | 8:AB:808:G:C2      | 2.84                     | 0.46              |
| 8:AB:944:C:C5'     | 8:AB:944:C:H6      | 2.28                     | 0.46              |
| 8:AB:960:A:H8      | 8:AB:960:A:O5'     | 1.99                     | 0.46              |
| 8:AB:964:C:HO2'    | 8:AB:2273:A:H1'    | 1.80                     | 0.46              |
| 8:AB:1016:G:C2     | 8:AB:1147:A:N3     | 2.83                     | 0.46              |
| 8:AB:1017:G:H2'    | 8:AB:1018:U:C6     | 2.51                     | 0.46              |
| 8:AB:1142:A:H5''   | 8:AB:1142:A:H8     | 1.74                     | 0.46              |
| 8:AB:1150:C:C2     | 8:AB:1151:A:N7     | 2.84                     | 0.46              |
| 8:AB:1417:C:H42    | 8:AB:1581:G:H1     | 1.63                     | 0.46              |
| 8:AB:1429:G:H2'    | 8:AB:1430:G:C5'    | 2.46                     | 0.46              |
| 8:AB:1522:A:H1'    | 8:AB:1524:G:C6     | 2.51                     | 0.46              |
| 8:AB:1562:U:H2'    | 8:AB:1563:U:C6     | 2.49                     | 0.46              |
| 8:AB:1613:G:H3'    | 8:AB:1614:A:C5'    | 2.46                     | 0.46              |
| 8:AB:1615:C:N3     | 8:AB:1617:C:C6     | 2.84                     | 0.46              |
| 8:AB:1673:G:H5''   | 8:AB:1674:G:OP2    | 2.16                     | 0.46              |
| 8:AB:1857:G:N2     | 8:AB:1886:U:O4     | 2.49                     | 0.46              |
| 8:AB:2011:U:H2'    | 8:AB:2012:G:H8     | 1.81                     | 0.46              |
| 8:AB:2026:U:C2     | 8:AB:2027:G:C8     | 3.04                     | 0.46              |
| 8:AB:2254:C:C5     | 8:AB:2255:G:N7     | 2.84                     | 0.46              |
| 8:AB:2458:G:C8     | 8:AB:2490:G:N2     | 2.84                     | 0.46              |
| 8:AB:2633:G:C6     | 8:AB:2634:A:C5     | 3.04                     | 0.46              |
| 8:AB:2689:U:C2     | 8:AB:2713:U:C6     | 3.03                     | 0.46              |
| 8:AB:2749:A:C5     | 8:AB:2750:A:C8     | 3.04                     | 0.46              |
| 10:AD:78:GLY:O     | 10:AD:79:LEU:HG    | 2.15                     | 0.46              |
| 11:AE:144:GLU:O    | 11:AE:146:VAL:HG22 | 2.16                     | 0.46              |
| 11:AE:175:ILE:HD13 | 11:AE:175:ILE:HA   | 1.85                     | 0.46              |
| 13:AG:106:LEU:H    | 13:AG:106:LEU:CD1  | 2.27                     | 0.46              |
| 13:AG:106:LEU:HD21 | 13:AG:161:VAL:CG2  | 2.46                     | 0.46              |
| 15:AI:14:ALA:HB1   | 15:AI:45:THR:HB    | 1.97                     | 0.46              |
| 16:AJ:18:VAL:O     | 16:AJ:56:VAL:HA    | 2.16                     | 0.46              |
| 16:AJ:58:ASN:O     | 16:AJ:59:ALA:HB3   | 2.16                     | 0.46              |
| 17:AK:16:ALA:O     | 17:AK:17:ARG:O     | 2.33                     | 0.46              |
| 17:AK:54:LYS:H     | 17:AK:54:LYS:CD    | 2.29                     | 0.46              |
| 18:AL:75:ALA:HB3   | 18:AL:101:ILE:HD12 | 1.96                     | 0.46              |
| 19:AM:114:ARG:HE   | 19:AM:117:PHE:HD2  | 1.62                     | 0.46              |
| 20:AN:65:LEU:O     | 20:AN:69:ARG:CG    | 2.64                     | 0.46              |
| 22:AP:54:LEU:N     | 22:AP:58:PHE:CE1   | 2.84                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:AP:97:TYR:O    | 22:AP:98:TYR:HB2  | 2.15                     | 0.46              |
| 25:AS:9:HIS:ND1   | 25:AS:9:HIS:N     | 2.63                     | 0.46              |
| 25:AS:23:LEU:HB3  | 25:AS:35:ILE:CD1  | 2.46                     | 0.46              |
| 28:AV:4:ILE:CG2   | 28:AV:42:LEU:HD22 | 2.45                     | 0.46              |
| 33:BA:27:G:N7     | 33:BA:557:G:N2    | 2.63                     | 0.46              |
| 33:BA:276:G:O2'   | 33:BA:277:C:H5'   | 2.16                     | 0.46              |
| 33:BA:375:U:OP1   | 48:BP:70:ARG:CD   | 2.64                     | 0.46              |
| 33:BA:433:G:N1    | 33:BA:434:U:C2    | 2.84                     | 0.46              |
| 33:BA:561:U:O2'   | 33:BA:562:U:P     | 2.73                     | 0.46              |
| 33:BA:657:U:H3'   | 33:BA:657:U:C6    | 2.50                     | 0.46              |
| 33:BA:704:A:C8    | 33:BA:704:A:H5''  | 2.49                     | 0.46              |
| 33:BA:763:G:O2'   | 33:BA:764:C:H5'   | 2.15                     | 0.46              |
| 33:BA:792:A:C5    | 33:BA:794:A:C6    | 3.03                     | 0.46              |
| 33:BA:881:G:C5    | 33:BA:882:C:C4    | 3.04                     | 0.46              |
| 33:BA:891:U:C5    | 33:BA:906:A:C2    | 3.04                     | 0.46              |
| 33:BA:1415:G:C4   | 33:BA:1416:G:C8   | 3.03                     | 0.46              |
| 33:BA:1483:A:C8   | 33:BA:1483:A:H3'  | 2.51                     | 0.46              |
| 33:BA:1499:A:H2'  | 33:BA:1500:A:O4'  | 2.15                     | 0.46              |
| 33:BA:1521:C:C2'  | 33:BA:1522:U:H6   | 2.29                     | 0.46              |
| 34:BB:94:ARG:O    | 34:BB:96:LEU:HD22 | 2.16                     | 0.46              |
| 36:BD:3:TYR:O     | 36:BD:4:LEU:O     | 2.33                     | 0.46              |
| 36:BD:111:ALA:O   | 36:BD:114:ARG:HB3 | 2.16                     | 0.46              |
| 37:BE:151:MET:C   | 37:BE:155:LYS:HB3 | 2.35                     | 0.46              |
| 41:BI:11:ARG:HD3  | 41:BI:73:GLY:HA2  | 1.98                     | 0.46              |
| 41:BI:26:LYS:HE3  | 41:BI:26:LYS:HB3  | 1.70                     | 0.46              |
| 44:BL:20:VAL:CA   | 44:BL:94:TYR:OH   | 2.59                     | 0.46              |
| 45:BM:82:LEU:HD21 | 51:BS:64:GLU:OE2  | 2.15                     | 0.46              |
| 48:BP:66:THR:CG2  | 48:BP:67:ILE:N    | 2.79                     | 0.46              |
| 50:BR:46:THR:C    | 50:BR:48:ALA:H    | 2.19                     | 0.46              |
| 7:CA:32:U:O4      | 7:CA:51:G:C6      | 2.69                     | 0.46              |
| 8:CB:200:U:H5'    | 32:CZ:20:ASN:HA   | 1.97                     | 0.46              |
| 8:CB:271:G:H1'    | 8:CB:272:A:N7     | 2.26                     | 0.46              |
| 8:CB:282:A:H2'    | 8:CB:283:G:O4'    | 2.16                     | 0.46              |
| 8:CB:312:G:C2     | 8:CB:313:G:C5     | 3.03                     | 0.46              |
| 8:CB:524:G:C2     | 8:CB:525:U:C6     | 3.04                     | 0.46              |
| 8:CB:543:G:H5''   | 8:CB:543:G:H8     | 1.81                     | 0.46              |
| 8:CB:579:G:N2     | 8:CB:1262:A:H1'   | 2.31                     | 0.46              |
| 8:CB:687:C:N3     | 8:CB:688:U:O2     | 2.49                     | 0.46              |
| 8:CB:738:G:C2     | 8:CB:739:A:C2     | 3.03                     | 0.46              |
| 8:CB:819:A:C2     | 8:CB:820:A:C4     | 3.03                     | 0.46              |
| 8:CB:933:A:H3'    | 8:CB:933:A:H8     | 1.80                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1037:G:C2     | 8:CB:1038:G:C8    | 3.04                     | 0.46              |
| 8:CB:1341:G:O6     | 26:CT:26:LYS:HE3  | 2.16                     | 0.46              |
| 8:CB:1364:G:C1'    | 8:CB:1368:G:H22   | 2.29                     | 0.46              |
| 8:CB:1459:G:H8     | 8:CB:1459:G:H3'   | 1.81                     | 0.46              |
| 8:CB:1651:G:C6     | 8:CB:1652:A:C5    | 3.04                     | 0.46              |
| 8:CB:1702:G:C6     | 8:CB:1703:G:C5    | 3.03                     | 0.46              |
| 8:CB:1842:G:C1'    | 9:CC:241:LYS:HE3  | 2.46                     | 0.46              |
| 8:CB:1861:G:N1     | 8:CB:1882:U:C2    | 2.84                     | 0.46              |
| 8:CB:1899:A:C8     | 8:CB:1899:A:C3'   | 2.99                     | 0.46              |
| 8:CB:1959:G:H3'    | 8:CB:1959:G:C8    | 2.50                     | 0.46              |
| 8:CB:2097:A:C5     | 8:CB:2098:U:C4    | 3.04                     | 0.46              |
| 8:CB:2214:C:O2     | 8:CB:2214:C:C2'   | 2.64                     | 0.46              |
| 8:CB:2235:G:H8     | 8:CB:2235:G:O5'   | 1.97                     | 0.46              |
| 8:CB:2488:G:H2'    | 8:CB:2489:U:C6    | 2.50                     | 0.46              |
| 8:CB:2519:U:C4'    | 8:CB:2520:C:OP1   | 2.50                     | 0.46              |
| 8:CB:2543:G:H3'    | 8:CB:2544:G:H8    | 1.80                     | 0.46              |
| 8:CB:2543:G:C5     | 8:CB:2765:A:C2    | 3.04                     | 0.46              |
| 8:CB:2737:G:N2     | 8:CB:2768:U:C2    | 2.84                     | 0.46              |
| 8:CB:2807:U:O2     | 8:CB:2892:G:N2    | 2.48                     | 0.46              |
| 8:CB:2811:G:P      | 10:CD:61:THR:HG22 | 2.56                     | 0.46              |
| 9:CC:32:LEU:HB3    | 9:CC:61:TYR:HE1   | 1.77                     | 0.46              |
| 9:CC:116:GLN:HG3   | 9:CC:116:GLN:O    | 2.16                     | 0.46              |
| 9:CC:135:PRO:C     | 9:CC:137:GLY:H    | 2.18                     | 0.46              |
| 10:CD:61:THR:HG23  | 10:CD:62:LYS:CD   | 2.46                     | 0.46              |
| 10:CD:133:THR:HG22 | 10:CD:134:HIS:N   | 2.29                     | 0.46              |
| 13:CG:101:VAL:HG12 | 13:CG:115:GLN:CG  | 2.46                     | 0.46              |
| 17:CK:54:LYS:H     | 17:CK:54:LYS:CD   | 2.27                     | 0.46              |
| 18:CL:40:SER:C     | 18:CL:41:ARG:HG2  | 2.37                     | 0.46              |
| 18:CL:66:PHE:CD2   | 18:CL:66:PHE:C    | 2.89                     | 0.46              |
| 18:CL:66:PHE:CD2   | 18:CL:67:THR:N    | 2.84                     | 0.46              |
| 18:CL:92:LEU:HA    | 18:CL:96:LYS:CD   | 2.46                     | 0.46              |
| 20:CN:78:LYS:HD2   | 20:CN:82:GLU:OE2  | 2.16                     | 0.46              |
| 21:CO:37:ALA:HB3   | 21:CO:51:ALA:O    | 2.16                     | 0.46              |
| 22:CP:24:THR:O     | 22:CP:26:GLU:N    | 2.49                     | 0.46              |
| 22:CP:26:GLU:HA    | 22:CP:47:ILE:H    | 1.80                     | 0.46              |
| 26:CT:39:THR:HG1   | 26:CT:42:GLU:HB3  | 1.80                     | 0.46              |
| 31:CY:56:VAL:O     | 31:CY:57:GLU:O    | 2.34                     | 0.46              |
| 33:DA:65:A:C6      | 33:DA:381:C:N3    | 2.84                     | 0.46              |
| 33:DA:142:G:C2     | 33:DA:143:A:C4    | 3.04                     | 0.46              |
| 33:DA:170:U:O2'    | 33:DA:171:A:H5'   | 2.15                     | 0.46              |
| 33:DA:275:G:N1     | 33:DA:276:G:C6    | 2.84                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:357:G:OP1   | 33:DA:367:U:H2'   | 2.16                     | 0.46              |
| 33:DA:411:A:C4    | 33:DA:429:U:O4    | 2.69                     | 0.46              |
| 33:DA:525:C:H6    | 33:DA:525:C:O5'   | 1.99                     | 0.46              |
| 33:DA:628:G:C2    | 33:DA:629:A:H1'   | 2.50                     | 0.46              |
| 33:DA:636:U:N3    | 33:DA:637:C:C5    | 2.83                     | 0.46              |
| 33:DA:659:U:H2'   | 33:DA:660:C:C5    | 2.47                     | 0.46              |
| 33:DA:734:G:C2    | 33:DA:735:C:C6    | 3.04                     | 0.46              |
| 33:DA:743:A:H2'   | 33:DA:744:C:C5'   | 2.46                     | 0.46              |
| 33:DA:791:G:C5'   | 33:DA:792:A:OP2   | 2.64                     | 0.46              |
| 33:DA:828:U:H5    | 33:DA:829:G:C4    | 2.33                     | 0.46              |
| 33:DA:941:G:O2'   | 33:DA:1350:A:H5'' | 2.16                     | 0.46              |
| 33:DA:952:U:H5''  | 33:DA:964:A:H61   | 1.81                     | 0.46              |
| 33:DA:1081:A:OP1  | 37:DE:21:SER:C    | 2.53                     | 0.46              |
| 33:DA:1086:U:O4   | 33:DA:1099:G:O6   | 2.34                     | 0.46              |
| 33:DA:1157:A:O5'  | 33:DA:1157:A:H2'  | 2.16                     | 0.46              |
| 33:DA:1239:A:C4   | 33:DA:1298:U:H5   | 2.33                     | 0.46              |
| 33:DA:1385:G:N7   | 33:DA:1386:G:N7   | 2.64                     | 0.46              |
| 33:DA:1509:C:O2   | 33:DA:1509:C:C2'  | 2.62                     | 0.46              |
| 34:DB:112:ARG:O   | 34:DB:116:LEU:HB2 | 2.16                     | 0.46              |
| 37:DE:59:ILE:O    | 37:DE:60:GLN:C    | 2.53                     | 0.46              |
| 38:DF:19:PRO:HG2  | 38:DF:20:GLY:H    | 1.80                     | 0.46              |
| 39:DG:129:ASN:N   | 39:DG:129:ASN:OD1 | 2.49                     | 0.46              |
| 45:DM:18:LEU:HD13 | 45:DM:29:SER:HA   | 1.98                     | 0.46              |
| 47:DO:73:ASP:OD2  | 47:DO:76:ARG:HG3  | 2.16                     | 0.46              |
| 48:DP:67:ILE:CG1  | 48:DP:71:VAL:HG23 | 2.40                     | 0.46              |
| 53:DU:39:LYS:HB3  | 53:DU:40:PRO:CD   | 2.46                     | 0.46              |
| 53:DU:46:ARG:C    | 53:DU:48:LYS:H    | 2.17                     | 0.46              |
| 7:AA:13:G:C8      | 7:AA:13:G:C3'     | 2.99                     | 0.46              |
| 8:AB:81:G:HO2'    | 8:AB:295:G:HO2'   | 1.58                     | 0.46              |
| 8:AB:90:U:O2      | 8:AB:90:U:C2'     | 2.64                     | 0.46              |
| 8:AB:335:C:H5''   | 8:AB:336:C:OP2    | 2.16                     | 0.46              |
| 8:AB:458:G:N2     | 8:AB:469:G:C4     | 2.84                     | 0.46              |
| 8:AB:579:G:H4'    | 8:AB:2017:U:H2'   | 1.97                     | 0.46              |
| 8:AB:690:G:C4     | 8:AB:691:C:C5     | 3.03                     | 0.46              |
| 8:AB:804:A:H5''   | 8:AB:805:G:OP1    | 2.16                     | 0.46              |
| 8:AB:831:G:O6     | 8:AB:832:U:N3     | 2.48                     | 0.46              |
| 8:AB:843:G:C6     | 8:AB:844:A:C6     | 3.04                     | 0.46              |
| 8:AB:1551:A:N7    | 8:AB:1552:A:C2    | 2.84                     | 0.46              |
| 8:AB:1609:A:C2    | 8:AB:1616:A:N7    | 2.84                     | 0.46              |
| 8:AB:1694:C:C5'   | 8:AB:1694:C:C6    | 2.99                     | 0.46              |
| 8:AB:1962:C:H4'   | 8:AB:1963:U:OP1   | 2.16                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1977:A:N6    | 8:AB:1978:A:C6     | 2.83                     | 0.46              |
| 8:AB:2199:A:C8    | 8:AB:2199:A:C5'    | 2.92                     | 0.46              |
| 8:AB:2201:G:C6    | 8:AB:2202:U:C2     | 3.04                     | 0.46              |
| 8:AB:2213:U:C3'   | 8:AB:2213:U:C2     | 2.98                     | 0.46              |
| 8:AB:2244:U:H1'   | 8:AB:2434:A:C4     | 2.50                     | 0.46              |
| 8:AB:2294:G:C4    | 8:AB:2295:C:C6     | 3.04                     | 0.46              |
| 8:AB:2360:G:N2    | 8:AB:2428:G:C6     | 2.84                     | 0.46              |
| 8:AB:2504:U:H5''  | 8:AB:2505:G:OP2    | 2.16                     | 0.46              |
| 8:AB:2511:U:O4    | 8:AB:2512:C:N4     | 2.49                     | 0.46              |
| 8:AB:2519:U:C4'   | 8:AB:2520:C:OP1    | 2.49                     | 0.46              |
| 8:AB:2526:G:C2'   | 8:AB:2527:C:H5'    | 2.45                     | 0.46              |
| 8:AB:2560:A:C5    | 8:AB:2561:U:C6     | 3.03                     | 0.46              |
| 8:AB:2672:U:H3'   | 8:AB:2673:G:H5''   | 1.98                     | 0.46              |
| 8:AB:2837:A:H2'   | 8:AB:2838:G:C5'    | 2.46                     | 0.46              |
| 8:AB:2876:G:C5    | 8:AB:2877:G:C8     | 3.04                     | 0.46              |
| 9:AC:3:VAL:N      | 33:BA:772:U:H1'    | 2.30                     | 0.46              |
| 9:AC:144:GLU:HB2  | 9:AC:187:CYS:HB3   | 1.98                     | 0.46              |
| 10:AD:174:SER:HB2 | 10:AD:208:LYS:CB   | 2.45                     | 0.46              |
| 10:AD:202:ILE:O   | 10:AD:202:ILE:HG22 | 2.16                     | 0.46              |
| 11:AE:85:PHE:O    | 11:AE:86:ALA:HB3   | 2.15                     | 0.46              |
| 11:AE:90:GLN:CG   | 11:AE:92:HIS:CD2   | 2.99                     | 0.46              |
| 11:AE:191:ASP:N   | 11:AE:194:LYS:HZ3  | 2.13                     | 0.46              |
| 13:AG:117:PRO:O   | 13:AG:118:ALA:C    | 2.54                     | 0.46              |
| 14:AH:78:VAL:CG1  | 14:AH:80:ILE:HG13  | 2.46                     | 0.46              |
| 18:AL:40:SER:C    | 18:AL:41:ARG:HE    | 2.19                     | 0.46              |
| 19:AM:9:PHE:CE1   | 19:AM:11:LYS:NZ    | 2.82                     | 0.46              |
| 20:AN:69:ARG:C    | 20:AN:70:THR:HG22  | 2.36                     | 0.46              |
| 20:AN:84:GLY:O    | 20:AN:88:ALA:HB2   | 2.16                     | 0.46              |
| 21:AO:35:ILE:HD11 | 21:AO:53:THR:HG22  | 1.98                     | 0.46              |
| 21:AO:76:LYS:O    | 21:AO:78:VAL:N     | 2.49                     | 0.46              |
| 22:AP:25:VAL:HG13 | 22:AP:88:ARG:N     | 2.29                     | 0.46              |
| 22:AP:93:LYS:HB2  | 22:AP:96:LEU:HD12  | 1.98                     | 0.46              |
| 23:AQ:41:ALA:C    | 23:AQ:43:GLN:H     | 2.19                     | 0.46              |
| 25:AS:27:LYS:HD2  | 25:AS:27:LYS:H     | 1.81                     | 0.46              |
| 25:AS:86:MET:HG2  | 25:AS:87:PRO:CD    | 2.44                     | 0.46              |
| 28:AV:35:GLU:HG3  | 28:AV:93:ARG:CZ    | 2.45                     | 0.46              |
| 28:AV:85:LYS:O    | 28:AV:86:LEU:HD12  | 2.14                     | 0.46              |
| 33:BA:18:C:H2'    | 33:BA:19:A:O5'     | 2.16                     | 0.46              |
| 33:BA:295:C:C2    | 33:BA:296:U:C5     | 3.04                     | 0.46              |
| 33:BA:323:U:C6    | 33:BA:323:U:H3'    | 2.51                     | 0.46              |
| 33:BA:563:A:O2'   | 33:BA:567:G:C8     | 2.68                     | 0.46              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 33:BA:578:C:H4'   | 33:BA:729:A:H1'  | 1.98                     | 0.46              |
| 33:BA:807:A:N6    | 55:BA:5157:HOH:O | 2.49                     | 0.46              |
| 33:BA:909:A:C2    | 33:BA:910:C:H1'  | 2.51                     | 0.46              |
| 33:BA:969:A:C8    | 33:BA:969:A:H3'  | 2.51                     | 0.46              |
| 33:BA:994:A:H2    | 46:BN:4:SER:CB   | 2.28                     | 0.46              |
| 33:BA:1084:G:H8   | 33:BA:1085:U:C2' | 2.14                     | 0.46              |
| 33:BA:1310:G:H8   | 33:BA:1310:G:O5' | 1.99                     | 0.46              |
| 33:BA:1408:A:H5'' | 33:BA:1409:C:OP2 | 2.16                     | 0.46              |
| 33:BA:1430:A:C6   | 33:BA:1431:A:C2  | 3.03                     | 0.46              |
| 33:BA:1443:C:C5   | 33:BA:1444:U:C5  | 3.04                     | 0.46              |
| 33:BA:1469:C:H2'  | 33:BA:1470:U:H5' | 1.98                     | 0.46              |
| 35:BC:63:ILE:CG1  | 35:BC:98:ALA:HB2 | 2.45                     | 0.46              |
| 43:BK:30:ILE:HA   | 43:BK:45:THR:OG1 | 2.15                     | 0.46              |
| 45:BM:5:GLY:O     | 45:BM:6:ILE:HG23 | 2.16                     | 0.46              |
| 52:BT:70:LYS:HZ2  | 52:BT:73:ARG:NH2 | 2.14                     | 0.46              |
| 5:C4:14:CYS:HA    | 5:C4:27:CYS:HB3  | 1.77                     | 0.46              |
| 7:CA:20:G:N1      | 7:CA:21:G:C5     | 2.84                     | 0.46              |
| 7:CA:30:C:H2'     | 7:CA:31:C:C5'    | 2.31                     | 0.46              |
| 8:CB:74:A:N7      | 8:CB:88:G:O6     | 2.49                     | 0.46              |
| 8:CB:197:A:N1     | 8:CB:198:C:O2    | 2.48                     | 0.46              |
| 8:CB:297:G:H2'    | 8:CB:298:G:O5'   | 2.16                     | 0.46              |
| 8:CB:337:C:N3     | 8:CB:338:G:H1'   | 2.31                     | 0.46              |
| 8:CB:801:G:H4'    | 8:CB:802:A:OP2   | 2.15                     | 0.46              |
| 8:CB:811:U:O2     | 8:CB:1251:C:C5   | 2.69                     | 0.46              |
| 8:CB:856:G:C4'    | 29:CW:23:LYS:HZ2 | 2.28                     | 0.46              |
| 8:CB:869:G:C4     | 8:CB:870:U:C6    | 3.04                     | 0.46              |
| 8:CB:971:G:H5''   | 8:CB:974:G:H2'   | 1.97                     | 0.46              |
| 8:CB:974:G:O6     | 8:CB:989:G:C5    | 2.69                     | 0.46              |
| 8:CB:1023:U:O5'   | 8:CB:1024:G:OP2  | 2.34                     | 0.46              |
| 8:CB:1045:C:O5'   | 8:CB:1046:A:H5'  | 2.16                     | 0.46              |
| 8:CB:1216:G:C5'   | 8:CB:1216:G:C8   | 2.99                     | 0.46              |
| 8:CB:1225:G:C6    | 8:CB:1226:A:N6   | 2.84                     | 0.46              |
| 8:CB:1248:G:OP1   | 11:CE:44:ARG:NH1 | 2.48                     | 0.46              |
| 8:CB:1285:A:C5    | 8:CB:1329:U:C4   | 3.04                     | 0.46              |
| 8:CB:1350:C:C5'   | 8:CB:1351:C:OP2  | 2.64                     | 0.46              |
| 8:CB:1353:A:O4'   | 8:CB:1569:A:H2   | 1.99                     | 0.46              |
| 8:CB:1405:U:H2'   | 8:CB:1406:U:C6   | 2.51                     | 0.46              |
| 8:CB:1433:A:C2    | 8:CB:1434:A:C6   | 3.04                     | 0.46              |
| 8:CB:1861:G:N2    | 8:CB:1882:U:O2   | 2.49                     | 0.46              |
| 8:CB:1935:G:N2    | 8:CB:1964:G:N9   | 2.64                     | 0.46              |
| 8:CB:1972:G:N2    | 8:CB:1973:G:N7   | 2.64                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2052:A:H5'   | 10:CD:146:ILE:O   | 2.16                     | 0.46              |
| 8:CB:2138:G:H22   | 8:CB:2152:G:H22   | 1.62                     | 0.46              |
| 8:CB:2154:A:C8    | 8:CB:2155:U:C5    | 3.04                     | 0.46              |
| 8:CB:2262:U:O4    | 8:CB:2279:G:C6    | 2.69                     | 0.46              |
| 8:CB:2658:C:OP1   | 13:CG:159:LYS:CE  | 2.55                     | 0.46              |
| 8:CB:2672:U:H3'   | 8:CB:2673:G:H5''  | 1.98                     | 0.46              |
| 8:CB:2684:U:C4    | 8:CB:2685:G:N7    | 2.84                     | 0.46              |
| 8:CB:2829:A:O2'   | 8:CB:2830:C:H5'   | 2.15                     | 0.46              |
| 9:CC:52:HIS:C     | 9:CC:53:ILE:CG1   | 2.85                     | 0.46              |
| 9:CC:116:GLN:HG3  | 9:CC:121:ALA:HB1  | 1.97                     | 0.46              |
| 9:CC:178:GLY:O    | 9:CC:266:ILE:CG2  | 2.64                     | 0.46              |
| 9:CC:204:LEU:HD22 | 9:CC:210:ALA:HB1  | 1.98                     | 0.46              |
| 9:CC:243:PRO:CB   | 9:CC:248:GLY:H    | 2.28                     | 0.46              |
| 10:CD:34:VAL:CG1  | 10:CD:48:ILE:HG22 | 2.46                     | 0.46              |
| 10:CD:129:THR:CA  | 10:CD:140:HIS:HE1 | 2.22                     | 0.46              |
| 11:CE:1:MET:HG3   | 11:CE:2:GLU:N     | 2.31                     | 0.46              |
| 12:CF:36:ASN:HA   | 12:CF:86:CYS:HB2  | 1.98                     | 0.46              |
| 15:CI:74:PRO:HA   | 15:CI:112:LYS:NZ  | 2.30                     | 0.46              |
| 17:CK:9:ASN:O     | 17:CK:83:ALA:HA   | 2.15                     | 0.46              |
| 17:CK:76:VAL:O    | 22:CP:74:GLN:N    | 2.47                     | 0.46              |
| 22:CP:60:VAL:HB   | 22:CP:61:ARG:H    | 1.55                     | 0.46              |
| 22:CP:80:VAL:HG22 | 22:CP:80:VAL:O    | 2.15                     | 0.46              |
| 25:CS:87:PRO:O    | 25:CS:88:ARG:CB   | 2.64                     | 0.46              |
| 25:CS:108:SER:OG  | 25:CS:109:ASP:N   | 2.48                     | 0.46              |
| 26:CT:67:VAL:CG1  | 26:CT:68:LYS:H    | 2.27                     | 0.46              |
| 27:CU:28:LEU:HD12 | 27:CU:28:LEU:N    | 2.30                     | 0.46              |
| 27:CU:43:LYS:HD2  | 27:CU:57:ILE:HB   | 1.96                     | 0.46              |
| 29:CW:36:ILE:HG21 | 29:CW:68:PHE:CD1  | 2.50                     | 0.46              |
| 33:DA:14:U:H2'    | 33:DA:14:U:O2     | 2.15                     | 0.46              |
| 33:DA:37:U:O2'    | 33:DA:547:A:N1    | 2.48                     | 0.46              |
| 33:DA:119:A:C5    | 33:DA:240:G:N7    | 2.83                     | 0.46              |
| 33:DA:254:G:N3    | 33:DA:255:G:C8    | 2.84                     | 0.46              |
| 33:DA:258:G:O6    | 33:DA:269:C:N3    | 2.48                     | 0.46              |
| 33:DA:293:G:H2'   | 33:DA:294:U:C6    | 2.48                     | 0.46              |
| 33:DA:299:G:C5    | 33:DA:300:A:C6    | 3.03                     | 0.46              |
| 33:DA:385:C:C5    | 33:DA:386:C:C5    | 3.04                     | 0.46              |
| 33:DA:432:A:N7    | 33:DA:433:G:N7    | 2.64                     | 0.46              |
| 33:DA:528:C:H1'   | 33:DA:535:A:N3    | 2.31                     | 0.46              |
| 33:DA:539:A:OP1   | 44:DL:110:LYS:HE2 | 2.16                     | 0.46              |
| 33:DA:603:U:C4    | 33:DA:604:G:N7    | 2.84                     | 0.46              |
| 33:DA:610:U:C5    | 33:DA:611:C:C5    | 3.03                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:614:C:O2     | 33:DA:627:G:N2     | 2.49                     | 0.46              |
| 33:DA:656:G:C2     | 33:DA:751:U:O2     | 2.69                     | 0.46              |
| 33:DA:661:G:C2     | 33:DA:745:G:C2     | 3.04                     | 0.46              |
| 33:DA:704:A:C3'    | 33:DA:705:G:C5'    | 2.93                     | 0.46              |
| 33:DA:788:U:O4     | 33:DA:789:U:H5     | 1.99                     | 0.46              |
| 33:DA:846:G:H5'    | 33:DA:847:G:OP2    | 2.16                     | 0.46              |
| 33:DA:978:A:OP1    | 33:DA:1361:G:N2    | 2.49                     | 0.46              |
| 33:DA:979:C:OP1    | 33:DA:980:C:OP2    | 2.34                     | 0.46              |
| 33:DA:1152:A:C5    | 33:DA:1153:G:N7    | 2.83                     | 0.46              |
| 33:DA:1175:G:C6    | 33:DA:1176:A:C5    | 3.04                     | 0.46              |
| 33:DA:1330:U:OP1   | 45:DM:24:VAL:O     | 2.33                     | 0.46              |
| 33:DA:1389:C:O2    | 33:DA:1389:C:H2'   | 2.15                     | 0.46              |
| 33:DA:1463:U:C6    | 33:DA:1463:U:C3'   | 2.99                     | 0.46              |
| 33:DA:1468:A:C4    | 33:DA:1469:C:C5    | 3.03                     | 0.46              |
| 35:DC:59:PRO:CD    | 35:DC:64:ARG:HB2   | 2.46                     | 0.46              |
| 35:DC:174:LEU:HD11 | 35:DC:200:TRP:HE1  | 1.81                     | 0.46              |
| 36:DD:29:THR:O     | 36:DD:30:LYS:NZ    | 2.47                     | 0.46              |
| 36:DD:36:ALA:CB    | 36:DD:42:ALA:HB2   | 2.42                     | 0.46              |
| 36:DD:111:ALA:O    | 36:DD:113:ALA:N    | 2.48                     | 0.46              |
| 36:DD:137:SER:O    | 36:DD:140:ASP:HB2  | 2.15                     | 0.46              |
| 37:DE:56:PRO:O     | 37:DE:59:ILE:HB    | 2.16                     | 0.46              |
| 37:DE:96:GLN:HG2   | 37:DE:97:PRO:CD    | 2.46                     | 0.46              |
| 39:DG:41:ILE:HG21  | 39:DG:115:MET:HB3  | 1.96                     | 0.46              |
| 39:DG:103:ILE:HG13 | 39:DG:104:VAL:HG23 | 1.98                     | 0.46              |
| 42:DJ:52:LEU:HG    | 42:DJ:62:ARG:NE    | 2.31                     | 0.46              |
| 48:DP:72:ALA:C     | 48:DP:74:LEU:H     | 2.18                     | 0.46              |
| 1:A0:3:GLN:HB3     | 8:AB:2615:U:H1'    | 1.98                     | 0.46              |
| 2:A1:22:THR:HB     | 4:A3:34:LYS:CE     | 2.33                     | 0.46              |
| 3:A2:9:VAL:C       | 3:A2:11:LYS:N      | 2.70                     | 0.46              |
| 4:A3:5:THR:O       | 4:A3:8:GLY:N       | 2.47                     | 0.46              |
| 5:A4:27:CYS:SG     | 5:A4:33:HIS:CD2    | 3.09                     | 0.46              |
| 8:AB:93:G:C2       | 8:AB:94:A:C4       | 3.04                     | 0.46              |
| 8:AB:134:G:C6      | 8:AB:135:U:N3      | 2.84                     | 0.46              |
| 8:AB:583:G:C2      | 8:AB:584:C:C4      | 3.05                     | 0.46              |
| 8:AB:616:A:C2      | 8:AB:617:G:C4      | 3.03                     | 0.46              |
| 8:AB:760:G:H2'     | 8:AB:761:A:H8      | 1.81                     | 0.46              |
| 8:AB:764:A:OP2     | 8:AB:764:A:H4'     | 2.16                     | 0.46              |
| 8:AB:971:G:H5''    | 8:AB:974:G:H2'     | 1.98                     | 0.46              |
| 8:AB:1230:A:C4     | 8:AB:1231:U:C6     | 3.04                     | 0.46              |
| 8:AB:1401:G:C6     | 8:AB:1402:U:O4     | 2.69                     | 0.46              |
| 8:AB:1410:G:H5''   | 8:AB:1411:U:OP2    | 2.16                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1425:G:C2     | 8:AB:1426:G:C2     | 3.04                     | 0.46              |
| 8:AB:1449:G:N2     | 8:AB:1450:G:H1'    | 2.31                     | 0.46              |
| 8:AB:1459:G:H3'    | 8:AB:1459:G:H8     | 1.80                     | 0.46              |
| 8:AB:1557:C:H5     | 8:AB:1558:C:H2'    | 1.81                     | 0.46              |
| 8:AB:1622:G:N2     | 8:AB:1623:G:C4     | 2.84                     | 0.46              |
| 8:AB:1641:A:N6     | 8:AB:1642:G:C2     | 2.84                     | 0.46              |
| 8:AB:1879:C:H2'    | 8:AB:1880:U:O4'    | 2.16                     | 0.46              |
| 8:AB:1942:C:H5     | 8:AB:1943:U:C6     | 2.34                     | 0.46              |
| 8:AB:2083:G:H2'    | 8:AB:2084:C:H5'    | 1.97                     | 0.46              |
| 8:AB:2097:A:C5     | 8:AB:2098:U:C5     | 3.04                     | 0.46              |
| 8:AB:2239:G:H8     | 8:AB:2239:G:O5'    | 1.99                     | 0.46              |
| 8:AB:2485:G:H4'    | 19:AM:121:ALA:CA   | 2.45                     | 0.46              |
| 8:AB:2489:U:H2'    | 8:AB:2490:G:H5'    | 1.98                     | 0.46              |
| 8:AB:2511:U:O3'    | 10:AD:128:ARG:HG2  | 2.16                     | 0.46              |
| 8:AB:2531:A:N1     | 8:AB:2532:G:C5     | 2.84                     | 0.46              |
| 8:AB:2800:A:H2'    | 8:AB:2801:G:C4'    | 2.46                     | 0.46              |
| 8:AB:2819:G:C6     | 8:AB:2821:A:C2     | 3.04                     | 0.46              |
| 9:AC:38:LYS:O      | 9:AC:39:SER:CB     | 2.64                     | 0.46              |
| 9:AC:153:LEU:O     | 9:AC:153:LEU:CD2   | 2.64                     | 0.46              |
| 9:AC:257:ARG:CA    | 9:AC:261:ARG:HH12  | 2.28                     | 0.46              |
| 11:AE:42:GLY:O     | 11:AE:43:THR:HG22  | 2.16                     | 0.46              |
| 11:AE:175:ILE:HG23 | 11:AE:176:ASP:N    | 2.30                     | 0.46              |
| 12:AF:69:ALA:C     | 12:AF:70:ARG:HG3   | 2.37                     | 0.46              |
| 12:AF:135:ILE:HG23 | 12:AF:136:ILE:H    | 1.81                     | 0.46              |
| 14:AH:7:ASP:OD1    | 14:AH:7:ASP:N      | 2.44                     | 0.46              |
| 16:AJ:38:GLY:CA    | 16:AJ:41:LYS:HB3   | 2.46                     | 0.46              |
| 16:AJ:123:LYS:HD2  | 16:AJ:123:LYS:N    | 2.31                     | 0.46              |
| 17:AK:98:ARG:O     | 17:AK:99:ILE:HD12  | 2.16                     | 0.46              |
| 18:AL:78:ARG:O     | 18:AL:111:ILE:HD12 | 2.16                     | 0.46              |
| 20:AN:36:THR:O     | 20:AN:110:MET:O    | 2.34                     | 0.46              |
| 21:AO:10:ARG:HE    | 21:AO:97:PHE:HE1   | 1.63                     | 0.46              |
| 21:AO:88:LYS:HD2   | 21:AO:116:GLN:HE21 | 1.80                     | 0.46              |
| 22:AP:60:VAL:HB    | 22:AP:61:ARG:H     | 1.55                     | 0.46              |
| 22:AP:64:SER:HB3   | 22:AP:71:ARG:NH1   | 2.32                     | 0.46              |
| 25:AS:40:ASN:O     | 25:AS:41:LYS:CB    | 2.64                     | 0.46              |
| 25:AS:68:ASP:HB3   | 25:AS:69:LEU:H     | 1.53                     | 0.46              |
| 25:AS:109:ASP:O    | 25:AS:110:ARG:OXT  | 2.34                     | 0.46              |
| 26:AT:62:VAL:O     | 26:AT:80:TRP:HB3   | 2.16                     | 0.46              |
| 29:AW:81:ILE:HD12  | 29:AW:81:ILE:C     | 2.36                     | 0.46              |
| 32:AZ:9:TYR:CE2    | 32:AZ:26:SER:O     | 2.69                     | 0.46              |
| 33:BA:81:A:C2      | 33:BA:82:G:N7      | 2.84                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:110:C:H2'   | 33:BA:111:G:H8     | 1.81                     | 0.46              |
| 33:BA:127:G:C6    | 33:BA:128:G:N7     | 2.84                     | 0.46              |
| 33:BA:186:C:H1'   | 52:BT:75:LYS:HD3   | 1.98                     | 0.46              |
| 33:BA:254:G:H5''  | 49:BQ:67:SER:CB    | 2.45                     | 0.46              |
| 33:BA:307:C:H6    | 33:BA:307:C:H5''   | 1.81                     | 0.46              |
| 33:BA:323:U:O4    | 33:BA:324:G:C6     | 2.69                     | 0.46              |
| 33:BA:416:G:C6    | 33:BA:417:G:N7     | 2.83                     | 0.46              |
| 33:BA:537:G:H8    | 33:BA:537:G:C3'    | 2.22                     | 0.46              |
| 33:BA:571:U:H3'   | 33:BA:572:A:H5''   | 1.97                     | 0.46              |
| 33:BA:573:A:H1'   | 33:BA:883:C:O2'    | 2.15                     | 0.46              |
| 33:BA:600:A:H5''  | 40:BH:88:LYS:HG2   | 1.97                     | 0.46              |
| 33:BA:640:A:H2'   | 40:BH:106:SER:CB   | 2.46                     | 0.46              |
| 33:BA:648:A:C2    | 33:BA:649:A:C5     | 3.03                     | 0.46              |
| 33:BA:650:G:N3    | 33:BA:651:C:C6     | 2.84                     | 0.46              |
| 33:BA:683:G:C8    | 33:BA:683:G:C5'    | 2.96                     | 0.46              |
| 33:BA:697:U:H3    | 33:BA:798:U:C1'    | 2.29                     | 0.46              |
| 33:BA:887:G:H3'   | 33:BA:888:G:C8     | 2.50                     | 0.46              |
| 33:BA:960:U:C5    | 51:BS:77:ARG:HD2   | 2.50                     | 0.46              |
| 33:BA:1124:G:H1   | 33:BA:1149:C:H42   | 1.63                     | 0.46              |
| 33:BA:1279:G:C8   | 33:BA:1279:G:C3'   | 2.99                     | 0.46              |
| 34:BB:27:LYS:HB3  | 34:BB:28:PRO:CD    | 2.41                     | 0.46              |
| 34:BB:65:LYS:CB   | 34:BB:89:PHE:HE1   | 2.29                     | 0.46              |
| 35:BC:120:THR:HB  | 35:BC:188:ALA:HB2  | 1.98                     | 0.46              |
| 36:BD:10:LEU:HD21 | 36:BD:62:ARG:HB3   | 1.98                     | 0.46              |
| 36:BD:55:ARG:HD2  | 36:BD:55:ARG:N     | 2.31                     | 0.46              |
| 36:BD:64:TYR:C    | 36:BD:66:VAL:N     | 2.70                     | 0.46              |
| 38:BF:74:LEU:HG   | 38:BF:78:PHE:CE1   | 2.44                     | 0.46              |
| 39:BG:78:ARG:HD3  | 39:BG:78:ARG:O     | 2.16                     | 0.46              |
| 39:BG:112:ASP:CB  | 39:BG:118:ARG:HG3  | 2.45                     | 0.46              |
| 40:BH:34:ALA:HB3  | 40:BH:109:VAL:HG21 | 1.97                     | 0.46              |
| 40:BH:51:GLU:HG2  | 40:BH:52:GLY:N     | 2.31                     | 0.46              |
| 40:BH:60:LEU:HD12 | 40:BH:60:LEU:N     | 2.31                     | 0.46              |
| 41:BI:18:VAL:HG12 | 41:BI:20:ILE:HD11  | 1.98                     | 0.46              |
| 42:BJ:53:ILE:HD11 | 42:BJ:63:ASP:OD1   | 2.17                     | 0.46              |
| 42:BJ:92:LEU:O    | 42:BJ:93:ALA:HB3   | 2.16                     | 0.46              |
| 43:BK:71:ASP:O    | 43:BK:72:ALA:HB2   | 2.16                     | 0.46              |
| 44:BL:30:ARG:HB3  | 44:BL:57:THR:HG21  | 1.98                     | 0.46              |
| 44:BL:49:ARG:NH1  | 44:BL:88:ASP:OD1   | 2.49                     | 0.46              |
| 45:BM:58:GLU:HG3  | 45:BM:61:LYS:NZ    | 2.31                     | 0.46              |
| 46:BN:32:ASP:C    | 46:BN:34:ASN:H     | 2.19                     | 0.46              |
| 52:BT:53:MET:CE   | 52:BT:78:LEU:HD13  | 2.46                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:C0:43:THR:HG21   | 20:CN:100:CYS:HA   | 1.98                     | 0.46              |
| 3:C2:40:ALA:HA     | 8:CB:458:G:H3'     | 1.98                     | 0.46              |
| 7:CA:29:A:C2       | 7:CA:30:C:N4       | 2.83                     | 0.46              |
| 8:CB:118:A:H3'     | 8:CB:119:A:C5'     | 2.45                     | 0.46              |
| 8:CB:262:A:H2'     | 8:CB:263:G:C5'     | 2.46                     | 0.46              |
| 8:CB:480:A:H4'     | 27:CU:40:LEU:CD1   | 2.36                     | 0.46              |
| 8:CB:569:U:H1'     | 8:CB:947:A:O4'     | 2.15                     | 0.46              |
| 8:CB:599:A:O2'     | 11:CE:27:LEU:HD22  | 2.16                     | 0.46              |
| 8:CB:616:A:C2      | 8:CB:617:G:H1'     | 2.51                     | 0.46              |
| 8:CB:626:A:H3'     | 8:CB:627:A:H5'     | 1.97                     | 0.46              |
| 8:CB:763:G:O2'     | 8:CB:764:A:H5'     | 2.16                     | 0.46              |
| 8:CB:926:G:H3'     | 8:CB:926:G:C8      | 2.51                     | 0.46              |
| 8:CB:945:A:H2      | 8:CB:2448:A:O4'    | 1.99                     | 0.46              |
| 8:CB:1153:C:OP2    | 55:CB:5206:HOH:O   | 2.19                     | 0.46              |
| 8:CB:1265:A:H61    | 8:CB:2013:A:H5''   | 1.81                     | 0.46              |
| 8:CB:1282:U:H2'    | 8:CB:1283:G:O4'    | 2.16                     | 0.46              |
| 8:CB:1453:A:C2     | 20:CN:74:GLU:HA    | 2.51                     | 0.46              |
| 8:CB:1473:G:H2'    | 8:CB:1474:U:C6     | 2.51                     | 0.46              |
| 8:CB:1560:G:C2     | 8:CB:1561:C:C2     | 3.03                     | 0.46              |
| 8:CB:1654:A:N3     | 8:CB:1654:A:H2'    | 2.31                     | 0.46              |
| 8:CB:1933:G:C8     | 8:CB:1933:G:H3'    | 2.51                     | 0.46              |
| 8:CB:2065:C:O2'    | 8:CB:2449:U:N3     | 2.48                     | 0.46              |
| 8:CB:2220:U:H6     | 8:CB:2220:U:O5'    | 1.98                     | 0.46              |
| 8:CB:2277:G:C6     | 8:CB:2278:A:N7     | 2.84                     | 0.46              |
| 8:CB:2280:G:N1     | 8:CB:2281:A:N7     | 2.64                     | 0.46              |
| 8:CB:2294:G:C6     | 8:CB:2295:C:C5     | 3.04                     | 0.46              |
| 8:CB:2392:A:C8     | 8:CB:2429:G:C6     | 3.03                     | 0.46              |
| 8:CB:2483:C:C2'    | 8:CB:2484:G:O5'    | 2.64                     | 0.46              |
| 8:CB:2568:U:O2     | 8:CB:2569:G:N9     | 2.49                     | 0.46              |
| 8:CB:2717:C:H1'    | 22:CP:95:LYS:HZ1   | 1.80                     | 0.46              |
| 9:CC:257:ARG:CB    | 9:CC:261:ARG:CZ    | 2.94                     | 0.46              |
| 10:CD:46:ARG:O     | 10:CD:47:ALA:CB    | 2.63                     | 0.46              |
| 10:CD:68:PHE:HB2   | 10:CD:90:PHE:CZ    | 2.49                     | 0.46              |
| 10:CD:178:VAL:CG2  | 10:CD:179:ARG:H    | 2.11                     | 0.46              |
| 11:CE:126:VAL:HG22 | 11:CE:128:ALA:H    | 1.80                     | 0.46              |
| 11:CE:141:MET:SD   | 11:CE:185:LYS:HE3  | 2.57                     | 0.46              |
| 11:CE:186:VAL:O    | 11:CE:186:VAL:HG12 | 2.16                     | 0.46              |
| 12:CF:135:ILE:HG23 | 45:DM:70:ARG:NH1   | 2.31                     | 0.46              |
| 17:CK:30:ARG:HG2   | 17:CK:31:ARG:H     | 1.81                     | 0.46              |
| 21:CO:17:LYS:HD3   | 21:CO:20:GLU:CG    | 2.46                     | 0.46              |
| 21:CO:25:ARG:CG    | 21:CO:94:ARG:HH12  | 2.29                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:CS:56:ALA:HA   | 25:CS:59:GLU:CG    | 2.46                     | 0.46              |
| 27:CU:96:LYS:O    | 27:CU:97:SER:HB3   | 2.16                     | 0.46              |
| 30:CX:49:ASP:CA   | 30:CX:52:ARG:HD2   | 2.31                     | 0.46              |
| 31:CY:4:ILE:HA    | 31:CY:36:GLU:HB2   | 1.98                     | 0.46              |
| 33:DA:93:U:O5'    | 33:DA:93:U:H6      | 1.99                     | 0.46              |
| 33:DA:246:A:C4    | 33:DA:279:A:N6     | 2.84                     | 0.46              |
| 33:DA:357:G:C4    | 33:DA:358:U:H5     | 2.34                     | 0.46              |
| 33:DA:590:U:OP1   | 40:DH:29:SER:HA    | 2.15                     | 0.46              |
| 33:DA:685:G:H2'   | 33:DA:686:U:C5     | 2.51                     | 0.46              |
| 33:DA:722:G:N1    | 33:DA:724:G:C8     | 2.84                     | 0.46              |
| 33:DA:743:A:H3'   | 33:DA:743:A:H8     | 1.81                     | 0.46              |
| 33:DA:756:C:H2'   | 33:DA:757:U:C6     | 2.51                     | 0.46              |
| 33:DA:786:G:C6    | 33:DA:787:A:C8     | 3.04                     | 0.46              |
| 33:DA:848:C:O5'   | 33:DA:848:C:H6     | 1.99                     | 0.46              |
| 33:DA:990:C:H2'   | 33:DA:991:U:O4'    | 2.15                     | 0.46              |
| 33:DA:1024:G:O2'  | 33:DA:1025:U:H5'   | 2.16                     | 0.46              |
| 33:DA:1384:C:C4   | 33:DA:1385:G:N7    | 2.84                     | 0.46              |
| 33:DA:1386:G:C2'  | 33:DA:1387:G:H8    | 2.21                     | 0.46              |
| 35:DC:46:LEU:HD12 | 35:DC:46:LEU:O     | 2.16                     | 0.46              |
| 35:DC:66:THR:HA   | 35:DC:101:ASN:HB2  | 1.97                     | 0.46              |
| 36:DD:13:ARG:CD   | 36:DD:55:ARG:HH21  | 2.26                     | 0.46              |
| 36:DD:33:ILE:O    | 36:DD:35:GLN:HG3   | 2.16                     | 0.46              |
| 36:DD:43:ARG:O    | 36:DD:45:PRO:CD    | 2.51                     | 0.46              |
| 36:DD:54:LEU:O    | 36:DD:55:ARG:C     | 2.55                     | 0.46              |
| 36:DD:90:LEU:HD11 | 36:DD:194:ILE:HD11 | 1.98                     | 0.46              |
| 37:DE:149:PRO:O   | 37:DE:152:VAL:HG23 | 2.16                     | 0.46              |
| 39:DG:14:ASP:OD2  | 39:DG:22:LEU:HB2   | 2.16                     | 0.46              |
| 39:DG:136:LYS:O   | 39:DG:139:ASP:HB3  | 2.16                     | 0.46              |
| 45:DM:12:LYS:O    | 45:DM:17:ALA:HB2   | 2.16                     | 0.46              |
| 45:DM:38:ILE:CG1  | 45:DM:55:LEU:HD21  | 2.45                     | 0.46              |
| 45:DM:100:ARG:HE  | 45:DM:100:ARG:HB2  | 1.47                     | 0.46              |
| 45:DM:104:ASN:HA  | 45:DM:106:ARG:NH1  | 2.31                     | 0.46              |
| 49:DQ:23:ALA:C    | 49:DQ:24:ILE:HD12  | 2.36                     | 0.46              |
| 50:DR:55:ALA:HA   | 50:DR:58:ILE:HD12  | 1.98                     | 0.46              |
| 52:DT:7:LYS:O     | 52:DT:10:ALA:CB    | 2.63                     | 0.46              |
| 7:AA:20:G:N1      | 7:AA:21:G:C5       | 2.84                     | 0.45              |
| 7:AA:107:G:O2'    | 7:AA:108:A:O5'     | 2.34                     | 0.45              |
| 8:AB:42:A:C5      | 8:AB:43:G:N7       | 2.84                     | 0.45              |
| 8:AB:285:G:C6     | 8:AB:286:U:C4      | 3.04                     | 0.45              |
| 8:AB:366:C:C6     | 8:AB:366:C:H3'     | 2.51                     | 0.45              |
| 8:AB:411:G:H4'    | 8:AB:412:A:C5'     | 2.46                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:462:C:O5'     | 8:AB:462:C:H6     | 1.99                     | 0.45              |
| 8:AB:482:A:N7      | 8:AB:506:G:C4     | 2.83                     | 0.45              |
| 8:AB:663:G:P       | 18:AL:25:SER:HB3  | 2.55                     | 0.45              |
| 8:AB:741:U:H2'     | 8:AB:742:A:C8     | 2.51                     | 0.45              |
| 8:AB:988:A:C2      | 8:AB:989:G:C2     | 3.04                     | 0.45              |
| 8:AB:1225:G:C5     | 8:AB:1226:A:C6    | 3.04                     | 0.45              |
| 8:AB:1252:G:O2'    | 8:AB:1253:A:O4'   | 2.32                     | 0.45              |
| 8:AB:1365:A:H4'    | 32:AZ:10:GLU:HG3  | 1.97                     | 0.45              |
| 8:AB:1862:G:C2     | 8:AB:1881:C:N3    | 2.84                     | 0.45              |
| 8:AB:2020:A:N6     | 8:AB:2022:U:N3    | 2.64                     | 0.45              |
| 8:AB:2033:A:H8     | 8:AB:2033:A:O5'   | 1.99                     | 0.45              |
| 8:AB:2201:G:N2     | 8:AB:2223:G:C4    | 2.83                     | 0.45              |
| 8:AB:2233:U:H6     | 8:AB:2233:U:H3'   | 1.81                     | 0.45              |
| 8:AB:2291:U:O2     | 8:AB:2292:U:C2    | 2.69                     | 0.45              |
| 8:AB:2604:U:H2'    | 8:AB:2605:U:H6    | 1.81                     | 0.45              |
| 8:AB:2624:G:C8     | 8:AB:2624:G:H3'   | 2.52                     | 0.45              |
| 8:AB:2641:G:H5'    | 8:AB:2641:G:C8    | 2.50                     | 0.45              |
| 8:AB:2899:A:O2'    | 8:AB:2900:A:H5'   | 2.16                     | 0.45              |
| 9:AC:32:LEU:HB3    | 9:AC:61:TYR:HE1   | 1.76                     | 0.45              |
| 10:AD:22:ILE:O     | 10:AD:22:ILE:CG2  | 2.63                     | 0.45              |
| 10:AD:55:LYS:O     | 10:AD:56:LYS:C    | 2.54                     | 0.45              |
| 10:AD:119:ALA:HB1  | 10:AD:123:LYS:HB2 | 1.97                     | 0.45              |
| 11:AE:113:VAL:HG13 | 11:AE:114:ARG:N   | 2.23                     | 0.45              |
| 12:AF:107:VAL:HG12 | 12:AF:113:PHE:CZ  | 2.51                     | 0.45              |
| 13:AG:97:VAL:HG11  | 13:AG:123:GLU:CG  | 2.46                     | 0.45              |
| 15:AI:91:LYS:N     | 15:AI:92:PRO:CD   | 2.78                     | 0.45              |
| 16:AJ:34:ARG:HD2   | 16:AJ:39:LYS:HA   | 1.98                     | 0.45              |
| 16:AJ:84:ILE:CG2   | 16:AJ:85:LYS:H    | 2.29                     | 0.45              |
| 16:AJ:113:PRO:O    | 16:AJ:114:LEU:HB3 | 2.16                     | 0.45              |
| 18:AL:55:MET:N     | 18:AL:56:PRO:HD3  | 2.30                     | 0.45              |
| 20:AN:126:ALA:O    | 20:AN:127:GLU:CB  | 2.56                     | 0.45              |
| 22:AP:31:VAL:O     | 22:AP:33:GLU:N    | 2.49                     | 0.45              |
| 23:AQ:103:VAL:O    | 23:AQ:107:ALA:N   | 2.47                     | 0.45              |
| 27:AU:9:GLU:O      | 27:AU:10:VAL:HG13 | 2.15                     | 0.45              |
| 28:AV:72:VAL:HG12  | 28:AV:93:ARG:HA   | 1.98                     | 0.45              |
| 30:AX:25:GLN:O     | 30:AX:26:PHE:C    | 2.54                     | 0.45              |
| 31:AY:35:VAL:CG1   | 31:AY:36:GLU:H    | 2.14                     | 0.45              |
| 33:BA:14:U:O2      | 33:BA:14:U:H2'    | 2.16                     | 0.45              |
| 33:BA:176:C:H2'    | 33:BA:177:G:N3    | 2.31                     | 0.45              |
| 33:BA:466:A:H5''   | 33:BA:467:U:OP1   | 2.15                     | 0.45              |
| 33:BA:545:C:C2'    | 33:BA:546:A:H5'   | 2.46                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:625:U:H4'   | 48:BP:16:PHE:CD2   | 2.49                     | 0.45              |
| 33:BA:927:G:P     | 33:BA:1503:A:H8    | 2.38                     | 0.45              |
| 33:BA:940:C:N3    | 33:BA:941:G:C5     | 2.84                     | 0.45              |
| 33:BA:977:A:H4'   | 33:BA:981:U:O2     | 2.16                     | 0.45              |
| 33:BA:1198:G:H2'  | 33:BA:1199:U:O4'   | 2.15                     | 0.45              |
| 33:BA:1217:C:O5'  | 33:BA:1217:C:H6    | 1.99                     | 0.45              |
| 33:BA:1253:G:H1'  | 33:BA:1355:G:O2'   | 2.16                     | 0.45              |
| 33:BA:1405:G:H22  | 33:BA:1517:G:H22   | 1.62                     | 0.45              |
| 33:BA:1489:G:H2'  | 33:BA:1490:U:C5'   | 2.45                     | 0.45              |
| 33:BA:1493:A:C2'  | 33:BA:1494:G:H5''  | 2.46                     | 0.45              |
| 33:BA:1511:G:H2'  | 33:BA:1512:U:O4'   | 2.16                     | 0.45              |
| 33:BA:1530:G:C2   | 33:BA:1531:A:N6    | 2.84                     | 0.45              |
| 34:BB:84:LEU:O    | 34:BB:84:LEU:HD23  | 2.16                     | 0.45              |
| 40:BH:64:TYR:HA   | 40:BH:70:VAL:HG23  | 1.97                     | 0.45              |
| 42:BJ:33:GLY:N    | 42:BJ:83:THR:HG21  | 2.27                     | 0.45              |
| 43:BK:32:THR:O    | 43:BK:32:THR:CG2   | 2.64                     | 0.45              |
| 44:BL:49:ARG:HH12 | 44:BL:88:ASP:CG    | 2.19                     | 0.45              |
| 46:BN:16:ALA:HA   | 46:BN:54:SER:OG    | 2.16                     | 0.45              |
| 47:BO:32:THR:OG1  | 47:BO:62:ARG:HD2   | 2.16                     | 0.45              |
| 47:BO:32:THR:HG22 | 47:BO:33:ALA:N     | 2.31                     | 0.45              |
| 51:BS:27:LYS:HB2  | 51:BS:28:LYS:HD3   | 1.98                     | 0.45              |
| 51:BS:48:ILE:CG2  | 51:BS:49:ALA:N     | 2.79                     | 0.45              |
| 52:BT:18:LYS:HE3  | 52:BT:18:LYS:HB2   | 1.80                     | 0.45              |
| 52:BT:81:GLN:O    | 52:BT:82:ILE:HG23  | 2.16                     | 0.45              |
| 53:BU:17:ARG:HA   | 53:BU:20:ARG:HB2   | 1.98                     | 0.45              |
| 1:C0:41:HIS:NE2   | 1:C0:42:ILE:CG2    | 2.78                     | 0.45              |
| 3:C2:17:GLY:O     | 3:C2:18:PHE:C      | 2.53                     | 0.45              |
| 8:CB:120:U:H5''   | 8:CB:122:G:OP2     | 2.17                     | 0.45              |
| 8:CB:153:U:H3'    | 8:CB:153:U:C6      | 2.51                     | 0.45              |
| 8:CB:178:G:O5'    | 8:CB:178:G:H8      | 1.99                     | 0.45              |
| 8:CB:263:G:C6     | 8:CB:264:C:C4      | 3.04                     | 0.45              |
| 8:CB:278:A:N1     | 8:CB:362:A:C5      | 2.84                     | 0.45              |
| 8:CB:406:G:H2'    | 8:CB:407:G:O5'     | 2.16                     | 0.45              |
| 8:CB:418:C:C2     | 8:CB:419:U:C6      | 3.04                     | 0.45              |
| 8:CB:556:A:C2     | 8:CB:557:C:N1      | 2.84                     | 0.45              |
| 8:CB:561:G:O5'    | 8:CB:561:G:C8      | 2.56                     | 0.45              |
| 8:CB:635:C:OP2    | 18:CL:109:LYS:HE2  | 2.16                     | 0.45              |
| 8:CB:636:G:H3'    | 18:CL:128:THR:HG22 | 1.99                     | 0.45              |
| 8:CB:1267:U:H1'   | 55:CB:5227:HOH:O   | 2.15                     | 0.45              |
| 8:CB:1358:G:C2    | 8:CB:1374:G:O6     | 2.69                     | 0.45              |
| 8:CB:1650:A:H2'   | 8:CB:1651:G:O4'    | 2.16                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1797:G:H2'    | 8:CB:1798:U:H6     | 1.80                     | 0.45              |
| 8:CB:1931:U:H2'    | 8:CB:1932:A:O4'    | 2.16                     | 0.45              |
| 8:CB:2048:G:O4'    | 8:CB:2823:A:N1     | 2.49                     | 0.45              |
| 8:CB:2090:A:C2     | 8:CB:2230:G:C5     | 3.04                     | 0.45              |
| 8:CB:2201:G:H5'    | 8:CB:2202:U:OP2    | 2.16                     | 0.45              |
| 8:CB:2204:G:C5     | 8:CB:2221:G:C2     | 3.04                     | 0.45              |
| 8:CB:2305:U:C2     | 12:CF:150:GLY:HA3  | 2.51                     | 0.45              |
| 8:CB:2487:G:N3     | 8:CB:2488:G:C8     | 2.85                     | 0.45              |
| 8:CB:2622:U:O2'    | 8:CB:2825:G:N7     | 2.49                     | 0.45              |
| 8:CB:2648:G:N3     | 8:CB:2673:G:C2     | 2.84                     | 0.45              |
| 8:CB:2820:A:O3'    | 20:CN:2:ARG:HD2    | 2.15                     | 0.45              |
| 8:CB:2891:U:H2'    | 8:CB:2892:G:H5'    | 1.98                     | 0.45              |
| 9:CC:47:ARG:HB3    | 9:CC:48:ILE:H      | 1.48                     | 0.45              |
| 9:CC:119:VAL:HG13  | 9:CC:133:ASN:HD21  | 1.81                     | 0.45              |
| 9:CC:207:ALA:O     | 9:CC:208:GLY:C     | 2.55                     | 0.45              |
| 10:CD:140:HIS:O    | 10:CD:141:ARG:CB   | 2.64                     | 0.45              |
| 12:CF:33:ILE:HD11  | 12:CF:90:LEU:CB    | 2.39                     | 0.45              |
| 13:CG:143:VAL:O    | 13:CG:147:LEU:HD12 | 2.16                     | 0.45              |
| 14:CH:7:ASP:O      | 14:CH:14:SER:O     | 2.34                     | 0.45              |
| 14:CH:53:GLU:HG2   | 14:CH:53:GLU:O     | 2.16                     | 0.45              |
| 18:CL:18:ARG:CZ    | 18:CL:20:GLY:HA3   | 2.47                     | 0.45              |
| 18:CL:89:VAL:O     | 18:CL:96:LYS:HE2   | 2.16                     | 0.45              |
| 19:CM:92:TRP:CG    | 19:CM:93:VAL:N     | 2.81                     | 0.45              |
| 20:CN:97:ILE:O     | 20:CN:97:ILE:HG12  | 2.16                     | 0.45              |
| 21:CO:54:VAL:O     | 21:CO:54:VAL:HG13  | 2.15                     | 0.45              |
| 22:CP:92:ARG:NH2   | 22:CP:111:GLU:O    | 2.49                     | 0.45              |
| 23:CQ:46:TYR:HD1   | 24:CR:79:ARG:HB3   | 1.80                     | 0.45              |
| 24:CR:82:HIS:CD2   | 24:CR:84:ARG:HH21  | 2.35                     | 0.45              |
| 25:CS:110:ARG:HH11 | 25:CS:110:ARG:CG   | 2.05                     | 0.45              |
| 26:CT:8:LEU:HD11   | 30:CX:26:PHE:HZ    | 1.75                     | 0.45              |
| 28:CV:37:PRO:O     | 28:CV:38:LEU:HB2   | 2.16                     | 0.45              |
| 33:DA:255:G:C6     | 33:DA:256:U:C4     | 3.04                     | 0.45              |
| 33:DA:540:G:C4     | 33:DA:541:G:C8     | 3.04                     | 0.45              |
| 33:DA:558:G:OP2    | 33:DA:560:A:OP1    | 2.35                     | 0.45              |
| 33:DA:622:A:N7     | 33:DA:623:C:C2     | 2.84                     | 0.45              |
| 33:DA:622:A:N6     | 33:DA:623:C:H1'    | 2.30                     | 0.45              |
| 33:DA:719:C:C5     | 33:DA:720:C:C4     | 3.05                     | 0.45              |
| 33:DA:797:C:H2'    | 33:DA:798:U:H5'    | 1.92                     | 0.45              |
| 33:DA:1187:G:H3'   | 33:DA:1188:A:C8    | 2.51                     | 0.45              |
| 33:DA:1206:G:C8    | 33:DA:1206:G:C5'   | 2.92                     | 0.45              |
| 33:DA:1329:A:OP1   | 45:DM:27:THR:HB    | 2.16                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:1356:G:H2'  | 33:DA:1357:A:H8    | 1.76                     | 0.45              |
| 33:DA:1375:A:O2'  | 33:DA:1376:U:H5'   | 2.16                     | 0.45              |
| 33:DA:1417:G:H21  | 33:DA:1482:G:H2'   | 1.79                     | 0.45              |
| 33:DA:1426:G:O2'  | 33:DA:1427:C:O4'   | 2.32                     | 0.45              |
| 33:DA:1431:A:N1   | 33:DA:1432:G:N2    | 2.63                     | 0.45              |
| 33:DA:1455:G:C4   | 33:DA:1456:A:C8    | 3.05                     | 0.45              |
| 34:DB:19:THR:HA   | 34:DB:37:VAL:HG23  | 1.98                     | 0.45              |
| 34:DB:116:LEU:CD1 | 34:DB:140:LEU:HD21 | 2.46                     | 0.45              |
| 35:DC:32:LEU:O    | 35:DC:36:PHE:CD1   | 2.69                     | 0.45              |
| 43:DK:121:ARG:HA  | 43:DK:122:PRO:HD2  | 1.86                     | 0.45              |
| 44:DL:14:LYS:HE2  | 44:DL:15:VAL:O     | 2.17                     | 0.45              |
| 47:DO:5:GLU:HA    | 47:DO:8:ALA:HB3    | 1.97                     | 0.45              |
| 47:DO:59:VAL:O    | 47:DO:60:SER:C     | 2.53                     | 0.45              |
| 47:DO:66:LEU:HB3  | 47:DO:77:TYR:HE1   | 1.81                     | 0.45              |
| 48:DP:4:ILE:HG12  | 48:DP:21:VAL:HG22  | 1.98                     | 0.45              |
| 53:DU:34:ARG:HE   | 53:DU:35:GLU:N     | 2.14                     | 0.45              |
| 8:AB:42:A:N3      | 8:AB:438:G:C2      | 2.84                     | 0.45              |
| 8:AB:170:U:H2'    | 8:AB:171:U:C6      | 2.51                     | 0.45              |
| 8:AB:187:G:C8     | 8:AB:187:G:C3'     | 2.99                     | 0.45              |
| 8:AB:198:C:H4'    | 8:AB:2243:U:O2'    | 2.16                     | 0.45              |
| 8:AB:282:A:C5     | 8:AB:283:G:N7      | 2.83                     | 0.45              |
| 8:AB:296:U:H3     | 8:AB:342:A:N6      | 2.14                     | 0.45              |
| 8:AB:415:A:C2     | 8:AB:2409:G:N1     | 2.84                     | 0.45              |
| 8:AB:459:U:O2'    | 8:AB:460:A:H5'     | 2.16                     | 0.45              |
| 8:AB:675:A:C6     | 8:AB:676:A:C6      | 3.04                     | 0.45              |
| 8:AB:856:G:N2     | 8:AB:921:C:C2      | 2.81                     | 0.45              |
| 8:AB:871:U:HO2'   | 19:AM:68:PHE:HB3   | 1.80                     | 0.45              |
| 8:AB:968:C:C3'    | 8:AB:969:G:H5''    | 2.46                     | 0.45              |
| 8:AB:1071:G:C6    | 8:AB:1072:C:N3     | 2.84                     | 0.45              |
| 8:AB:1193:G:N2    | 8:AB:1194:A:H1'    | 2.31                     | 0.45              |
| 8:AB:1214:A:H2'   | 8:AB:1215:G:H8     | 1.81                     | 0.45              |
| 8:AB:1239:G:C4    | 8:AB:1240:U:C5     | 3.04                     | 0.45              |
| 8:AB:1254:A:N6    | 11:AE:77:ILE:HD12  | 2.31                     | 0.45              |
| 8:AB:1278:C:O3'   | 20:AN:34:ILE:HG22  | 2.15                     | 0.45              |
| 8:AB:1740:G:H2'   | 8:AB:1741:C:C6     | 2.51                     | 0.45              |
| 8:AB:1861:G:C8    | 8:AB:1861:G:C5'    | 2.98                     | 0.45              |
| 8:AB:2192:U:H6    | 8:AB:2192:U:C5'    | 2.28                     | 0.45              |
| 8:AB:2256:G:N2    | 8:AB:2257:U:H1'    | 2.31                     | 0.45              |
| 8:AB:2261:C:C4    | 8:AB:2280:G:N2     | 2.84                     | 0.45              |
| 8:AB:2421:G:C5'   | 8:AB:2421:G:C8     | 2.99                     | 0.45              |
| 8:AB:2435:A:C2    | 8:AB:2436:G:H1'    | 2.50                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2442:C:H3'    | 8:AB:2442:C:C6    | 2.52                     | 0.45              |
| 8:AB:2459:A:N6     | 8:AB:2494:G:C2    | 2.84                     | 0.45              |
| 8:AB:2631:G:C5     | 8:AB:2632:A:C8    | 3.03                     | 0.45              |
| 8:AB:2816:G:N1     | 8:AB:2817:U:C4    | 2.85                     | 0.45              |
| 9:AC:22:GLU:CB     | 9:AC:202:ARG:HE   | 2.29                     | 0.45              |
| 9:AC:62:ARG:O      | 9:AC:63:ILE:C     | 2.53                     | 0.45              |
| 9:AC:204:LEU:HD22  | 9:AC:210:ALA:HB1  | 1.97                     | 0.45              |
| 9:AC:208:GLY:C     | 9:AC:210:ALA:H    | 2.17                     | 0.45              |
| 9:AC:250:GLN:OE1   | 9:AC:250:GLN:N    | 2.49                     | 0.45              |
| 10:AD:33:ARG:NH2   | 10:AD:91:THR:CG2  | 2.79                     | 0.45              |
| 11:AE:25:GLU:C     | 11:AE:27:LEU:N    | 2.68                     | 0.45              |
| 12:AF:33:ILE:HG22  | 12:AF:155:ILE:CG1 | 2.38                     | 0.45              |
| 15:AI:70:THR:HG22  | 15:AI:71:LYS:N    | 2.30                     | 0.45              |
| 15:AI:89:SER:HB2   | 15:AI:97:VAL:HG21 | 1.97                     | 0.45              |
| 19:AM:131:VAL:HG22 | 19:AM:131:VAL:O   | 2.16                     | 0.45              |
| 20:AN:66:ALA:HA    | 20:AN:69:ARG:HB2  | 1.98                     | 0.45              |
| 21:AO:37:ALA:O     | 21:AO:38:GLN:HG2  | 2.17                     | 0.45              |
| 21:AO:56:LYS:HD3   | 21:AO:56:LYS:C    | 2.36                     | 0.45              |
| 23:AQ:24:TYR:O     | 23:AQ:27:ARG:HB2  | 2.16                     | 0.45              |
| 24:AR:31:GLU:O     | 24:AR:32:THR:CB   | 2.63                     | 0.45              |
| 28:AV:4:ILE:O      | 28:AV:63:ILE:HA   | 2.15                     | 0.45              |
| 28:AV:25:LYS:HA    | 28:AV:42:LEU:O    | 2.17                     | 0.45              |
| 33:BA:142:G:C2     | 33:BA:143:A:C4    | 3.04                     | 0.45              |
| 33:BA:393:A:N3     | 33:BA:394:G:H8    | 2.13                     | 0.45              |
| 33:BA:460:A:C2     | 33:BA:462:G:N7    | 2.84                     | 0.45              |
| 33:BA:474:G:H2'    | 33:BA:475:C:C6    | 2.51                     | 0.45              |
| 33:BA:587:G:H1'    | 33:BA:755:G:N2    | 2.31                     | 0.45              |
| 33:BA:677:U:C2'    | 33:BA:678:U:H5'   | 2.45                     | 0.45              |
| 33:BA:700:G:O2'    | 33:BA:704:A:C8    | 2.68                     | 0.45              |
| 33:BA:742:G:C8     | 33:BA:742:G:C3'   | 2.98                     | 0.45              |
| 33:BA:892:A:C2     | 33:BA:907:A:N3    | 2.84                     | 0.45              |
| 33:BA:976:G:OP1    | 46:BN:70:HIS:HA   | 2.16                     | 0.45              |
| 33:BA:1151:A:H4'   | 33:BA:1152:A:OP1  | 2.16                     | 0.45              |
| 33:BA:1165:U:H2'   | 33:BA:1166:G:C5'  | 2.41                     | 0.45              |
| 33:BA:1213:A:O2'   | 33:BA:1214:C:O5'  | 2.32                     | 0.45              |
| 33:BA:1518:A:H2    | 33:BA:1519:A:C2   | 2.33                     | 0.45              |
| 37:BE:151:MET:HB2  | 37:BE:155:LYS:CG  | 2.44                     | 0.45              |
| 41:BI:23:GLY:HA2   | 41:BI:59:LYS:O    | 2.16                     | 0.45              |
| 42:BJ:30:LYS:HE2   | 42:BJ:30:LYS:O    | 2.16                     | 0.45              |
| 44:BL:13:ARG:HD2   | 44:BL:13:ARG:N    | 2.31                     | 0.45              |
| 46:BN:79:SER:O     | 46:BN:81:ILE:N    | 2.48                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BN:100:TRP:H    | 46:BN:100:TRP:HE3  | 1.62                     | 0.45              |
| 1:C0:27:LEU:CD1    | 8:CB:2886:A:C5     | 2.99                     | 0.45              |
| 8:CB:93:G:H2'      | 8:CB:94:A:C8       | 2.51                     | 0.45              |
| 8:CB:396:G:H5''    | 32:CZ:11:GLU:CD    | 2.35                     | 0.45              |
| 8:CB:451:U:O2      | 8:CB:453:A:N6      | 2.49                     | 0.45              |
| 8:CB:453:A:H4'     | 8:CB:472:A:N6      | 2.31                     | 0.45              |
| 8:CB:527:C:H5''    | 8:CB:2779:U:N3     | 2.31                     | 0.45              |
| 8:CB:571:U:O4      | 8:CB:575:A:C5      | 2.69                     | 0.45              |
| 8:CB:602:A:H4'     | 8:CB:604:G:H4'     | 1.98                     | 0.45              |
| 8:CB:751:A:N7      | 8:CB:789:A:N1      | 2.64                     | 0.45              |
| 8:CB:752:A:C3'     | 8:CB:753:A:H5'     | 2.45                     | 0.45              |
| 8:CB:824:U:C4      | 8:CB:825:A:N7      | 2.84                     | 0.45              |
| 8:CB:1057:A:N6     | 8:CB:1082:U:N3     | 2.64                     | 0.45              |
| 8:CB:1181:U:H2'    | 8:CB:1182:G:C8     | 2.51                     | 0.45              |
| 8:CB:1268:A:C2'    | 8:CB:1269:A:O5'    | 2.64                     | 0.45              |
| 8:CB:1317:G:C2     | 8:CB:1318:U:C2     | 3.04                     | 0.45              |
| 8:CB:1410:G:H5''   | 8:CB:1411:U:OP2    | 2.16                     | 0.45              |
| 8:CB:1661:G:C4     | 8:CB:1662:U:C5     | 3.03                     | 0.45              |
| 8:CB:1677:A:N1     | 8:CB:1678:A:C2     | 2.85                     | 0.45              |
| 8:CB:1708:C:O5'    | 8:CB:1708:C:H6     | 1.99                     | 0.45              |
| 8:CB:1803:A:O3'    | 9:CC:254:LYS:CD    | 2.50                     | 0.45              |
| 8:CB:1861:G:C2     | 8:CB:1882:U:C2     | 3.04                     | 0.45              |
| 8:CB:1890:A:C2     | 8:CB:2234:G:H1'    | 2.51                     | 0.45              |
| 8:CB:1897:G:C2     | 8:CB:1898:U:C2     | 3.05                     | 0.45              |
| 8:CB:1897:G:C2     | 8:CB:1898:U:O2     | 2.69                     | 0.45              |
| 8:CB:1911:U:O2'    | 8:CB:1912:A:H5'    | 2.16                     | 0.45              |
| 8:CB:2189:U:H3'    | 8:CB:2189:U:H6     | 1.80                     | 0.45              |
| 8:CB:2298:A:N3     | 8:CB:2298:A:H2'    | 2.30                     | 0.45              |
| 8:CB:2442:C:H3'    | 8:CB:2442:C:C6     | 2.51                     | 0.45              |
| 8:CB:2575:C:C5'    | 8:CB:2576:G:OP2    | 2.64                     | 0.45              |
| 8:CB:2734:A:N7     | 8:CB:2735:G:N9     | 2.63                     | 0.45              |
| 8:CB:2813:A:H2'    | 8:CB:2814:A:H8     | 1.82                     | 0.45              |
| 9:CC:15:VAL:HG12   | 9:CC:16:VAL:CG2    | 2.44                     | 0.45              |
| 9:CC:62:ARG:O      | 9:CC:63:ILE:C      | 2.54                     | 0.45              |
| 9:CC:66:PHE:O      | 9:CC:68:ARG:N      | 2.46                     | 0.45              |
| 15:CI:102:ARG:HB3  | 15:CI:102:ARG:HH11 | 1.78                     | 0.45              |
| 15:CI:125:THR:HG22 | 15:CI:129:GLU:OE2  | 2.16                     | 0.45              |
| 17:CK:105:ARG:O    | 17:CK:108:ARG:HB2  | 2.15                     | 0.45              |
| 18:CL:18:ARG:NH1   | 18:CL:20:GLY:CA    | 2.76                     | 0.45              |
| 22:CP:93:LYS:NZ    | 22:CP:97:TYR:CE2   | 2.84                     | 0.45              |
| 23:CQ:10:ARG:HB3   | 23:CQ:14:LYS:NZ    | 2.31                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 23:CQ:46:TYR:CD1  | 24:CR:78:ARG:C    | 2.89                     | 0.45              |
| 27:CU:3:LYS:O     | 27:CU:4:ILE:HB    | 2.15                     | 0.45              |
| 29:CW:36:ILE:HD12 | 29:CW:37:VAL:HG23 | 1.98                     | 0.45              |
| 30:CX:51:ALA:C    | 30:CX:53:VAL:N    | 2.70                     | 0.45              |
| 32:CZ:1:MET:HA    | 32:CZ:9:TYR:CZ    | 2.50                     | 0.45              |
| 32:CZ:48:GLN:NE2  | 32:CZ:49:ARG:H    | 2.13                     | 0.45              |
| 33:DA:18:C:OP1    | 37:DE:131:ASN:ND2 | 2.42                     | 0.45              |
| 33:DA:89:U:C5     | 33:DA:90:C:C5     | 3.05                     | 0.45              |
| 33:DA:136:C:O5'   | 33:DA:136:C:H6    | 1.99                     | 0.45              |
| 33:DA:185:U:O2    | 33:DA:192:A:N1    | 2.50                     | 0.45              |
| 33:DA:231:U:C2'   | 33:DA:232:G:H5''  | 2.45                     | 0.45              |
| 33:DA:451:A:O3'   | 33:DA:452:A:H8    | 1.99                     | 0.45              |
| 33:DA:596:A:N6    | 33:DA:645:G:C2    | 2.84                     | 0.45              |
| 33:DA:607:A:N7    | 33:DA:608:A:N7    | 2.65                     | 0.45              |
| 33:DA:787:A:O2'   | 33:DA:788:U:O5'   | 2.33                     | 0.45              |
| 33:DA:804:U:H5    | 33:DA:805:C:N4    | 2.00                     | 0.45              |
| 33:DA:895:G:N1    | 33:DA:896:C:C4    | 2.84                     | 0.45              |
| 33:DA:978:A:N1    | 33:DA:1319:A:H1'  | 2.31                     | 0.45              |
| 33:DA:1052:U:C4   | 33:DA:1200:C:C4   | 3.03                     | 0.45              |
| 33:DA:1059:C:H6   | 33:DA:1059:C:H3'  | 1.81                     | 0.45              |
| 33:DA:1251:A:C1'  | 33:DA:1370:G:H4'  | 2.47                     | 0.45              |
| 33:DA:1320:C:N3   | 33:DA:1321:U:C2   | 2.84                     | 0.45              |
| 33:DA:1424:U:O2'  | 33:DA:1425:U:C5'  | 2.64                     | 0.45              |
| 33:DA:1432:G:C1'  | 33:DA:1468:A:H62  | 2.28                     | 0.45              |
| 33:DA:1525:G:H5'' | 33:DA:1525:G:C8   | 2.49                     | 0.45              |
| 35:DC:56:ILE:O    | 35:DC:58:ARG:N    | 2.38                     | 0.45              |
| 35:DC:64:ARG:HG3  | 35:DC:99:GLN:OE1  | 2.16                     | 0.45              |
| 35:DC:166:TRP:O   | 35:DC:167:TYR:CB  | 2.64                     | 0.45              |
| 36:DD:116:LEU:CA  | 36:DD:119:HIS:HB2 | 2.36                     | 0.45              |
| 37:DE:144:GLU:C   | 37:DE:146:MET:N   | 2.69                     | 0.45              |
| 38:DF:53:LYS:O    | 38:DF:53:LYS:HD3  | 2.15                     | 0.45              |
| 39:DG:25:PHE:HE1  | 39:DG:104:VAL:CG2 | 2.29                     | 0.45              |
| 39:DG:45:ALA:CB   | 39:DG:116:ALA:HA  | 2.31                     | 0.45              |
| 40:DH:46:GLU:HG2  | 40:DH:63:LYS:HE2  | 1.98                     | 0.45              |
| 41:DI:94:ARG:HH11 | 41:DI:94:ARG:CG   | 2.19                     | 0.45              |
| 41:DI:116:GLY:O   | 41:DI:117:LEU:HG  | 2.15                     | 0.45              |
| 43:DK:95:THR:O    | 43:DK:98:ALA:HB3  | 2.15                     | 0.45              |
| 48:DP:42:ILE:O    | 48:DP:42:ILE:CG2  | 2.64                     | 0.45              |
| 1:A0:42:ILE:HD11  | 1:A0:44:ALA:HB3   | 1.98                     | 0.45              |
| 7:AA:13:G:H4'     | 7:AA:15:A:H2'     | 1.99                     | 0.45              |
| 7:AA:54:G:H2'     | 7:AA:55:U:H6      | 1.78                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 7:AA:78:A:N6     | 7:AA:98:G:O2'     | 2.45                     | 0.45              |
| 8:AB:245:G:C8    | 8:AB:245:G:C3'    | 2.99                     | 0.45              |
| 8:AB:271:G:C6    | 8:AB:367:G:C6     | 3.04                     | 0.45              |
| 8:AB:299:A:C8    | 8:AB:322:A:C2     | 3.05                     | 0.45              |
| 8:AB:411:G:H4'   | 8:AB:412:A:H5''   | 1.98                     | 0.45              |
| 8:AB:499:U:O4    | 8:AB:500:G:C6     | 2.69                     | 0.45              |
| 8:AB:534:U:O4'   | 23:AQ:44:TYR:HB3  | 2.17                     | 0.45              |
| 8:AB:541:A:H1'   | 8:AB:553:G:H22    | 1.81                     | 0.45              |
| 8:AB:637:A:H4'   | 8:AB:638:G:C4'    | 2.46                     | 0.45              |
| 8:AB:687:C:N4    | 8:AB:688:U:C2     | 2.84                     | 0.45              |
| 8:AB:725:G:C5    | 8:AB:726:G:C6     | 3.05                     | 0.45              |
| 8:AB:743:A:C5    | 8:AB:744:U:C5     | 3.04                     | 0.45              |
| 8:AB:856:G:N2    | 8:AB:922:C:N4     | 2.64                     | 0.45              |
| 8:AB:936:A:C6    | 8:AB:937:C:C4     | 3.05                     | 0.45              |
| 8:AB:969:G:C6    | 8:AB:970:U:C4     | 3.04                     | 0.45              |
| 8:AB:1055:G:N2   | 8:AB:1105:U:C2    | 2.85                     | 0.45              |
| 8:AB:1063:G:C6   | 8:AB:1064:C:C4    | 3.05                     | 0.45              |
| 8:AB:1120:G:C2'  | 8:AB:1121:C:H5'   | 2.46                     | 0.45              |
| 8:AB:1173:U:H2'  | 8:AB:1174:U:O4'   | 2.15                     | 0.45              |
| 8:AB:1598:A:H2'  | 8:AB:1598:A:N3    | 2.31                     | 0.45              |
| 8:AB:1708:C:C2   | 8:AB:1709:U:C5    | 3.04                     | 0.45              |
| 8:AB:1897:G:N1   | 8:AB:1898:U:O2    | 2.50                     | 0.45              |
| 8:AB:2024:G:C6   | 8:AB:2025:C:N4    | 2.84                     | 0.45              |
| 8:AB:2041:U:H2'  | 8:AB:2042:A:C8    | 2.51                     | 0.45              |
| 8:AB:2334:U:C1'  | 21:AO:12:THR:HB   | 2.37                     | 0.45              |
| 8:AB:2400:G:C5   | 8:AB:2401:U:C4    | 3.05                     | 0.45              |
| 8:AB:2486:C:H2'  | 8:AB:2487:G:O5'   | 2.15                     | 0.45              |
| 8:AB:2511:U:O4   | 8:AB:2512:C:C4    | 2.69                     | 0.45              |
| 8:AB:2516:A:H3'  | 8:AB:2517:C:H6    | 1.81                     | 0.45              |
| 8:AB:2519:U:C4   | 8:AB:2541:A:C5    | 3.05                     | 0.45              |
| 8:AB:2620:C:H4'  | 10:AD:161:MET:HB2 | 1.99                     | 0.45              |
| 8:AB:2739:U:H2'  | 8:AB:2740:A:H8    | 1.81                     | 0.45              |
| 8:AB:2751:G:OP1  | 13:AG:1:SER:HB2   | 2.17                     | 0.45              |
| 8:AB:2876:G:N7   | 8:AB:2877:G:N7    | 2.64                     | 0.45              |
| 8:AB:2884:U:H2'  | 8:AB:2885:G:O5'   | 2.16                     | 0.45              |
| 9:AC:89:ASN:N    | 9:AC:89:ASN:ND2   | 2.64                     | 0.45              |
| 9:AC:258:SER:O   | 9:AC:259:ASN:C    | 2.55                     | 0.45              |
| 10:AD:29:VAL:O   | 10:AD:30:GLU:O    | 2.34                     | 0.45              |
| 10:AD:206:ALA:O  | 10:AD:207:VAL:C   | 2.54                     | 0.45              |
| 11:AE:25:GLU:OE2 | 18:AL:17:LYS:HD2  | 2.16                     | 0.45              |
| 11:AE:79:ARG:O   | 11:AE:80:SER:CB   | 2.64                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 12:AF:76:PHE:HD1  | 12:AF:78:ILE:HD12  | 1.80                     | 0.45              |
| 14:AH:25:TYR:C    | 14:AH:27:ARG:N     | 2.68                     | 0.45              |
| 14:AH:125:THR:HA  | 14:AH:146:VAL:HG11 | 1.99                     | 0.45              |
| 16:AJ:54:ILE:CG2  | 16:AJ:55:ILE:N     | 2.80                     | 0.45              |
| 16:AJ:132:HIS:CD2 | 16:AJ:132:HIS:C    | 2.89                     | 0.45              |
| 17:AK:73:ASP:O    | 22:AP:76:HIS:CE1   | 2.69                     | 0.45              |
| 18:AL:33:ARG:HH22 | 18:AL:36:LYS:HZ3   | 1.62                     | 0.45              |
| 21:AO:5:SER:O     | 21:AO:6:ALA:HB2    | 2.16                     | 0.45              |
| 21:AO:84:GLU:HA   | 21:AO:87:ILE:CG2   | 2.47                     | 0.45              |
| 23:AQ:3:VAL:O     | 23:AQ:4:LYS:C      | 2.55                     | 0.45              |
| 23:AQ:40:LYS:HD2  | 23:AQ:40:LYS:HA    | 1.71                     | 0.45              |
| 24:AR:3:ALA:CB    | 24:AR:41:ILE:HG22  | 2.46                     | 0.45              |
| 27:AU:33:VAL:O    | 27:AU:63:ALA:O     | 2.34                     | 0.45              |
| 30:AX:41:HIS:O    | 30:AX:45:GLN:HB2   | 2.16                     | 0.45              |
| 33:BA:156:C:H42   | 33:BA:165:G:H1     | 1.64                     | 0.45              |
| 33:BA:214:C:O2'   | 33:BA:215:C:H5'    | 2.16                     | 0.45              |
| 33:BA:258:G:O6    | 33:BA:269:C:N3     | 2.50                     | 0.45              |
| 33:BA:662:U:C2'   | 33:BA:663:A:H8     | 2.23                     | 0.45              |
| 33:BA:789:U:C2'   | 33:BA:790:A:H5''   | 2.41                     | 0.45              |
| 33:BA:1037:C:H6   | 33:BA:1037:C:O5'   | 1.99                     | 0.45              |
| 33:BA:1042:A:H2'  | 33:BA:1043:G:O4'   | 2.17                     | 0.45              |
| 33:BA:1340:A:H3'  | 33:BA:1341:U:C6    | 2.52                     | 0.45              |
| 33:BA:1487:G:H2'  | 33:BA:1488:G:O4'   | 2.16                     | 0.45              |
| 33:BA:1500:A:OP1  | 55:BA:5276:HOH:O   | 2.21                     | 0.45              |
| 36:BD:61:ARG:NE   | 36:BD:66:VAL:O     | 2.49                     | 0.45              |
| 36:BD:63:ILE:HG23 | 36:BD:110:ARG:HH12 | 1.82                     | 0.45              |
| 36:BD:124:VAL:C   | 36:BD:126:GLY:N    | 2.69                     | 0.45              |
| 37:BE:49:TYR:HE2  | 37:BE:133:ILE:HG21 | 1.82                     | 0.45              |
| 38:BF:7:VAL:HG13  | 50:BR:64:LEU:HD21  | 1.99                     | 0.45              |
| 2:C1:7:LYS:HD2    | 8:CB:2284:A:OP2    | 2.17                     | 0.45              |
| 7:CA:14:U:HO2'    | 7:CA:15:A:P        | 2.39                     | 0.45              |
| 8:CB:71:A:H5''    | 8:CB:73:A:C8       | 2.52                     | 0.45              |
| 8:CB:112:U:C5     | 8:CB:113:U:C2      | 3.05                     | 0.45              |
| 8:CB:142:A:OP2    | 8:CB:142:A:H8      | 2.00                     | 0.45              |
| 8:CB:214:G:O2'    | 8:CB:215:G:H5'     | 2.16                     | 0.45              |
| 8:CB:235:U:H2'    | 8:CB:236:C:C6      | 2.44                     | 0.45              |
| 8:CB:319:G:C2     | 8:CB:320:A:C4      | 3.04                     | 0.45              |
| 8:CB:323:C:C5     | 11:CE:165:HIS:CD2  | 3.04                     | 0.45              |
| 8:CB:422:A:C2     | 8:CB:423:A:C5      | 3.04                     | 0.45              |
| 8:CB:707:G:H2'    | 8:CB:707:G:N3      | 2.31                     | 0.45              |
| 8:CB:743:A:H8     | 8:CB:743:A:O5'     | 1.98                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:856:G:N2     | 8:CB:921:C:C2      | 2.80                     | 0.45              |
| 8:CB:928:A:C2     | 8:CB:929:U:C2      | 3.04                     | 0.45              |
| 8:CB:1059:G:O2'   | 15:CI:135:MET:HG3  | 2.16                     | 0.45              |
| 8:CB:1326:U:C5    | 8:CB:1327:A:N7     | 2.84                     | 0.45              |
| 8:CB:1332:G:OP2   | 55:CB:5243:HOH:O   | 2.20                     | 0.45              |
| 8:CB:1466:U:C6    | 8:CB:1466:U:C3'    | 2.99                     | 0.45              |
| 8:CB:1704:C:C2    | 8:CB:1705:A:C8     | 3.04                     | 0.45              |
| 8:CB:1796:U:N3    | 8:CB:1797:G:C8     | 2.84                     | 0.45              |
| 8:CB:1858:A:C2    | 8:CB:1885:A:C8     | 3.05                     | 0.45              |
| 8:CB:1945:G:C2    | 8:CB:1946:U:C5     | 3.04                     | 0.45              |
| 8:CB:2269:G:C2'   | 8:CB:2270:A:H5'    | 2.46                     | 0.45              |
| 8:CB:2297:A:N7    | 8:CB:2298:A:N7     | 2.64                     | 0.45              |
| 8:CB:2511:U:H2'   | 8:CB:2512:C:H5'    | 1.98                     | 0.45              |
| 8:CB:2568:U:C2    | 8:CB:2569:G:C8     | 3.04                     | 0.45              |
| 8:CB:2583:G:C6    | 8:CB:2584:U:O2     | 2.69                     | 0.45              |
| 8:CB:2600:A:O2'   | 8:CB:2601:C:H5'    | 2.17                     | 0.45              |
| 8:CB:2755:C:HO2'  | 8:CB:2756:U:H6     | 1.64                     | 0.45              |
| 8:CB:2759:G:C2    | 8:CB:2760:C:C5     | 3.04                     | 0.45              |
| 8:CB:2768:U:C4    | 8:CB:2769:U:C4     | 3.04                     | 0.45              |
| 8:CB:2776:A:N1    | 8:CB:2778:A:C2     | 2.85                     | 0.45              |
| 9:CC:251:THR:HB   | 9:CC:252:LYS:H     | 1.59                     | 0.45              |
| 10:CD:146:ILE:CG1 | 10:CD:155:VAL:HG13 | 2.45                     | 0.45              |
| 11:CE:9:GLN:O     | 11:CE:11:ALA:N     | 2.38                     | 0.45              |
| 12:CF:106:ALA:O   | 12:CF:136:ILE:HG23 | 2.15                     | 0.45              |
| 14:CH:119:ASN:O   | 14:CH:121:VAL:HG13 | 2.17                     | 0.45              |
| 16:CJ:81:ILE:CG2  | 16:CJ:82:GLY:H     | 2.16                     | 0.45              |
| 16:CJ:135:GLN:C   | 16:CJ:137:PRO:HD2  | 2.37                     | 0.45              |
| 17:CK:75:SER:HA   | 22:CP:76:HIS:NE2   | 2.32                     | 0.45              |
| 19:CM:71:LYS:N    | 19:CM:72:PRO:HD3   | 2.31                     | 0.45              |
| 20:CN:49:GLU:O    | 20:CN:53:THR:HG23  | 2.16                     | 0.45              |
| 23:CQ:3:VAL:O     | 23:CQ:4:LYS:C      | 2.54                     | 0.45              |
| 23:CQ:67:ALA:C    | 23:CQ:69:ARG:N     | 2.69                     | 0.45              |
| 25:CS:25:ARG:HB2  | 25:CS:26:GLY:H     | 1.60                     | 0.45              |
| 27:CU:28:LEU:HD13 | 27:CU:31:GLY:HA3   | 1.98                     | 0.45              |
| 33:DA:131:A:N3    | 33:DA:232:G:C2     | 2.84                     | 0.45              |
| 33:DA:178:C:C4    | 33:DA:179:A:N7     | 2.84                     | 0.45              |
| 33:DA:233:C:H2'   | 33:DA:234:C:H5'    | 1.99                     | 0.45              |
| 33:DA:394:G:H2'   | 33:DA:394:G:N3     | 2.31                     | 0.45              |
| 33:DA:396:C:H3'   | 33:DA:396:C:C6     | 2.52                     | 0.45              |
| 33:DA:455:G:N2    | 33:DA:456:A:C2     | 2.84                     | 0.45              |
| 33:DA:489:C:O2    | 33:DA:489:C:C2'    | 2.64                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:515:G:C2    | 33:DA:537:G:C4    | 3.03                     | 0.45              |
| 33:DA:515:G:H21   | 33:DA:537:G:H1'   | 1.80                     | 0.45              |
| 33:DA:539:A:OP2   | 44:DL:110:LYS:HD3 | 2.16                     | 0.45              |
| 33:DA:563:A:H2'   | 33:DA:567:G:C8    | 2.51                     | 0.45              |
| 33:DA:579:A:H3'   | 33:DA:579:A:C8    | 2.51                     | 0.45              |
| 33:DA:660:C:C4    | 33:DA:746:A:C2    | 3.04                     | 0.45              |
| 33:DA:725:G:C8    | 33:DA:725:G:C5'   | 2.99                     | 0.45              |
| 33:DA:812:G:O2'   | 33:DA:813:U:O5'   | 2.18                     | 0.45              |
| 33:DA:865:A:C5    | 33:DA:866:C:C5    | 3.05                     | 0.45              |
| 33:DA:942:G:H21   | 41:DI:125:GLN:NE2 | 1.92                     | 0.45              |
| 33:DA:1137:C:O2   | 33:DA:1138:G:N2   | 2.46                     | 0.45              |
| 33:DA:1239:A:C5   | 33:DA:1298:U:H5   | 2.33                     | 0.45              |
| 33:DA:1281:C:H3'  | 33:DA:1282:C:H6   | 1.80                     | 0.45              |
| 33:DA:1345:U:O2   | 33:DA:1345:U:O4'  | 2.34                     | 0.45              |
| 55:DA:5098:HOH:O  | 52:DT:3:ILE:HD12  | 2.16                     | 0.45              |
| 35:DC:129:PHE:HE1 | 35:DC:130:ARG:NH1 | 2.14                     | 0.45              |
| 35:DC:130:ARG:HD2 | 35:DC:130:ARG:HA  | 1.57                     | 0.45              |
| 36:DD:96:ARG:HG2  | 36:DD:96:ARG:NH1  | 2.31                     | 0.45              |
| 36:DD:114:ARG:HG3 | 36:DD:132:ALA:HB2 | 1.99                     | 0.45              |
| 44:DL:110:LYS:O   | 44:DL:111:GLN:C   | 2.54                     | 0.45              |
| 46:DN:41:TRP:CD1  | 46:DN:43:ALA:HB3  | 2.52                     | 0.45              |
| 47:DO:88:ARG:HA   | 47:DO:88:ARG:HD3  | 1.60                     | 0.45              |
| 50:DR:42:ARG:H    | 50:DR:42:ARG:HG3  | 1.34                     | 0.45              |
| 51:DS:19:GLU:HA   | 51:DS:22:VAL:HG23 | 1.98                     | 0.45              |
| 51:DS:51:HIS:HA   | 51:DS:56:HIS:HA   | 1.97                     | 0.45              |
| 53:DU:16:ARG:NE   | 53:DU:17:ARG:HH12 | 2.14                     | 0.45              |
| 2:A1:10:LEU:HB2   | 2:A1:24:LYS:HA    | 1.99                     | 0.45              |
| 4:A3:59:ALA:O     | 4:A3:60:CYS:O     | 2.34                     | 0.45              |
| 4:A3:61:LEU:H     | 4:A3:61:LEU:CD1   | 2.29                     | 0.45              |
| 8:AB:450:G:N2     | 8:AB:451:U:C5     | 2.73                     | 0.45              |
| 8:AB:602:A:O4'    | 8:AB:604:G:O2'    | 2.30                     | 0.45              |
| 8:AB:614:A:H4'    | 8:AB:615:U:OP1    | 2.16                     | 0.45              |
| 8:AB:617:G:H2'    | 8:AB:618:G:O4'    | 2.16                     | 0.45              |
| 8:AB:647:G:H5'    | 8:AB:648:G:OP2    | 2.17                     | 0.45              |
| 8:AB:719:C:C2'    | 8:AB:720:U:H5'    | 2.47                     | 0.45              |
| 8:AB:826:U:OP1    | 8:AB:2428:G:H3'   | 2.17                     | 0.45              |
| 8:AB:979:A:N3     | 8:AB:979:A:H2'    | 2.31                     | 0.45              |
| 8:AB:1140:C:H1'   | 8:AB:1143:A:O2'   | 2.16                     | 0.45              |
| 8:AB:1353:A:C4    | 8:AB:1378:A:C6    | 3.04                     | 0.45              |
| 8:AB:1620:G:H2'   | 8:AB:1621:U:H5'   | 1.98                     | 0.45              |
| 8:AB:1803:A:O3'   | 9:AC:254:LYS:CD   | 2.52                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1820:U:H5    | 9:AC:158:GLY:O     | 1.99                     | 0.45              |
| 8:AB:2007:U:H2'   | 8:AB:2007:U:O2     | 2.15                     | 0.45              |
| 8:AB:2073:C:N4    | 55:AB:4599:HOH:O   | 2.48                     | 0.45              |
| 8:AB:2286:G:H5''  | 8:AB:2286:G:N3     | 2.32                     | 0.45              |
| 8:AB:2637:U:OP1   | 10:AD:82:PHE:HE1   | 1.99                     | 0.45              |
| 8:AB:2817:U:H2'   | 8:AB:2818:U:O5'    | 2.16                     | 0.45              |
| 8:AB:2821:A:C5'   | 10:AD:167:ASN:HD21 | 2.29                     | 0.45              |
| 9:AC:187:CYS:C    | 9:AC:188:ARG:HG3   | 2.36                     | 0.45              |
| 10:AD:29:VAL:HG23 | 10:AD:51:THR:CG2   | 2.47                     | 0.45              |
| 10:AD:55:LYS:O    | 10:AD:57:ALA:N     | 2.50                     | 0.45              |
| 10:AD:95:SER:O    | 10:AD:96:ILE:O     | 2.35                     | 0.45              |
| 11:AE:6:LYS:CB    | 11:AE:11:ALA:HA    | 2.47                     | 0.45              |
| 12:AF:75:GLY:C    | 12:AF:77:LYS:H     | 2.19                     | 0.45              |
| 12:AF:76:PHE:O    | 12:AF:77:LYS:CB    | 2.65                     | 0.45              |
| 12:AF:111:ARG:NH1 | 45:BM:67:ASP:HB2   | 2.30                     | 0.45              |
| 12:AF:177:ARG:HG2 | 12:AF:178:LYS:H    | 1.81                     | 0.45              |
| 13:AG:84:LYS:CE   | 13:AG:164:ALA:HB3  | 2.46                     | 0.45              |
| 14:AH:47:PHE:HD1  | 14:AH:51:ARG:HD3   | 1.81                     | 0.45              |
| 16:AJ:3:THR:O     | 16:AJ:4:PHE:CB     | 2.64                     | 0.45              |
| 17:AK:108:ARG:HA  | 17:AK:116:ILE:CD1  | 2.45                     | 0.45              |
| 20:AN:65:LEU:CB   | 20:AN:69:ARG:HG2   | 2.46                     | 0.45              |
| 20:AN:97:ILE:O    | 20:AN:97:ILE:HG12  | 2.16                     | 0.45              |
| 22:AP:50:ARG:HH11 | 22:AP:50:ARG:N     | 2.14                     | 0.45              |
| 23:AQ:18:LYS:HG3  | 23:AQ:18:LYS:O     | 2.15                     | 0.45              |
| 25:AS:32:ALA:CB   | 25:AS:51:LEU:HD12  | 2.46                     | 0.45              |
| 26:AT:30:ILE:CG2  | 26:AT:32:LEU:HD11  | 2.46                     | 0.45              |
| 29:AW:42:THR:HB   | 29:AW:65:LYS:CA    | 2.38                     | 0.45              |
| 33:BA:25:C:C5     | 33:BA:558:G:N2     | 2.85                     | 0.45              |
| 33:BA:105:G:C6    | 33:BA:106:C:C4     | 3.05                     | 0.45              |
| 33:BA:197:A:C6    | 33:BA:221:C:H5'    | 2.52                     | 0.45              |
| 33:BA:203:G:H1'   | 33:BA:465:A:N6     | 2.31                     | 0.45              |
| 33:BA:308:C:H2'   | 33:BA:309:A:C8     | 2.52                     | 0.45              |
| 33:BA:411:A:N6    | 33:BA:429:U:C4     | 2.84                     | 0.45              |
| 33:BA:451:A:H1'   | 33:BA:452:A:N7     | 2.31                     | 0.45              |
| 33:BA:555:U:O4    | 33:BA:556:C:N4     | 2.49                     | 0.45              |
| 33:BA:581:G:C2    | 33:BA:761:G:C2     | 3.04                     | 0.45              |
| 33:BA:666:G:H1'   | 33:BA:741:G:N2     | 2.32                     | 0.45              |
| 33:BA:939:G:N2    | 33:BA:940:C:N3     | 2.64                     | 0.45              |
| 33:BA:1057:G:H5'' | 35:BC:153:SER:HB3  | 1.98                     | 0.45              |
| 33:BA:1132:C:H6   | 33:BA:1132:C:H3'   | 1.81                     | 0.45              |
| 33:BA:1143:G:H2'  | 33:BA:1144:G:C8    | 2.52                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1163:A:N1    | 33:BA:1164:G:C6    | 2.85                     | 0.45              |
| 34:BB:90:PHE:O     | 34:BB:90:PHE:CG    | 2.69                     | 0.45              |
| 35:BC:123:LEU:HD21 | 35:BC:129:PHE:HA   | 1.98                     | 0.45              |
| 35:BC:173:PRO:C    | 35:BC:175:HIS:H    | 2.20                     | 0.45              |
| 35:BC:206:ILE:HG12 | 35:BC:207:LEU:N    | 2.31                     | 0.45              |
| 36:BD:53:GLN:HB3   | 36:BD:202:LEU:HD13 | 1.98                     | 0.45              |
| 36:BD:68:GLU:C     | 36:BD:70:GLN:N     | 2.67                     | 0.45              |
| 37:BE:17:VAL:CG2   | 37:BE:33:THR:H     | 2.30                     | 0.45              |
| 37:BE:56:PRO:O     | 37:BE:59:ILE:HG22  | 2.17                     | 0.45              |
| 45:BM:70:ARG:O     | 45:BM:71:GLU:C     | 2.55                     | 0.45              |
| 46:BN:2:LYS:O      | 46:BN:3:GLN:HB2    | 2.17                     | 0.45              |
| 49:BQ:64:ARG:HA    | 49:BQ:65:PRO:HD2   | 1.79                     | 0.45              |
| 49:BQ:72:TRP:CD1   | 49:BQ:72:TRP:N     | 2.83                     | 0.45              |
| 2:C1:49:LYS:O      | 2:C1:50:GLU:CB     | 2.58                     | 0.45              |
| 7:CA:12:C:H41      | 29:CW:50:VAL:HG13  | 1.82                     | 0.45              |
| 7:CA:53:A:H2'      | 7:CA:54:G:H5'      | 1.99                     | 0.45              |
| 8:CB:91:A:H1'      | 8:CB:92:U:C6       | 2.51                     | 0.45              |
| 8:CB:139:U:O2      | 26:CT:49:LYS:HE2   | 2.17                     | 0.45              |
| 8:CB:360:U:C2'     | 8:CB:361:G:O4'     | 2.64                     | 0.45              |
| 8:CB:412:A:N6      | 8:CB:2412:A:O4'    | 2.50                     | 0.45              |
| 8:CB:537:G:N1      | 8:CB:555:G:C2      | 2.85                     | 0.45              |
| 8:CB:565:C:H1'     | 8:CB:577:G:N2      | 2.31                     | 0.45              |
| 8:CB:794:A:C4      | 8:CB:795:C:C5      | 3.05                     | 0.45              |
| 8:CB:813:U:H1'     | 8:CB:1226:A:N3     | 2.31                     | 0.45              |
| 8:CB:828:U:O2      | 8:CB:829:A:C8      | 2.68                     | 0.45              |
| 8:CB:944:C:C5'     | 8:CB:944:C:H6      | 2.29                     | 0.45              |
| 8:CB:978:G:C4      | 8:CB:979:A:C8      | 3.04                     | 0.45              |
| 8:CB:988:A:H2      | 8:CB:989:G:H21     | 1.63                     | 0.45              |
| 8:CB:1060:U:O4     | 15:CI:134:SER:C    | 2.55                     | 0.45              |
| 8:CB:1131:G:C5     | 16:CJ:77:HIS:CE1   | 3.04                     | 0.45              |
| 8:CB:1228:G:C4     | 8:CB:1229:C:C5     | 3.04                     | 0.45              |
| 8:CB:1232:G:H2'    | 8:CB:1233:C:C6     | 2.47                     | 0.45              |
| 8:CB:1298:C:O2     | 8:CB:1302:A:O2'    | 2.33                     | 0.45              |
| 8:CB:1454:C:H5'    | 20:CN:63:ARG:CZ    | 2.44                     | 0.45              |
| 8:CB:1632:A:H2'    | 8:CB:1633:G:C8     | 2.51                     | 0.45              |
| 8:CB:1652:A:C2     | 8:CB:2006:C:C2     | 3.05                     | 0.45              |
| 8:CB:1680:U:H2'    | 8:CB:1681:G:H5'    | 1.97                     | 0.45              |
| 8:CB:1807:G:C8     | 8:CB:1807:G:C3'    | 2.98                     | 0.45              |
| 8:CB:1907:G:C2     | 8:CB:1924:C:O2     | 2.69                     | 0.45              |
| 8:CB:2094:A:C2     | 8:CB:2196:C:C2     | 3.04                     | 0.45              |
| 8:CB:2287:A:H2'    | 8:CB:2287:A:N3     | 2.32                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2353:G:O6     | 8:CB:2364:C:N3     | 2.49                     | 0.45              |
| 8:CB:2432:A:N6     | 8:CB:2433:A:N6     | 2.64                     | 0.45              |
| 8:CB:2511:U:O4     | 8:CB:2512:C:N4     | 2.49                     | 0.45              |
| 8:CB:2519:U:N3     | 8:CB:2542:A:C6     | 2.84                     | 0.45              |
| 8:CB:2592:G:C5'    | 8:CB:2593:U:OP2    | 2.55                     | 0.45              |
| 8:CB:2688:G:H3'    | 8:CB:2688:G:C8     | 2.51                     | 0.45              |
| 8:CB:2738:A:C8     | 8:CB:2738:A:C3'    | 3.00                     | 0.45              |
| 8:CB:2776:A:C2     | 8:CB:2778:A:C4     | 3.05                     | 0.45              |
| 8:CB:2828:G:H2'    | 8:CB:2829:A:H5'    | 1.98                     | 0.45              |
| 8:CB:2832:U:N3     | 8:CB:2834:G:N2     | 2.65                     | 0.45              |
| 8:CB:2835:A:C5     | 8:CB:2879:A:C6     | 3.04                     | 0.45              |
| 8:CB:2852:G:H2'    | 8:CB:2853:C:H6     | 1.79                     | 0.45              |
| 9:CC:229:HIS:ND1   | 9:CC:231:HIS:HD2   | 2.15                     | 0.45              |
| 10:CD:59:ARG:HG3   | 10:CD:60:VAL:O     | 2.17                     | 0.45              |
| 11:CE:50:ALA:O     | 11:CE:74:LYS:HE3   | 2.15                     | 0.45              |
| 11:CE:84:THR:CG2   | 11:CE:85:PHE:N     | 2.79                     | 0.45              |
| 11:CE:142:ALA:HB3  | 11:CE:185:LYS:NZ   | 2.31                     | 0.45              |
| 11:CE:162:ARG:HD2  | 11:CE:162:ARG:HA   | 1.53                     | 0.45              |
| 14:CH:8:LYS:O      | 14:CH:9:VAL:HG13   | 2.16                     | 0.45              |
| 14:CH:127:GLU:HA   | 14:CH:144:VAL:O    | 2.17                     | 0.45              |
| 14:CH:135:HIS:H    | 14:CH:138:VAL:HB   | 1.80                     | 0.45              |
| 19:CM:98:PRO:O     | 19:CM:100:LYS:HD2  | 2.15                     | 0.45              |
| 22:CP:58:PHE:O     | 22:CP:59:THR:C     | 2.55                     | 0.45              |
| 22:CP:103:THR:HG22 | 22:CP:105:LYS:CD   | 2.46                     | 0.45              |
| 23:CQ:100:PHE:CE2  | 24:CR:13:ARG:NH2   | 2.85                     | 0.45              |
| 24:CR:67:GLY:H     | 24:CR:98:ILE:H     | 1.64                     | 0.45              |
| 26:CT:15:HIS:O     | 26:CT:16:VAL:HG12  | 2.17                     | 0.45              |
| 26:CT:60:THR:HA    | 26:CT:83:ALA:HA    | 1.97                     | 0.45              |
| 26:CT:87:LEU:HB3   | 26:CT:88:LYS:H     | 1.35                     | 0.45              |
| 27:CU:3:LYS:CD     | 27:CU:81:ARG:HH11  | 2.29                     | 0.45              |
| 27:CU:11:ILE:CG2   | 27:CU:12:VAL:N     | 2.79                     | 0.45              |
| 28:CV:63:ILE:HB    | 28:CV:70:ILE:HG21  | 1.97                     | 0.45              |
| 29:CW:28:GLU:HB3   | 29:CW:30:VAL:HG23  | 1.97                     | 0.45              |
| 31:CY:35:VAL:CG1   | 31:CY:36:GLU:H     | 2.15                     | 0.45              |
| 33:DA:18:C:P       | 37:DE:131:ASN:HD21 | 2.38                     | 0.45              |
| 33:DA:142:G:H2'    | 33:DA:143:A:C8     | 2.52                     | 0.45              |
| 33:DA:156:C:H42    | 33:DA:165:G:H1     | 1.64                     | 0.45              |
| 33:DA:399:G:H2'    | 33:DA:400:C:O4'    | 2.17                     | 0.45              |
| 33:DA:404:G:O6     | 36:DD:1:ALA:HB2    | 2.16                     | 0.45              |
| 33:DA:441:A:H1'    | 33:DA:497:G:C2     | 2.52                     | 0.45              |
| 33:DA:465:A:C8     | 33:DA:466:A:N7     | 2.83                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:491:G:C2    | 33:DA:492:C:C4     | 3.04                     | 0.45              |
| 33:DA:563:A:C2    | 33:DA:567:G:C6     | 3.04                     | 0.45              |
| 33:DA:704:A:N7    | 33:DA:705:G:C5     | 2.85                     | 0.45              |
| 33:DA:727:G:H5''  | 33:DA:741:G:H22    | 1.80                     | 0.45              |
| 33:DA:738:C:H2'   | 33:DA:739:C:H6     | 1.81                     | 0.45              |
| 33:DA:770:C:H1'   | 33:DA:900:A:N1     | 2.31                     | 0.45              |
| 33:DA:818:G:C2'   | 33:DA:819:A:H5''   | 2.46                     | 0.45              |
| 33:DA:890:G:H22   | 33:DA:906:A:H3'    | 1.80                     | 0.45              |
| 33:DA:921:U:O2'   | 33:DA:922:G:H5'    | 2.16                     | 0.45              |
| 33:DA:960:U:C2    | 33:DA:1225:A:N7    | 2.84                     | 0.45              |
| 33:DA:981:U:OP1   | 46:DN:12:ARG:NH2   | 2.49                     | 0.45              |
| 33:DA:1158:C:O2   | 33:DA:1158:C:H2'   | 2.17                     | 0.45              |
| 33:DA:1184:G:H5'' | 33:DA:1185:G:OP2   | 2.17                     | 0.45              |
| 33:DA:1405:G:C8   | 33:DA:1405:G:H3'   | 2.51                     | 0.45              |
| 33:DA:1441:A:H62  | 33:DA:1461:G:N2    | 2.10                     | 0.45              |
| 35:DC:73:GLY:C    | 35:DC:75:VAL:N     | 2.69                     | 0.45              |
| 38:DF:9:MET:HE1   | 38:DF:59:TYR:CE1   | 2.51                     | 0.45              |
| 40:DH:25:THR:HA   | 40:DH:58:LEU:O     | 2.16                     | 0.45              |
| 40:DH:127:TYR:O   | 40:DH:128:VAL:HG13 | 2.16                     | 0.45              |
| 41:DI:88:GLU:CD   | 41:DI:89:TYR:H     | 2.19                     | 0.45              |
| 50:DR:55:ALA:O    | 50:DR:59:LYS:HG3   | 2.16                     | 0.45              |
| 2:A1:25:ASN:CG    | 2:A1:26:LYS:H      | 2.20                     | 0.45              |
| 2:A1:41:VAL:HB    | 2:A1:43:ARG:HH22   | 1.78                     | 0.45              |
| 5:A4:14:CYS:HA    | 5:A4:27:CYS:HB3    | 1.99                     | 0.45              |
| 7:AA:30:C:C2      | 7:AA:31:C:O4'      | 2.70                     | 0.45              |
| 8:AB:132:G:H8     | 8:AB:132:G:C5'     | 2.29                     | 0.45              |
| 8:AB:144:A:H2'    | 8:AB:145:C:C6      | 2.52                     | 0.45              |
| 8:AB:246:C:N4     | 8:AB:252:G:H22     | 2.13                     | 0.45              |
| 8:AB:277:G:C4     | 8:AB:277:G:H3'     | 2.52                     | 0.45              |
| 8:AB:429:A:C2     | 8:AB:430:A:N1      | 2.85                     | 0.45              |
| 8:AB:666:A:H2'    | 8:AB:667:U:C5'     | 2.46                     | 0.45              |
| 8:AB:699:A:H2'    | 8:AB:700:G:O5'     | 2.17                     | 0.45              |
| 8:AB:725:G:C6     | 8:AB:726:G:C6      | 3.05                     | 0.45              |
| 8:AB:839:U:C2     | 8:AB:940:G:N1      | 2.84                     | 0.45              |
| 8:AB:978:G:C4     | 8:AB:979:A:C8      | 3.04                     | 0.45              |
| 8:AB:1039:A:C2    | 8:AB:1117:C:O2     | 2.69                     | 0.45              |
| 8:AB:1182:G:H2'   | 8:AB:1183:U:H5'    | 1.98                     | 0.45              |
| 8:AB:1299:G:H5''  | 8:AB:1300:G:OP1    | 2.17                     | 0.45              |
| 8:AB:1332:G:O6    | 8:AB:1609:A:C8     | 2.68                     | 0.45              |
| 8:AB:1708:C:C2    | 8:AB:1709:U:H5     | 2.35                     | 0.45              |
| 8:AB:1758:U:H3'   | 8:AB:1759:A:H8     | 1.81                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1959:G:N2    | 8:AB:1960:A:N3    | 2.64                     | 0.45              |
| 8:AB:2007:U:H5'   | 8:AB:2007:U:C6    | 2.52                     | 0.45              |
| 8:AB:2009:A:H3'   | 8:AB:2009:A:C8    | 2.52                     | 0.45              |
| 8:AB:2053:G:N2    | 8:AB:2054:A:C4    | 2.84                     | 0.45              |
| 8:AB:2061:G:N3    | 8:AB:2063:C:N4    | 2.65                     | 0.45              |
| 8:AB:2378:A:C8    | 8:AB:2378:A:C3'   | 3.00                     | 0.45              |
| 8:AB:2391:G:H22   | 8:AB:2424:C:C2'   | 2.11                     | 0.45              |
| 8:AB:2617:U:O2'   | 8:AB:2618:G:H5'   | 2.17                     | 0.45              |
| 8:AB:2737:G:C2    | 8:AB:2768:U:C4    | 3.04                     | 0.45              |
| 8:AB:2763:G:C8    | 8:AB:2763:G:C5'   | 2.91                     | 0.45              |
| 8:AB:2776:A:N1    | 8:AB:2778:A:C2    | 2.84                     | 0.45              |
| 8:AB:2821:A:H3'   | 8:AB:2821:A:H8    | 1.81                     | 0.45              |
| 8:AB:2830:C:OP1   | 10:AD:55:LYS:NZ   | 2.47                     | 0.45              |
| 8:AB:2831:G:H5'   | 8:AB:2834:G:O2'   | 2.16                     | 0.45              |
| 9:AC:136:VAL:O    | 9:AC:137:GLY:C    | 2.55                     | 0.45              |
| 9:AC:171:VAL:O    | 9:AC:172:THR:OG1  | 2.29                     | 0.45              |
| 10:AD:48:ILE:CG2  | 10:AD:49:GLN:N    | 2.79                     | 0.45              |
| 12:AF:16:MET:HE3  | 12:AF:21:TYR:HB2  | 1.99                     | 0.45              |
| 12:AF:63:LYS:HD2  | 12:AF:64:PRO:HD2  | 1.97                     | 0.45              |
| 12:AF:174:PHE:N   | 12:AF:175:PRO:CD  | 2.80                     | 0.45              |
| 13:AG:19:ASN:CB   | 13:AG:22:VAL:HG13 | 2.46                     | 0.45              |
| 14:AH:4:ILE:H     | 14:AH:37:VAL:HB   | 1.80                     | 0.45              |
| 16:AJ:112:GLY:O   | 16:AJ:116:ARG:N   | 2.49                     | 0.45              |
| 17:AK:10:VAL:HG21 | 17:AK:16:ALA:CA   | 2.39                     | 0.45              |
| 17:AK:47:ILE:HB   | 17:AK:48:PRO:HD2  | 1.98                     | 0.45              |
| 17:AK:98:ARG:CG   | 17:AK:99:ILE:N    | 2.79                     | 0.45              |
| 18:AL:40:SER:HA   | 18:AL:41:ARG:CZ   | 2.46                     | 0.45              |
| 20:AN:103:ARG:O   | 20:AN:104:ALA:HB3 | 2.16                     | 0.45              |
| 21:AO:19:GLN:C    | 21:AO:21:LEU:N    | 2.70                     | 0.45              |
| 22:AP:23:ASP:C    | 22:AP:25:VAL:H    | 2.20                     | 0.45              |
| 24:AR:97:LYS:O    | 24:AR:98:ILE:CB   | 2.64                     | 0.45              |
| 33:BA:27:G:C6     | 33:BA:557:G:C2    | 3.05                     | 0.45              |
| 33:BA:133:U:O2    | 33:BA:230:G:C2    | 2.70                     | 0.45              |
| 33:BA:227:G:C6    | 33:BA:228:A:C5    | 3.05                     | 0.45              |
| 33:BA:275:G:N1    | 33:BA:276:G:C6    | 2.84                     | 0.45              |
| 33:BA:469:C:H2'   | 33:BA:470:C:H5'   | 1.98                     | 0.45              |
| 33:BA:505:G:N7    | 33:BA:535:A:N3    | 2.64                     | 0.45              |
| 33:BA:604:G:N1    | 33:BA:605:U:C2    | 2.85                     | 0.45              |
| 33:BA:650:G:N2    | 33:BA:651:C:C2    | 2.84                     | 0.45              |
| 33:BA:714:G:O2'   | 33:BA:715:A:C5'   | 2.64                     | 0.45              |
| 33:BA:769:G:C2'   | 33:BA:770:C:H5'   | 2.46                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:BA:772:U:C4   | 33:BA:773:G:N7    | 2.84                     | 0.45              |
| 33:BA:928:G:C4   | 33:BA:929:G:C8    | 3.04                     | 0.45              |
| 33:BA:1170:A:H3' | 33:BA:1171:A:H8   | 1.81                     | 0.45              |
| 33:BA:1239:A:C8  | 33:BA:1241:G:H1'  | 2.50                     | 0.45              |
| 33:BA:1386:G:C2' | 33:BA:1387:G:H5'  | 2.47                     | 0.45              |
| 33:BA:1403:C:H3' | 33:BA:1403:C:C6   | 2.52                     | 0.45              |
| 33:BA:1465:A:C8  | 33:BA:1465:A:C3'  | 3.00                     | 0.45              |
| 33:BA:1497:G:C2' | 33:BA:1498:U:H5'  | 2.46                     | 0.45              |
| 34:BB:95:TRP:CH2 | 34:BB:171:ALA:HA  | 2.51                     | 0.45              |
| 36:BD:18:LEU:CD1 | 36:BD:63:ILE:HG12 | 2.34                     | 0.45              |
| 38:BF:6:ILE:HD12 | 38:BF:7:VAL:N     | 2.32                     | 0.45              |
| 43:BK:64:VAL:HA  | 43:BK:67:GLU:HG2  | 1.98                     | 0.45              |
| 43:BK:124:LYS:O  | 43:BK:124:LYS:HG2 | 2.14                     | 0.45              |
| 51:BS:31:ARG:NE  | 51:BS:56:HIS:CE1  | 2.80                     | 0.45              |
| 51:BS:44:ILE:CD1 | 51:BS:62:THR:HA   | 2.44                     | 0.45              |
| 52:BT:46:ALA:HB1 | 52:BT:82:ILE:CG2  | 2.46                     | 0.45              |
| 2:C1:37:LYS:HE3  | 8:CB:2344:U:P     | 2.57                     | 0.45              |
| 7:CA:10:G:H8     | 7:CA:10:G:O5'     | 1.99                     | 0.45              |
| 7:CA:32:U:H2'    | 7:CA:33:G:H8      | 1.81                     | 0.45              |
| 8:CB:35:G:C5     | 8:CB:454:A:C2     | 3.05                     | 0.45              |
| 8:CB:155:A:C2    | 8:CB:172:A:C2     | 3.04                     | 0.45              |
| 8:CB:382:A:C2    | 8:CB:383:C:H1'    | 2.51                     | 0.45              |
| 8:CB:398:C:OP2   | 32:CZ:49:ARG:NE   | 2.49                     | 0.45              |
| 8:CB:450:G:N2    | 8:CB:451:U:C5     | 2.74                     | 0.45              |
| 8:CB:586:A:H4'   | 11:CE:85:PHE:HE1  | 1.81                     | 0.45              |
| 8:CB:586:A:N6    | 8:CB:1254:A:C6    | 2.84                     | 0.45              |
| 8:CB:693:A:C2    | 8:CB:694:U:O2     | 2.70                     | 0.45              |
| 8:CB:857:G:H1'   | 29:CW:19:ARG:NH1  | 2.31                     | 0.45              |
| 8:CB:1120:G:C2   | 8:CB:1121:C:C4    | 3.05                     | 0.45              |
| 8:CB:1296:G:OP1  | 8:CB:2709:G:H4'   | 2.17                     | 0.45              |
| 8:CB:1443:U:H3'  | 8:CB:1443:U:C6    | 2.47                     | 0.45              |
| 8:CB:1521:G:C6   | 8:CB:1522:A:N1    | 2.84                     | 0.45              |
| 8:CB:1526:C:O2'  | 8:CB:1527:G:H5'   | 2.16                     | 0.45              |
| 8:CB:1670:C:C5'  | 8:CB:1671:U:OP2   | 2.64                     | 0.45              |
| 8:CB:1866:A:C6   | 8:CB:1876:A:N7    | 2.85                     | 0.45              |
| 8:CB:1978:A:H2'  | 8:CB:1979:U:O4'   | 2.16                     | 0.45              |
| 8:CB:2519:U:C6   | 8:CB:2541:A:N6    | 2.84                     | 0.45              |
| 8:CB:2589:A:C2   | 8:CB:2590:A:N7    | 2.85                     | 0.45              |
| 8:CB:2704:C:H2'  | 8:CB:2705:A:H8    | 1.81                     | 0.45              |
| 8:CB:2837:A:H2'  | 8:CB:2838:G:H5''  | 1.99                     | 0.45              |
| 8:CB:2876:G:C5   | 8:CB:2877:G:C8    | 3.05                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:2889:C:N4     | 8:CB:2890:G:N1    | 2.65                     | 0.45              |
| 8:CB:2896:C:H2'    | 8:CB:2897:U:O4'   | 2.16                     | 0.45              |
| 9:CC:10:PRO:HD2    | 9:CC:202:ARG:NH2  | 2.31                     | 0.45              |
| 9:CC:50:THR:O      | 9:CC:51:ARG:HD3   | 2.17                     | 0.45              |
| 9:CC:66:PHE:CZ     | 9:CC:154:ALA:HB2  | 2.52                     | 0.45              |
| 10:CD:61:THR:HG23  | 10:CD:62:LYS:CE   | 2.46                     | 0.45              |
| 10:CD:160:LYS:HB2  | 10:CD:160:LYS:HZ1 | 1.74                     | 0.45              |
| 12:CF:135:ILE:HG23 | 12:CF:136:ILE:H   | 1.81                     | 0.45              |
| 16:CJ:25:LEU:HD13  | 16:CJ:25:LEU:N    | 2.32                     | 0.45              |
| 16:CJ:34:ARG:HB3   | 16:CJ:39:LYS:HE2  | 1.98                     | 0.45              |
| 16:CJ:136:GLN:N    | 16:CJ:137:PRO:HD2 | 2.31                     | 0.45              |
| 20:CN:2:ARG:CD     | 20:CN:2:ARG:C     | 2.85                     | 0.45              |
| 24:CR:83:TYR:O     | 24:CR:84:ARG:C    | 2.54                     | 0.45              |
| 25:CS:34:ASP:HA    | 25:CS:37:THR:HG22 | 1.98                     | 0.45              |
| 25:CS:86:MET:HB3   | 25:CS:94:ASP:HB3  | 1.99                     | 0.45              |
| 26:CT:10:VAL:CG2   | 26:CT:11:LEU:N    | 2.79                     | 0.45              |
| 29:CW:75:ASN:OD1   | 29:CW:76:ARG:N    | 2.50                     | 0.45              |
| 33:DA:57:G:H8      | 33:DA:57:G:C5'    | 2.29                     | 0.45              |
| 33:DA:292:G:C5     | 33:DA:293:G:H1'   | 2.52                     | 0.45              |
| 33:DA:318:G:C5     | 33:DA:319:G:N7    | 2.84                     | 0.45              |
| 33:DA:323:U:C6     | 33:DA:323:U:C3'   | 2.99                     | 0.45              |
| 33:DA:395:C:N3     | 33:DA:396:C:N4    | 2.64                     | 0.45              |
| 33:DA:430:A:C2     | 33:DA:431:A:C4    | 3.04                     | 0.45              |
| 33:DA:522:C:H2'    | 33:DA:523:A:H8    | 1.82                     | 0.45              |
| 33:DA:622:A:C8     | 33:DA:623:C:C6    | 3.05                     | 0.45              |
| 33:DA:639:G:H5''   | 33:DA:639:G:C8    | 2.51                     | 0.45              |
| 33:DA:720:C:H4'    | 50:DR:38:ILE:HD11 | 1.98                     | 0.45              |
| 33:DA:765:G:C8     | 33:DA:812:G:N3    | 2.85                     | 0.45              |
| 33:DA:785:G:N2     | 33:DA:798:U:C1'   | 2.79                     | 0.45              |
| 33:DA:787:A:C2'    | 33:DA:788:U:C5    | 2.98                     | 0.45              |
| 33:DA:800:G:C8     | 33:DA:800:G:H3'   | 2.52                     | 0.45              |
| 33:DA:861:G:C8     | 33:DA:861:G:C3'   | 2.98                     | 0.45              |
| 33:DA:878:A:C5     | 33:DA:879:C:C5    | 3.05                     | 0.45              |
| 33:DA:888:G:C2     | 33:DA:889:A:N7    | 2.84                     | 0.45              |
| 33:DA:909:A:H2'    | 33:DA:910:C:H5'   | 1.98                     | 0.45              |
| 33:DA:960:U:C2     | 33:DA:1225:A:C5   | 3.05                     | 0.45              |
| 33:DA:1003:G:H21   | 33:DA:1005:A:C5'  | 2.28                     | 0.45              |
| 33:DA:1292:G:H2'   | 33:DA:1293:C:C6   | 2.52                     | 0.45              |
| 33:DA:1304:G:O3'   | 33:DA:1305:G:O4'  | 2.34                     | 0.45              |
| 33:DA:1315:U:C4    | 33:DA:1316:G:C6   | 3.05                     | 0.45              |
| 33:DA:1382:C:H5'   | 39:DG:78:ARG:HH21 | 1.81                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:1392:G:N2    | 33:DA:1502:A:H1'  | 2.32                     | 0.45              |
| 33:DA:1461:G:H2'   | 33:DA:1462:C:O4'  | 2.17                     | 0.45              |
| 33:DA:1503:A:C8    | 33:DA:1531:A:N3   | 2.85                     | 0.45              |
| 33:DA:1525:G:H8    | 33:DA:1525:G:C5'  | 2.29                     | 0.45              |
| 34:DB:163:ILE:HG23 | 34:DB:164:ASP:N   | 2.23                     | 0.45              |
| 35:DC:17:TRP:HB3   | 46:DN:90:GLY:O    | 2.16                     | 0.45              |
| 35:DC:20:THR:HG23  | 35:DC:20:THR:O    | 2.16                     | 0.45              |
| 36:DD:191:SER:HB2  | 36:DD:192:ALA:H   | 1.62                     | 0.45              |
| 37:DE:16:ALA:O     | 37:DE:34:ALA:HA   | 2.17                     | 0.45              |
| 38:DF:86:ARG:NH1   | 50:DR:63:TYR:HB3  | 2.32                     | 0.45              |
| 39:DG:135:LYS:O    | 39:DG:135:LYS:HG2 | 2.17                     | 0.45              |
| 40:DH:75:GLN:HE21  | 40:DH:76:ARG:H    | 1.61                     | 0.45              |
| 40:DH:106:SER:C    | 40:DH:107:LYS:HZ3 | 2.20                     | 0.45              |
| 41:DI:59:LYS:HB2   | 41:DI:60:LEU:HD12 | 1.98                     | 0.45              |
| 41:DI:83:THR:HG21  | 41:DI:102:PHE:O   | 2.17                     | 0.45              |
| 44:DL:109:ARG:NH2  | 44:DL:111:GLN:HB3 | 2.31                     | 0.45              |
| 45:DM:14:ALA:HB1   | 45:DM:33:LEU:HD11 | 1.97                     | 0.45              |
| 46:DN:62:ARG:HG2   | 46:DN:69:PRO:HB3  | 1.97                     | 0.45              |
| 47:DO:20:ASP:O     | 47:DO:20:ASP:CG   | 2.54                     | 0.45              |
| 48:DP:38:PHE:O     | 48:DP:50:THR:HG23 | 2.17                     | 0.45              |
| 51:DS:3:SER:O      | 51:DS:4:LEU:HD12  | 2.17                     | 0.45              |
| 51:DS:10:ILE:HA    | 51:DS:37:SER:CB   | 2.45                     | 0.45              |
| 51:DS:65:MET:SD    | 51:DS:73:PHE:CE2  | 3.09                     | 0.45              |
| 2:A1:7:LYS:HB2     | 8:AB:2284:A:OP2   | 2.16                     | 0.45              |
| 4:A3:26:ALA:HA     | 4:A3:29:ARG:CG    | 2.47                     | 0.45              |
| 4:A3:46:LYS:HG2    | 4:A3:47:ALA:N     | 2.27                     | 0.45              |
| 8:AB:181:A:H2'     | 8:AB:182:A:C8     | 2.52                     | 0.45              |
| 8:AB:199:A:C8      | 8:AB:2433:A:N6    | 2.85                     | 0.45              |
| 8:AB:308:G:O4'     | 8:AB:501:A:H5'    | 2.16                     | 0.45              |
| 8:AB:324:A:N7      | 8:AB:325:G:N7     | 2.64                     | 0.45              |
| 8:AB:626:A:H2'     | 18:AL:79:LEU:HD21 | 1.97                     | 0.45              |
| 8:AB:713:G:H8      | 8:AB:713:G:O5'    | 1.99                     | 0.45              |
| 8:AB:740:C:C4      | 8:AB:758:C:O2     | 2.69                     | 0.45              |
| 8:AB:834:G:N2      | 8:AB:835:C:O2     | 2.49                     | 0.45              |
| 8:AB:985:C:H6      | 8:AB:985:C:O5'    | 2.00                     | 0.45              |
| 8:AB:1128:G:C1'    | 8:AB:2516:A:O2'   | 2.62                     | 0.45              |
| 8:AB:1129:A:C6     | 8:AB:2570:G:O4'   | 2.68                     | 0.45              |
| 8:AB:1216:G:C4     | 8:AB:1217:U:C6    | 3.05                     | 0.45              |
| 8:AB:1265:A:C1'    | 8:AB:1267:U:C5    | 3.00                     | 0.45              |
| 8:AB:1355:G:C2     | 8:AB:1356:G:C5    | 3.04                     | 0.45              |
| 8:AB:1387:A:H8     | 8:AB:1387:A:O5'   | 1.99                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:1460:U:H4'   | 8:AB:1461:C:OP2   | 2.16                     | 0.45              |
| 8:AB:1528:A:H8    | 8:AB:1528:A:O5'   | 1.99                     | 0.45              |
| 8:AB:1544:A:C6    | 8:AB:1545:A:C6    | 3.05                     | 0.45              |
| 8:AB:1784:A:H5''  | 8:AB:1785:A:OP1   | 2.16                     | 0.45              |
| 8:AB:2080:A:C4    | 8:AB:2081:U:C6    | 3.04                     | 0.45              |
| 8:AB:2095:A:C8    | 8:AB:2095:A:C5'   | 2.90                     | 0.45              |
| 8:AB:2097:A:H2'   | 8:AB:2098:U:H6    | 1.81                     | 0.45              |
| 8:AB:2204:G:C6    | 8:AB:2221:G:C2    | 3.04                     | 0.45              |
| 8:AB:2298:A:C2    | 8:AB:2299:U:O2    | 2.70                     | 0.45              |
| 8:AB:2357:G:N2    | 8:AB:2361:G:C5    | 2.85                     | 0.45              |
| 8:AB:2515:C:C2    | 8:AB:2516:A:C8    | 3.04                     | 0.45              |
| 8:AB:2519:U:C6    | 8:AB:2542:A:N6    | 2.84                     | 0.45              |
| 8:AB:2718:G:N2    | 8:AB:2846:G:O2'   | 2.48                     | 0.45              |
| 8:AB:2768:U:C4    | 8:AB:2769:U:C4    | 3.05                     | 0.45              |
| 8:AB:2898:U:H2'   | 8:AB:2899:A:C8    | 2.51                     | 0.45              |
| 9:AC:116:GLN:HG3  | 9:AC:116:GLN:O    | 2.15                     | 0.45              |
| 9:AC:123:ILE:CG2  | 38:BF:80:PHE:CE2  | 3.00                     | 0.45              |
| 9:AC:229:HIS:HD1  | 9:AC:231:HIS:CD2  | 2.35                     | 0.45              |
| 10:AD:197:THR:CG2 | 10:AD:198:GLY:N   | 2.68                     | 0.45              |
| 11:AE:152:GLU:OE2 | 11:AE:154:ASP:O   | 2.34                     | 0.45              |
| 12:AF:56:LEU:O    | 12:AF:59:ILE:HG22 | 2.16                     | 0.45              |
| 16:AJ:16:TYR:CD1  | 16:AJ:16:TYR:N    | 2.83                     | 0.45              |
| 16:AJ:46:PRO:CG   | 55:AJ:2001:HOH:O  | 2.64                     | 0.45              |
| 17:AK:66:LYS:HG2  | 17:AK:80:ASP:HA   | 1.97                     | 0.45              |
| 20:AN:60:VAL:HA   | 20:AN:63:ARG:HB2  | 1.98                     | 0.45              |
| 20:AN:98:LEU:O    | 20:AN:111:ALA:HA  | 2.16                     | 0.45              |
| 21:AO:76:LYS:CG   | 21:AO:77:ALA:N    | 2.75                     | 0.45              |
| 23:AQ:10:ARG:O    | 23:AQ:14:LYS:N    | 2.49                     | 0.45              |
| 24:AR:29:THR:CG2  | 24:AR:66:HIS:CE1  | 2.98                     | 0.45              |
| 33:BA:149:A:H4'   | 33:BA:1446:A:C2   | 2.51                     | 0.45              |
| 33:BA:157:U:O2    | 33:BA:165:G:C2    | 2.69                     | 0.45              |
| 33:BA:185:U:O2    | 33:BA:192:A:N1    | 2.50                     | 0.45              |
| 33:BA:275:G:O5'   | 49:BQ:15:LYS:HG2  | 2.16                     | 0.45              |
| 33:BA:372:C:C4    | 33:BA:387:U:C5    | 3.05                     | 0.45              |
| 33:BA:432:A:N6    | 33:BA:433:G:C2    | 2.84                     | 0.45              |
| 33:BA:469:C:N4    | 33:BA:470:C:N4    | 2.65                     | 0.45              |
| 33:BA:671:G:H5''  | 33:BA:671:G:C8    | 2.51                     | 0.45              |
| 33:BA:687:A:N6    | 33:BA:703:G:C4    | 2.85                     | 0.45              |
| 33:BA:724:G:H2'   | 33:BA:725:G:O4'   | 2.16                     | 0.45              |
| 33:BA:971:G:N2    | 33:BA:1363:A:H8   | 2.13                     | 0.45              |
| 33:BA:1147:C:O2'  | 33:BA:1148:U:H5'  | 2.16                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:1154:G:H2'  | 33:BA:1155:A:H5''  | 1.97                     | 0.45              |
| 33:BA:1329:A:C5   | 33:BA:1330:U:C5    | 3.05                     | 0.45              |
| 33:BA:1523:G:H5'' | 33:BA:1524:C:OP2   | 2.16                     | 0.45              |
| 40:BH:40:LYS:HB2  | 40:BH:45:ILE:HD11  | 1.99                     | 0.45              |
| 40:BH:89:ASP:C    | 40:BH:91:LEU:H     | 2.20                     | 0.45              |
| 40:BH:103:VAL:CG1 | 40:BH:124:ILE:HG12 | 2.47                     | 0.45              |
| 41:BI:87:MET:HA   | 41:BI:93:LEU:HD11  | 1.99                     | 0.45              |
| 48:BP:42:ILE:HG22 | 48:BP:43:ALA:N     | 2.32                     | 0.45              |
| 51:BS:73:PHE:O    | 51:BS:74:ALA:HB2   | 2.17                     | 0.45              |
| 52:BT:5:SER:OG    | 52:BT:6:ALA:N      | 2.49                     | 0.45              |
| 1:C0:38:LEU:O     | 1:C0:39:ARG:NE     | 2.45                     | 0.45              |
| 1:C0:39:ARG:HD3   | 8:CB:2816:G:C5'    | 2.44                     | 0.45              |
| 5:C4:3:VAL:CG1    | 5:C4:5:ALA:HB3     | 2.47                     | 0.45              |
| 7:CA:20:G:N1      | 7:CA:21:G:C6       | 2.84                     | 0.45              |
| 7:CA:81:G:N2      | 7:CA:82:U:H1'      | 2.32                     | 0.45              |
| 8:CB:247:G:C8     | 8:CB:247:G:C3'     | 3.00                     | 0.45              |
| 8:CB:266:G:N7     | 8:CB:267:C:C5      | 2.84                     | 0.45              |
| 8:CB:266:G:C5     | 8:CB:267:C:C6      | 3.04                     | 0.45              |
| 8:CB:396:G:H1'    | 32:CZ:27:THR:HG23  | 1.99                     | 0.45              |
| 8:CB:463:G:C2     | 8:CB:467:G:C5      | 3.04                     | 0.45              |
| 8:CB:498:G:N1     | 8:CB:499:U:C5      | 2.85                     | 0.45              |
| 8:CB:529:A:C5     | 8:CB:2042:A:H2     | 2.34                     | 0.45              |
| 8:CB:566:U:C2'    | 8:CB:567:U:O5'     | 2.65                     | 0.45              |
| 8:CB:780:G:N1     | 9:CC:228:ASP:CG    | 2.63                     | 0.45              |
| 8:CB:802:A:H2'    | 8:CB:803:U:H6      | 1.78                     | 0.45              |
| 8:CB:812:C:C4     | 8:CB:1250:G:O6     | 2.70                     | 0.45              |
| 8:CB:834:G:H1'    | 8:CB:2358:A:N3     | 2.32                     | 0.45              |
| 8:CB:860:U:O2'    | 8:CB:2267:A:H4'    | 2.16                     | 0.45              |
| 8:CB:862:G:H2'    | 8:CB:863:A:O4'     | 2.17                     | 0.45              |
| 8:CB:862:G:C8     | 8:CB:862:G:H3'     | 2.52                     | 0.45              |
| 8:CB:869:G:H2'    | 8:CB:870:U:O4'     | 2.17                     | 0.45              |
| 8:CB:995:C:C2     | 16:CJ:3:THR:HG23   | 2.51                     | 0.45              |
| 8:CB:1210:G:H4'   | 8:CB:1211:C:O5'    | 2.17                     | 0.45              |
| 8:CB:1241:A:C5    | 8:CB:1242:U:C2     | 3.05                     | 0.45              |
| 8:CB:1246:A:O5'   | 8:CB:1246:A:H8     | 1.99                     | 0.45              |
| 8:CB:1347:A:O5'   | 8:CB:1347:A:H8     | 1.99                     | 0.45              |
| 8:CB:1649:G:O2'   | 8:CB:1650:A:H5'    | 2.17                     | 0.45              |
| 8:CB:1652:A:OP1   | 20:CN:9:GLN:NE2    | 2.49                     | 0.45              |
| 8:CB:1657:U:P     | 10:CD:141:ARG:CG   | 3.05                     | 0.45              |
| 8:CB:1724:G:H2'   | 8:CB:1725:U:O4'    | 2.16                     | 0.45              |
| 8:CB:1886:U:H6    | 8:CB:1886:U:O5'    | 2.00                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1897:G:C2'   | 8:CB:1898:U:O5'   | 2.65                     | 0.45              |
| 8:CB:1974:C:C2'   | 8:CB:1975:G:O5'   | 2.64                     | 0.45              |
| 8:CB:2003:A:C2'   | 8:CB:2004:G:O5'   | 2.64                     | 0.45              |
| 8:CB:2090:A:O2'   | 32:CZ:49:ARG:HD2  | 2.16                     | 0.45              |
| 8:CB:2110:G:OP2   | 8:CB:2110:G:H2'   | 2.16                     | 0.45              |
| 8:CB:2154:A:N7    | 8:CB:2155:U:C5    | 2.85                     | 0.45              |
| 8:CB:2247:A:O5'   | 8:CB:2247:A:H8    | 1.99                     | 0.45              |
| 8:CB:2259:U:O2    | 8:CB:2260:C:C6    | 2.69                     | 0.45              |
| 8:CB:2261:C:C4    | 8:CB:2280:G:N2    | 2.84                     | 0.45              |
| 8:CB:2346:A:C2    | 8:CB:2383:G:N1    | 2.84                     | 0.45              |
| 8:CB:2446:G:N2    | 8:CB:2501:C:N4    | 2.65                     | 0.45              |
| 8:CB:2495:G:C6    | 8:CB:2496:C:C4    | 3.04                     | 0.45              |
| 8:CB:2620:C:P     | 10:CD:157:LYS:HG2 | 2.57                     | 0.45              |
| 8:CB:2657:A:C2'   | 8:CB:2658:C:H5'   | 2.46                     | 0.45              |
| 8:CB:2684:U:C5    | 8:CB:2685:G:N7    | 2.85                     | 0.45              |
| 8:CB:2718:G:N2    | 8:CB:2846:G:O2'   | 2.50                     | 0.45              |
| 9:CC:83:ASP:HA    | 9:CC:84:PRO:HD3   | 1.77                     | 0.45              |
| 9:CC:222:THR:OG1  | 9:CC:223:ALA:N    | 2.49                     | 0.45              |
| 9:CC:224:MET:HG2  | 9:CC:233:GLY:H    | 1.81                     | 0.45              |
| 10:CD:101:PHE:HB2 | 10:CD:105:LYS:HD3 | 1.98                     | 0.45              |
| 10:CD:136:ASN:HA  | 10:CD:139:SER:HB3 | 1.91                     | 0.45              |
| 11:CE:3:LEU:O     | 11:CE:13:THR:O    | 2.35                     | 0.45              |
| 11:CE:60:TRP:CD1  | 11:CE:70:SER:HB3  | 2.51                     | 0.45              |
| 11:CE:139:LYS:O   | 11:CE:141:MET:N   | 2.42                     | 0.45              |
| 11:CE:150:THR:OG1 | 11:CE:167:VAL:HB  | 2.15                     | 0.45              |
| 11:CE:159:LEU:C   | 11:CE:161:ALA:H   | 2.19                     | 0.45              |
| 11:CE:193:VAL:O   | 11:CE:198:GLU:O   | 2.34                     | 0.45              |
| 12:CF:133:GLU:C   | 12:CF:134:GLN:O   | 2.54                     | 0.45              |
| 14:CH:44:ILE:HA   | 14:CH:47:PHE:HB3  | 1.99                     | 0.45              |
| 16:CJ:8:PRO:HG2   | 16:CJ:11:VAL:CG1  | 2.46                     | 0.45              |
| 16:CJ:16:TYR:N    | 16:CJ:16:TYR:CD1  | 2.85                     | 0.45              |
| 16:CJ:38:GLY:O    | 16:CJ:41:LYS:HB3  | 2.17                     | 0.45              |
| 16:CJ:58:ASN:HA   | 16:CJ:126:ALA:CA  | 2.47                     | 0.45              |
| 16:CJ:120:ARG:CZ  | 16:CJ:123:LYS:HZ2 | 2.30                     | 0.45              |
| 19:CM:31:PHE:HE1  | 19:CM:126:ILE:O   | 1.99                     | 0.45              |
| 19:CM:61:GLY:HA3  | 19:CM:105:MET:CB  | 2.43                     | 0.45              |
| 20:CN:52:ILE:HD13 | 20:CN:79:LEU:HD23 | 1.98                     | 0.45              |
| 23:CQ:23:TYR:H    | 23:CQ:28:SER:HG   | 1.62                     | 0.45              |
| 23:CQ:86:SER:O    | 23:CQ:88:GLU:N    | 2.50                     | 0.45              |
| 23:CQ:89:ILE:O    | 24:CR:53:PHE:HE1  | 2.00                     | 0.45              |
| 30:CX:9:LYS:HG2   | 30:CX:11:VAL:HB   | 1.97                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:44:A:C2     | 33:DA:45:G:C4     | 3.04                     | 0.45              |
| 33:DA:81:A:C2     | 33:DA:82:G:N7     | 2.84                     | 0.45              |
| 33:DA:119:A:C5    | 33:DA:240:G:C5    | 3.04                     | 0.45              |
| 33:DA:318:G:H2'   | 33:DA:319:G:O4'   | 2.15                     | 0.45              |
| 33:DA:501:C:H3'   | 33:DA:501:C:C6    | 2.52                     | 0.45              |
| 33:DA:591:U:O2    | 33:DA:591:U:H2'   | 2.16                     | 0.45              |
| 33:DA:618:C:H5'   | 33:DA:619:U:C5'   | 2.43                     | 0.45              |
| 33:DA:633:G:N2    | 33:DA:634:C:H1'   | 2.31                     | 0.45              |
| 33:DA:753:A:H5''  | 47:DO:68:TYR:HE1  | 1.81                     | 0.45              |
| 33:DA:765:G:O6    | 33:DA:811:C:N4    | 2.49                     | 0.45              |
| 33:DA:780:A:H2'   | 33:DA:781:A:OP2   | 2.17                     | 0.45              |
| 33:DA:793:U:C3'   | 33:DA:794:A:H5''  | 2.46                     | 0.45              |
| 33:DA:862:C:N4    | 33:DA:863:U:C4    | 2.85                     | 0.45              |
| 33:DA:973:G:H3'   | 33:DA:974:A:C5'   | 2.47                     | 0.45              |
| 33:DA:998:C:O2    | 33:DA:998:C:H2'   | 2.15                     | 0.45              |
| 33:DA:1047:G:C2'  | 33:DA:1048:G:H5'  | 2.46                     | 0.45              |
| 33:DA:1053:G:C2   | 33:DA:1056:U:C4   | 3.05                     | 0.45              |
| 33:DA:1055:A:C8   | 33:DA:1206:G:C2   | 3.05                     | 0.45              |
| 33:DA:1077:G:N1   | 33:DA:1081:A:C6   | 2.85                     | 0.45              |
| 33:DA:1088:G:H21  | 33:DA:1167:A:H62  | 1.63                     | 0.45              |
| 33:DA:1105:A:H3'  | 33:DA:1106:G:H5'' | 1.97                     | 0.45              |
| 33:DA:1119:C:N3   | 33:DA:1120:C:C5   | 2.85                     | 0.45              |
| 33:DA:1133:G:C6   | 33:DA:1142:G:C2   | 3.04                     | 0.45              |
| 33:DA:1187:G:H21  | 46:DN:99:SER:HB2  | 1.81                     | 0.45              |
| 33:DA:1430:A:C2   | 33:DA:1471:U:C4   | 3.05                     | 0.45              |
| 36:DD:32:LYS:O    | 36:DD:33:ILE:O    | 2.34                     | 0.45              |
| 36:DD:47:LEU:HB3  | 36:DD:52:VAL:HG22 | 1.99                     | 0.45              |
| 36:DD:142:VAL:O   | 36:DD:143:SER:HB3 | 2.16                     | 0.45              |
| 36:DD:185:PRO:HB2 | 36:DD:190:LEU:HG  | 1.97                     | 0.45              |
| 38:DF:38:ARG:CZ   | 38:DF:63:ASN:ND2  | 2.79                     | 0.45              |
| 38:DF:85:ILE:O    | 38:DF:86:ARG:C    | 2.55                     | 0.45              |
| 46:DN:68:ARG:HA   | 46:DN:69:PRO:HD2  | 1.86                     | 0.45              |
| 2:A1:8:ILE:CG2    | 2:A1:27:ARG:HG2   | 2.46                     | 0.45              |
| 2:A1:31:GLU:HG3   | 2:A1:32:LYS:N     | 2.21                     | 0.45              |
| 7:AA:12:C:H2'     | 29:AW:51:GLY:O    | 2.17                     | 0.45              |
| 7:AA:20:G:H1'     | 7:AA:64:G:N2      | 2.31                     | 0.45              |
| 8:AB:57:C:H2'     | 8:AB:58:G:O5'     | 2.17                     | 0.45              |
| 8:AB:123:G:N1     | 8:AB:129:C:C4     | 2.84                     | 0.45              |
| 8:AB:143:C:C5     | 8:AB:144:A:C6     | 3.05                     | 0.45              |
| 8:AB:338:G:O2'    | 8:AB:339:U:H5'    | 2.17                     | 0.45              |
| 8:AB:340:A:H2'    | 8:AB:341:C:H5'    | 1.99                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:422:A:H2'    | 8:AB:422:A:N3      | 2.31                     | 0.45              |
| 8:AB:558:U:OP1    | 16:AJ:113:PRO:HB2  | 2.16                     | 0.45              |
| 8:AB:568:U:O2     | 8:AB:570:G:C8      | 2.62                     | 0.45              |
| 8:AB:607:U:OP1    | 11:AE:97:ASN:HA    | 2.16                     | 0.45              |
| 8:AB:615:U:C2     | 11:AE:35:TYR:CE1   | 3.05                     | 0.45              |
| 8:AB:633:A:H8     | 8:AB:633:A:O5'     | 1.98                     | 0.45              |
| 8:AB:656:G:H2'    | 8:AB:657:U:O4'     | 2.17                     | 0.45              |
| 8:AB:783:A:C5     | 8:AB:785:G:H1'     | 2.51                     | 0.45              |
| 8:AB:1052:C:H3'   | 8:AB:1052:C:H6     | 1.82                     | 0.45              |
| 8:AB:1230:A:C5    | 8:AB:1231:U:C4     | 3.05                     | 0.45              |
| 8:AB:1269:A:C6    | 8:AB:1270:C:N4     | 2.85                     | 0.45              |
| 8:AB:1322:A:N7    | 8:AB:1323:C:C5     | 2.85                     | 0.45              |
| 8:AB:1409:U:C2    | 8:AB:1410:G:C8     | 3.05                     | 0.45              |
| 8:AB:1443:U:C6    | 8:AB:1443:U:C3'    | 2.99                     | 0.45              |
| 8:AB:1452:G:C2    | 8:AB:2702:G:C5     | 3.05                     | 0.45              |
| 8:AB:1611:C:C2    | 8:AB:1612:C:H5     | 2.35                     | 0.45              |
| 8:AB:1655:A:H2'   | 8:AB:1656:C:O4'    | 2.16                     | 0.45              |
| 8:AB:1812:U:H2'   | 8:AB:1813:G:C8     | 2.50                     | 0.45              |
| 8:AB:2031:A:C8    | 8:AB:2031:A:C5'    | 2.91                     | 0.45              |
| 8:AB:2057:G:C2    | 8:AB:2612:C:O2     | 2.69                     | 0.45              |
| 8:AB:2065:C:HO2'  | 8:AB:2449:U:H3     | 1.62                     | 0.45              |
| 8:AB:2095:A:C8    | 8:AB:2095:A:C4'    | 3.00                     | 0.45              |
| 8:AB:2100:G:OP2   | 8:AB:2100:G:H8     | 2.00                     | 0.45              |
| 8:AB:2225:A:H5''  | 8:AB:2226:C:C5'    | 2.46                     | 0.45              |
| 8:AB:2405:G:OP1   | 18:AL:70:LYS:HE2   | 2.16                     | 0.45              |
| 8:AB:2435:A:C2    | 8:AB:2436:G:C1'    | 2.99                     | 0.45              |
| 8:AB:2508:G:C6    | 8:AB:2582:G:O6     | 2.70                     | 0.45              |
| 8:AB:2513:A:C5    | 8:AB:2514:U:C5     | 3.05                     | 0.45              |
| 8:AB:2543:G:N1    | 8:AB:2765:A:C6     | 2.85                     | 0.45              |
| 8:AB:2562:U:C5    | 8:AB:2563:U:C5     | 3.04                     | 0.45              |
| 8:AB:2635:A:C2    | 8:AB:2636:C:H1'    | 2.52                     | 0.45              |
| 8:AB:2645:G:H5''  | 8:AB:2645:G:C8     | 2.52                     | 0.45              |
| 8:AB:2647:U:O2'   | 8:AB:2648:G:H8     | 1.99                     | 0.45              |
| 8:AB:2744:G:C5    | 8:AB:2745:C:C5     | 3.04                     | 0.45              |
| 9:AC:193:GLU:O    | 9:AC:194:VAL:HG13  | 2.16                     | 0.45              |
| 9:AC:229:HIS:CE1  | 9:AC:231:HIS:NE2   | 2.85                     | 0.45              |
| 10:AD:24:VAL:HB   | 10:AD:193:VAL:HG11 | 1.98                     | 0.45              |
| 11:AE:64:GLY:O    | 11:AE:66:GLY:N     | 2.44                     | 0.45              |
| 11:AE:118:LEU:O   | 11:AE:119:ILE:HD13 | 2.17                     | 0.45              |
| 11:AE:141:MET:O   | 11:AE:143:LEU:HD13 | 2.16                     | 0.45              |
| 11:AE:169:VAL:CG2 | 11:AE:170:ARG:N    | 2.64                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AE:190:ALA:C   | 11:AE:194:LYS:HZ1  | 2.19                     | 0.45              |
| 12:AF:33:ILE:CD1  | 12:AF:90:LEU:HB2   | 2.41                     | 0.45              |
| 12:AF:36:ASN:HA   | 12:AF:86:CYS:HB2   | 1.99                     | 0.45              |
| 12:AF:109:ARG:HG2 | 12:AF:136:ILE:HA   | 1.99                     | 0.45              |
| 13:AG:11:PRO:HG2  | 13:AG:12:ALA:H     | 1.81                     | 0.45              |
| 16:AJ:4:PHE:CZ    | 16:AJ:6:ALA:CA     | 3.00                     | 0.45              |
| 16:AJ:81:ILE:HA   | 16:AJ:84:ILE:CD1   | 2.35                     | 0.45              |
| 18:AL:110:VAL:O   | 18:AL:111:ILE:HD12 | 2.17                     | 0.45              |
| 24:AR:51:VAL:HG13 | 24:AR:52:PRO:HD2   | 1.98                     | 0.45              |
| 33:BA:104:G:C2    | 33:BA:105:G:N7     | 2.85                     | 0.45              |
| 33:BA:343:U:O2    | 33:BA:347:G:C2     | 2.69                     | 0.45              |
| 33:BA:447:G:H21   | 33:BA:488:C:H42    | 1.65                     | 0.45              |
| 33:BA:502:A:H3'   | 33:BA:502:A:C8     | 2.52                     | 0.45              |
| 33:BA:836:G:C5    | 33:BA:837:U:C4     | 3.05                     | 0.45              |
| 33:BA:922:G:C2    | 33:BA:1396:A:H2    | 2.28                     | 0.45              |
| 33:BA:1116:U:O2'  | 41:BI:109:GLN:HG3  | 2.17                     | 0.45              |
| 33:BA:1137:C:H5'  | 33:BA:1138:G:OP1   | 2.16                     | 0.45              |
| 33:BA:1343:G:C6   | 33:BA:1344:C:C4    | 3.05                     | 0.45              |
| 33:BA:1416:G:C6   | 33:BA:1485:U:O2    | 2.70                     | 0.45              |
| 35:BC:33:ASP:O    | 35:BC:37:LYS:HE2   | 2.17                     | 0.45              |
| 36:BD:11:SER:HA   | 36:BD:14:GLU:HB2   | 1.99                     | 0.45              |
| 36:BD:53:GLN:CB   | 36:BD:202:LEU:HD13 | 2.46                     | 0.45              |
| 39:BG:73:GLU:HG2  | 39:BG:90:VAL:CG1   | 2.47                     | 0.45              |
| 41:BI:44:ARG:NH1  | 41:BI:44:ARG:CG    | 2.61                     | 0.45              |
| 41:BI:90:ASP:OD1  | 41:BI:92:SER:HB3   | 2.17                     | 0.45              |
| 43:BK:86:LYS:HG3  | 43:BK:112:VAL:O    | 2.17                     | 0.45              |
| 43:BK:125:LYS:HB3 | 43:BK:126:ARG:H    | 1.62                     | 0.45              |
| 46:BN:74:ARG:C    | 46:BN:74:ARG:HD3   | 2.36                     | 0.45              |
| 1:C0:16:ARG:HA    | 1:C0:16:ARG:HD3    | 1.28                     | 0.45              |
| 4:C3:51:LYS:HZ1   | 8:CB:2359:C:C1'    | 2.29                     | 0.45              |
| 7:CA:43:C:H3'     | 7:CA:44:G:C5'      | 2.45                     | 0.45              |
| 7:CA:118:C:O5'    | 7:CA:118:C:H6      | 1.99                     | 0.45              |
| 8:CB:80:G:C6      | 8:CB:81:G:N7       | 2.84                     | 0.45              |
| 8:CB:192:C:C5     | 8:CB:193:U:C6      | 3.04                     | 0.45              |
| 8:CB:281:C:H6     | 8:CB:281:C:O5'     | 2.00                     | 0.45              |
| 8:CB:738:G:C4     | 8:CB:759:G:N1      | 2.85                     | 0.45              |
| 8:CB:989:G:O2'    | 8:CB:990:A:H5'     | 2.17                     | 0.45              |
| 8:CB:1000:A:N7    | 8:CB:1155:A:N7     | 2.65                     | 0.45              |
| 8:CB:1038:G:N1    | 8:CB:1118:C:N4     | 2.64                     | 0.45              |
| 8:CB:1056:G:C4'   | 8:CB:1086:A:C8     | 3.00                     | 0.45              |
| 8:CB:1130:U:N3    | 8:CB:2025:C:OP1    | 2.50                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 8:CB:1229:C:H2'  | 8:CB:1230:A:H8    | 1.80                     | 0.45              |
| 8:CB:1230:A:H2'  | 8:CB:1231:U:H6    | 1.82                     | 0.45              |
| 8:CB:1353:A:C4   | 8:CB:1378:A:C6    | 3.05                     | 0.45              |
| 8:CB:1426:G:C4   | 8:CB:1427:A:N7    | 2.85                     | 0.45              |
| 8:CB:1427:A:C4   | 8:CB:1428:C:C5    | 3.05                     | 0.45              |
| 8:CB:1652:A:C6   | 8:CB:1653:G:N2    | 2.85                     | 0.45              |
| 8:CB:1672:A:C2   | 8:CB:1673:G:C4    | 3.05                     | 0.45              |
| 8:CB:1694:C:C6   | 8:CB:1694:C:H5''  | 2.52                     | 0.45              |
| 8:CB:1822:C:C2'  | 8:CB:1823:G:H5''  | 2.46                     | 0.45              |
| 8:CB:1900:A:C6   | 8:CB:1970:A:N7    | 2.85                     | 0.45              |
| 8:CB:2007:U:C6   | 8:CB:2007:U:C5'   | 3.00                     | 0.45              |
| 8:CB:2020:A:N7   | 8:CB:2022:U:C4    | 2.85                     | 0.45              |
| 8:CB:2137:U:H2'  | 8:CB:2138:G:C8    | 2.50                     | 0.45              |
| 8:CB:2201:G:N1   | 8:CB:2223:G:C5    | 2.84                     | 0.45              |
| 8:CB:2270:A:N7   | 8:CB:2271:G:C5    | 2.84                     | 0.45              |
| 8:CB:2297:A:H2'  | 8:CB:2298:A:H8    | 1.82                     | 0.45              |
| 8:CB:2360:G:N2   | 8:CB:2428:G:C6    | 2.83                     | 0.45              |
| 8:CB:2466:C:H1'  | 19:CM:118:LYS:HZ3 | 1.78                     | 0.45              |
| 8:CB:2520:C:O5'  | 8:CB:2520:C:H6    | 2.00                     | 0.45              |
| 8:CB:2837:A:H2'  | 8:CB:2838:G:C5'   | 2.47                     | 0.45              |
| 9:CC:29:PHE:CZ   | 9:CC:81:GLU:OE1   | 2.70                     | 0.45              |
| 9:CC:121:ALA:H   | 9:CC:129:LEU:CD1  | 2.26                     | 0.45              |
| 9:CC:145:MET:HA  | 9:CC:183:VAL:HG21 | 1.99                     | 0.45              |
| 9:CC:206:LYS:O   | 9:CC:207:ALA:C    | 2.54                     | 0.45              |
| 10:CD:112:THR:O  | 10:CD:113:SER:O   | 2.34                     | 0.45              |
| 11:CE:9:GLN:HG3  | 11:CE:10:SER:N    | 2.30                     | 0.45              |
| 11:CE:27:LEU:HB3 | 11:CE:30:GLN:HB3  | 1.97                     | 0.45              |
| 11:CE:112:LEU:O  | 11:CE:114:ARG:HG2 | 2.16                     | 0.45              |
| 13:CG:145:ALA:O  | 13:CG:147:LEU:N   | 2.49                     | 0.45              |
| 16:CJ:54:ILE:CG2 | 16:CJ:55:ILE:N    | 2.79                     | 0.45              |
| 16:CJ:113:PRO:CA | 16:CJ:116:ARG:HB2 | 2.43                     | 0.45              |
| 18:CL:8:PRO:O    | 18:CL:9:ALA:CB    | 2.65                     | 0.45              |
| 19:CM:47:GLU:O   | 19:CM:50:ARG:HB3  | 2.17                     | 0.45              |
| 22:CP:61:ARG:NH2 | 22:CP:75:THR:OG1  | 2.48                     | 0.45              |
| 33:DA:110:C:H2'  | 33:DA:111:G:H8    | 1.80                     | 0.45              |
| 33:DA:248:C:C2   | 33:DA:249:U:C5    | 3.05                     | 0.45              |
| 33:DA:361:G:C2'  | 33:DA:362:G:H5'   | 2.47                     | 0.45              |
| 33:DA:538:G:C6   | 33:DA:539:A:C2    | 3.05                     | 0.45              |
| 33:DA:585:G:C2'  | 33:DA:586:C:H5'   | 2.47                     | 0.45              |
| 33:DA:642:A:N9   | 40:DH:105:THR:O   | 2.49                     | 0.45              |
| 33:DA:720:C:H5'' | 33:DA:721:G:C2'   | 2.47                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:795:C:H1'    | 33:DA:1506:U:C5   | 2.52                     | 0.45              |
| 33:DA:876:C:C4     | 33:DA:877:G:N7    | 2.85                     | 0.45              |
| 33:DA:931:C:N3     | 33:DA:1386:G:N2   | 2.54                     | 0.45              |
| 33:DA:973:G:O5'    | 33:DA:974:A:H5'   | 2.17                     | 0.45              |
| 33:DA:1015:G:C8    | 33:DA:1015:G:H3'  | 2.52                     | 0.45              |
| 33:DA:1179:A:N6    | 33:DA:1180:A:C2   | 2.85                     | 0.45              |
| 33:DA:1387:G:H2'   | 33:DA:1388:C:C5   | 2.47                     | 0.45              |
| 33:DA:1408:A:N3    | 33:DA:1494:G:C2   | 2.84                     | 0.45              |
| 33:DA:1428:A:N1    | 33:DA:1473:G:N1   | 2.65                     | 0.45              |
| 35:DC:143:LEU:HD23 | 35:DC:144:GLY:N   | 2.32                     | 0.45              |
| 36:DD:116:LEU:HA   | 36:DD:119:HIS:CB  | 2.36                     | 0.45              |
| 37:DE:15:ILE:CD1   | 37:DE:37:VAL:HG23 | 2.45                     | 0.45              |
| 38:DF:38:ARG:HG2   | 38:DF:39:LEU:N    | 2.32                     | 0.45              |
| 41:DI:47:VAL:O     | 41:DI:50:PRO:HD2  | 2.17                     | 0.45              |
| 43:DK:58:THR:HB    | 43:DK:59:PRO:CD   | 2.47                     | 0.45              |
| 44:DL:19:ASN:N     | 44:DL:19:ASN:OD1  | 2.49                     | 0.45              |
| 44:DL:64:SER:OG    | 44:DL:65:TYR:N    | 2.50                     | 0.45              |
| 49:DQ:17:GLU:O     | 49:DQ:18:LYS:HB2  | 2.17                     | 0.45              |
| 49:DQ:64:ARG:HA    | 49:DQ:65:PRO:HD2  | 1.70                     | 0.45              |
| 50:DR:38:ILE:HD12  | 50:DR:39:VAL:O    | 2.17                     | 0.45              |
| 4:A3:32:LEU:C      | 4:A3:32:LEU:HD13  | 2.37                     | 0.45              |
| 4:A3:34:LYS:HB2    | 4:A3:34:LYS:HZ1   | 1.75                     | 0.45              |
| 4:A3:54:LEU:H      | 4:A3:54:LEU:HG    | 1.59                     | 0.45              |
| 7:AA:30:C:C2'      | 7:AA:31:C:H5'     | 2.46                     | 0.45              |
| 7:AA:100:G:C6      | 7:AA:101:A:C5     | 3.05                     | 0.45              |
| 7:AA:105:G:N2      | 7:AA:106:G:H1'    | 2.32                     | 0.45              |
| 7:AA:113:C:H2'     | 7:AA:114:C:O4'    | 2.17                     | 0.45              |
| 8:AB:72:U:C6       | 30:AX:54:LYS:HG2  | 2.52                     | 0.45              |
| 8:AB:185:G:C6      | 8:AB:212:G:C2     | 3.04                     | 0.45              |
| 8:AB:324:A:N6      | 8:AB:325:G:C2     | 2.85                     | 0.45              |
| 8:AB:384:A:N7      | 8:AB:385:C:C5     | 2.85                     | 0.45              |
| 8:AB:417:C:H2'     | 8:AB:418:C:H6     | 1.81                     | 0.45              |
| 8:AB:571:U:O4      | 8:AB:575:A:C5     | 2.69                     | 0.45              |
| 8:AB:606:U:OP1     | 11:AE:99:LYS:HG2  | 2.16                     | 0.45              |
| 8:AB:748:G:N7      | 8:AB:750:A:C8     | 2.84                     | 0.45              |
| 8:AB:812:C:H2'     | 8:AB:813:U:H5'    | 1.98                     | 0.45              |
| 8:AB:1037:G:N2     | 8:AB:1038:G:H1'   | 2.31                     | 0.45              |
| 8:AB:1107:G:H2'    | 8:AB:1108:U:H5'   | 1.97                     | 0.45              |
| 8:AB:1155:A:OP1    | 23:AQ:54:ARG:HD2  | 2.16                     | 0.45              |
| 8:AB:1191:G:H2'    | 8:AB:1192:G:O4'   | 2.17                     | 0.45              |
| 8:AB:1205:A:C8     | 11:AE:164:LEU:CD2 | 2.92                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1282:U:H2'   | 8:AB:1283:G:O4'    | 2.17                     | 0.45              |
| 8:AB:1420:A:N3    | 8:AB:2211:A:C8     | 2.84                     | 0.45              |
| 8:AB:1734:G:H8    | 8:AB:1734:G:O5'    | 1.98                     | 0.45              |
| 8:AB:1807:G:C8    | 8:AB:1807:G:C3'    | 3.00                     | 0.45              |
| 8:AB:1838:C:N4    | 8:AB:1899:A:N3     | 2.64                     | 0.45              |
| 8:AB:2064:C:H1'   | 8:AB:2450:A:C5     | 2.51                     | 0.45              |
| 8:AB:2246:G:H8    | 8:AB:2246:G:O5'    | 2.00                     | 0.45              |
| 8:AB:2299:U:H3'   | 8:AB:2299:U:C6     | 2.51                     | 0.45              |
| 8:AB:2330:G:H1'   | 29:AW:36:ILE:HD13  | 1.97                     | 0.45              |
| 8:AB:2345:G:C2    | 8:AB:2381:A:C4     | 3.05                     | 0.45              |
| 8:AB:2464:G:C5    | 8:AB:2487:G:N1     | 2.85                     | 0.45              |
| 8:AB:2547:A:C8    | 8:AB:2566:A:C5     | 3.04                     | 0.45              |
| 8:AB:2734:A:C2'   | 8:AB:2735:G:H5'    | 2.47                     | 0.45              |
| 8:AB:2748:A:H2'   | 8:AB:2749:A:C8     | 2.52                     | 0.45              |
| 8:AB:2830:C:OP1   | 10:AD:55:LYS:CE    | 2.65                     | 0.45              |
| 8:AB:2855:C:H2'   | 8:AB:2856:A:H5'    | 1.99                     | 0.45              |
| 9:AC:124:LYS:HG3  | 9:AC:126:GLY:N     | 2.29                     | 0.45              |
| 10:AD:13:ARG:O    | 10:AD:14:ILE:C     | 2.55                     | 0.45              |
| 10:AD:159:LYS:O   | 10:AD:161:MET:N    | 2.50                     | 0.45              |
| 11:AE:21:ARG:HB3  | 11:AE:22:ASP:H     | 1.64                     | 0.45              |
| 11:AE:147:LEU:CD1 | 11:AE:183:PHE:HA   | 2.47                     | 0.45              |
| 12:AF:142:TYR:HB3 | 45:BM:2:ARG:NH2    | 2.31                     | 0.45              |
| 13:AG:84:LYS:NZ   | 13:AG:164:ALA:HB3  | 2.32                     | 0.45              |
| 13:AG:122:ALA:CB  | 13:AG:130:ILE:HG22 | 2.47                     | 0.45              |
| 17:AK:105:ARG:O   | 17:AK:108:ARG:HB2  | 2.17                     | 0.45              |
| 19:AM:98:PRO:O    | 19:AM:100:LYS:HD2  | 2.17                     | 0.45              |
| 20:AN:78:LYS:HD2  | 20:AN:82:GLU:OE2   | 2.17                     | 0.45              |
| 21:AO:1:MET:CG    | 21:AO:2:ASP:OD1    | 2.64                     | 0.45              |
| 21:AO:22:GLY:O    | 21:AO:23:ALA:C     | 2.55                     | 0.45              |
| 21:AO:107:ALA:C   | 21:AO:109:ALA:H    | 2.19                     | 0.45              |
| 22:AP:105:LYS:HB2 | 33:BA:1432:G:OP1   | 2.16                     | 0.45              |
| 23:AQ:4:LYS:O     | 23:AQ:6:GLY:N      | 2.49                     | 0.45              |
| 23:AQ:65:ASN:HA   | 23:AQ:75:TYR:HB2   | 1.99                     | 0.45              |
| 25:AS:90:LYS:N    | 25:AS:90:LYS:CE    | 2.79                     | 0.45              |
| 26:AT:50:LEU:HD21 | 30:AX:26:PHE:CZ    | 2.52                     | 0.45              |
| 27:AU:51:LEU:O    | 27:AU:51:LEU:HD23  | 2.17                     | 0.45              |
| 33:BA:64:G:C8     | 33:BA:99:C:C5      | 3.05                     | 0.45              |
| 33:BA:325:A:N6    | 33:BA:326:G:C2     | 2.85                     | 0.45              |
| 33:BA:468:A:H3'   | 33:BA:469:C:H5''   | 1.98                     | 0.45              |
| 33:BA:514:C:N3    | 33:BA:538:G:O6     | 2.49                     | 0.45              |
| 33:BA:540:G:C6    | 33:BA:541:G:C5     | 3.05                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:552:U:O5'    | 33:BA:552:U:H6     | 2.00                     | 0.45              |
| 33:BA:602:A:C2     | 33:BA:637:C:C4     | 3.04                     | 0.45              |
| 33:BA:699:C:H3'    | 33:BA:699:C:C6     | 2.50                     | 0.45              |
| 33:BA:794:A:C6     | 33:BA:795:C:C4     | 3.05                     | 0.45              |
| 33:BA:857:C:H2'    | 33:BA:858:G:O4'    | 2.16                     | 0.45              |
| 33:BA:875:U:C6     | 33:BA:875:U:C3'    | 3.00                     | 0.45              |
| 33:BA:1055:A:H1'   | 35:BC:155:ARG:HH12 | 1.74                     | 0.45              |
| 33:BA:1240:U:OP2   | 39:BG:115:MET:HB3  | 2.17                     | 0.45              |
| 33:BA:1280:A:N7    | 42:BJ:43:PRO:HD3   | 2.32                     | 0.45              |
| 33:BA:1458:G:H2'   | 33:BA:1459:G:C8    | 2.51                     | 0.45              |
| 33:BA:1511:G:N1    | 33:BA:1525:G:C2    | 2.85                     | 0.45              |
| 35:BC:66:THR:CG2   | 35:BC:67:ILE:N     | 2.79                     | 0.45              |
| 36:BD:160:LEU:HD22 | 36:BD:161:ALA:N    | 2.32                     | 0.45              |
| 36:BD:183:ARG:HH22 | 36:BD:186:GLU:H    | 1.64                     | 0.45              |
| 37:BE:45:VAL:HG11  | 37:BE:117:ALA:CA   | 2.47                     | 0.45              |
| 37:BE:83:PRO:HB3   | 37:BE:96:GLN:HG3   | 1.99                     | 0.45              |
| 38:BF:8:PHE:CE2    | 38:BF:60:VAL:HB    | 2.52                     | 0.45              |
| 41:BI:62:LEU:N     | 41:BI:62:LEU:HD22  | 2.32                     | 0.45              |
| 42:BJ:40:ILE:HA    | 42:BJ:41:PRO:HD2   | 1.77                     | 0.45              |
| 42:BJ:42:LEU:CD2   | 42:BJ:43:PRO:HD2   | 2.47                     | 0.45              |
| 43:BK:113:THR:HG23 | 43:BK:114:PRO:HD2  | 1.97                     | 0.45              |
| 44:BL:93:ARG:C     | 44:BL:94:TYR:CD2   | 2.90                     | 0.45              |
| 44:BL:115:LYS:O    | 44:BL:116:TYR:HB2  | 2.17                     | 0.45              |
| 46:BN:64:ARG:CG    | 46:BN:64:ARG:NH1   | 2.61                     | 0.45              |
| 3:C2:24:THR:HG22   | 3:C2:25:LYS:N      | 2.32                     | 0.45              |
| 4:C3:4:LYS:O       | 4:C3:5:THR:C       | 2.55                     | 0.45              |
| 8:CB:23:G:O2'      | 8:CB:24:G:H5'      | 2.17                     | 0.45              |
| 8:CB:237:C:O2      | 8:CB:261:G:N3      | 2.49                     | 0.45              |
| 8:CB:393:C:H2'     | 8:CB:394:C:H6      | 1.82                     | 0.45              |
| 8:CB:554:U:H2'     | 8:CB:555:G:C8      | 2.51                     | 0.45              |
| 8:CB:571:U:O2'     | 8:CB:572:A:H5''    | 2.17                     | 0.45              |
| 8:CB:579:G:C4'     | 8:CB:2017:U:H2'    | 2.47                     | 0.45              |
| 8:CB:607:U:H2'     | 8:CB:608:A:C5'     | 2.46                     | 0.45              |
| 8:CB:715:A:OP2     | 47:DO:88:ARG:NH2   | 2.50                     | 0.45              |
| 8:CB:915:C:H3'     | 8:CB:916:G:C8      | 2.49                     | 0.45              |
| 8:CB:1000:A:C6     | 8:CB:1001:A:C6     | 3.05                     | 0.45              |
| 8:CB:1191:G:H2'    | 8:CB:1192:G:O4'    | 2.16                     | 0.45              |
| 8:CB:1206:G:N2     | 8:CB:1241:A:C2     | 2.85                     | 0.45              |
| 8:CB:1220:G:O6     | 8:CB:1230:A:C6     | 2.69                     | 0.45              |
| 8:CB:1220:G:O6     | 8:CB:1230:A:N6     | 2.49                     | 0.45              |
| 8:CB:1241:A:H2'    | 8:CB:1242:U:O5'    | 2.17                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1279:G:C2     | 8:CB:1292:G:C2    | 3.05                     | 0.45              |
| 8:CB:1292:G:C4     | 8:CB:1293:C:C5    | 3.05                     | 0.45              |
| 8:CB:1404:C:C2     | 8:CB:1405:U:C5    | 3.05                     | 0.45              |
| 8:CB:1411:U:H2'    | 8:CB:1412:U:C6    | 2.52                     | 0.45              |
| 8:CB:1445:G:N2     | 8:CB:1547:C:C4    | 2.84                     | 0.45              |
| 8:CB:1606:C:O2'    | 8:CB:1608:A:N1    | 2.40                     | 0.45              |
| 8:CB:1658:C:OP1    | 10:CD:136:ASN:CG  | 2.54                     | 0.45              |
| 8:CB:1681:G:C5     | 8:CB:1762:A:C2    | 3.05                     | 0.45              |
| 8:CB:1684:G:H1     | 8:CB:1704:C:N4    | 2.13                     | 0.45              |
| 8:CB:1708:C:HO2'   | 8:CB:1709:U:H6    | 1.65                     | 0.45              |
| 8:CB:1791:A:H8     | 8:CB:1791:A:H3'   | 1.82                     | 0.45              |
| 8:CB:1803:A:N6     | 8:CB:1814:G:H1'   | 2.32                     | 0.45              |
| 8:CB:1889:A:H1'    | 8:CB:2086:U:O2'   | 2.16                     | 0.45              |
| 8:CB:1977:A:N6     | 8:CB:1978:A:C6    | 2.84                     | 0.45              |
| 8:CB:2263:C:H2'    | 8:CB:2264:C:C6    | 2.38                     | 0.45              |
| 8:CB:2315:G:H2'    | 8:CB:2316:G:C8    | 2.51                     | 0.45              |
| 8:CB:2405:G:C2'    | 8:CB:2411:A:N6    | 2.77                     | 0.45              |
| 8:CB:2756:U:H4'    | 8:CB:2757:A:OP1   | 2.15                     | 0.45              |
| 8:CB:2861:U:O2'    | 8:CB:2862:G:H5'   | 2.16                     | 0.45              |
| 9:CC:156:SER:OG    | 9:CC:195:GLY:CA   | 2.63                     | 0.45              |
| 10:CD:4:LEU:HD11   | 10:CD:77:ARG:HE   | 1.82                     | 0.45              |
| 10:CD:38:LYS:C     | 10:CD:42:ASN:HD21 | 2.19                     | 0.45              |
| 10:CD:131:ASP:O    | 10:CD:132:ALA:HB2 | 2.16                     | 0.45              |
| 10:CD:165:MET:HB3  | 10:CD:166:GLY:H   | 1.64                     | 0.45              |
| 10:CD:206:ALA:O    | 10:CD:207:VAL:C   | 2.54                     | 0.45              |
| 11:CE:4:VAL:CA     | 11:CE:14:VAL:HG13 | 2.47                     | 0.45              |
| 11:CE:37:ALA:C     | 11:CE:39:ALA:H    | 2.20                     | 0.45              |
| 11:CE:148:ILE:HG22 | 11:CE:185:LYS:CB  | 2.46                     | 0.45              |
| 12:CF:53:ALA:HB1   | 12:CF:64:PRO:HG2  | 1.98                     | 0.45              |
| 12:CF:76:PHE:O     | 12:CF:77:LYS:HB3  | 2.16                     | 0.45              |
| 13:CG:40:VAL:C     | 13:CG:41:GLU:HG3  | 2.37                     | 0.45              |
| 18:CL:69:ARG:C     | 18:CL:71:ALA:N    | 2.70                     | 0.45              |
| 19:CM:91:TYR:O     | 19:CM:92:TRP:O    | 2.35                     | 0.45              |
| 20:CN:45:ARG:O     | 20:CN:47:VAL:N    | 2.50                     | 0.45              |
| 20:CN:103:ARG:O    | 20:CN:104:ALA:HB3 | 2.17                     | 0.45              |
| 21:CO:13:ARG:O     | 21:CO:17:LYS:HB2  | 2.16                     | 0.45              |
| 21:CO:109:ALA:O    | 21:CO:112:GLU:HB2 | 2.17                     | 0.45              |
| 22:CP:90:ALA:HB3   | 22:CP:112:ARG:HA  | 1.99                     | 0.45              |
| 22:CP:96:LEU:O     | 22:CP:97:TYR:O    | 2.35                     | 0.45              |
| 25:CS:39:THR:HG23  | 25:CS:39:THR:O    | 2.16                     | 0.45              |
| 27:CU:25:LYS:HB3   | 27:CU:26:ASN:H    | 1.51                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 29:CW:44:PHE:N     | 29:CW:76:ARG:O    | 2.49                     | 0.45              |
| 33:DA:50:A:N7      | 33:DA:361:G:H1'   | 2.32                     | 0.45              |
| 33:DA:95:C:O2      | 33:DA:95:C:C2'    | 2.64                     | 0.45              |
| 33:DA:160:A:C5     | 33:DA:346:G:O6    | 2.70                     | 0.45              |
| 33:DA:192:A:O2'    | 52:DT:54:GLN:OE1  | 2.29                     | 0.45              |
| 33:DA:275:G:C2     | 33:DA:276:G:C8    | 3.05                     | 0.45              |
| 33:DA:293:G:C6     | 33:DA:305:G:C2    | 3.05                     | 0.45              |
| 33:DA:407:U:C4     | 33:DA:435:A:N6    | 2.84                     | 0.45              |
| 33:DA:455:G:C2     | 33:DA:478:A:C2    | 3.05                     | 0.45              |
| 33:DA:463:U:C2'    | 33:DA:464:U:O4'   | 2.61                     | 0.45              |
| 33:DA:520:A:N7     | 33:DA:521:G:C8    | 2.85                     | 0.45              |
| 33:DA:577:G:H5'    | 33:DA:816:A:N7    | 2.31                     | 0.45              |
| 33:DA:590:U:O2'    | 33:DA:591:U:H5'   | 2.17                     | 0.45              |
| 33:DA:679:C:N4     | 33:DA:711:G:N1    | 2.57                     | 0.45              |
| 33:DA:711:G:H2'    | 33:DA:712:A:C5'   | 2.45                     | 0.45              |
| 33:DA:730:G:C5     | 33:DA:731:G:H1'   | 2.52                     | 0.45              |
| 33:DA:735:C:N4     | 33:DA:736:C:H41   | 2.15                     | 0.45              |
| 33:DA:750:C:O2'    | 47:DO:20:ASP:O    | 2.35                     | 0.45              |
| 33:DA:802:A:H2'    | 33:DA:802:A:N3    | 2.32                     | 0.45              |
| 33:DA:851:G:C6     | 33:DA:852:G:N7    | 2.84                     | 0.45              |
| 33:DA:991:U:H4'    | 33:DA:991:U:OP1   | 2.16                     | 0.45              |
| 33:DA:1060:U:O2    | 33:DA:1061:G:C8   | 2.69                     | 0.45              |
| 33:DA:1198:G:C6    | 33:DA:1199:U:N3   | 2.85                     | 0.45              |
| 33:DA:1318:A:O2'   | 51:DS:36:ARG:HD3  | 2.16                     | 0.45              |
| 33:DA:1388:C:H2'   | 33:DA:1389:C:C5   | 2.51                     | 0.45              |
| 33:DA:1483:A:O5'   | 33:DA:1483:A:H8   | 2.00                     | 0.45              |
| 34:DB:59:ILE:H     | 34:DB:59:ILE:HG13 | 1.47                     | 0.45              |
| 35:DC:134:LYS:HE3  | 35:DC:138:GLN:HG2 | 1.98                     | 0.45              |
| 36:DD:18:LEU:O     | 36:DD:19:PHE:C    | 2.55                     | 0.45              |
| 36:DD:144:ILE:HG23 | 36:DD:149:LYS:HE3 | 1.99                     | 0.45              |
| 38:DF:84:VAL:HG22  | 38:DF:85:ILE:N    | 2.31                     | 0.45              |
| 43:DK:91:GLY:CA    | 43:DK:94:SER:HB3  | 2.34                     | 0.45              |
| 46:DN:5:MET:HG3    | 46:DN:8:ARG:HE    | 1.82                     | 0.45              |
| 52:DT:5:SER:C      | 52:DT:7:LYS:N     | 2.70                     | 0.45              |
| 3:A2:16:HIS:O      | 3:A2:18:PHE:HD1   | 2.00                     | 0.45              |
| 3:A2:30:VAL:O      | 3:A2:33:ARG:HG3   | 2.17                     | 0.45              |
| 5:A4:1:MET:C       | 8:AB:2526:G:H21   | 2.19                     | 0.45              |
| 8:AB:59:U:O2'      | 8:AB:60:G:H5''    | 2.17                     | 0.45              |
| 8:AB:61:C:N3       | 8:AB:94:A:N1      | 2.63                     | 0.45              |
| 8:AB:71:A:N1       | 8:AB:114:U:O2     | 2.49                     | 0.45              |
| 8:AB:80:G:C6       | 8:AB:81:G:N7      | 2.85                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:98:G:C8      | 8:AB:98:G:H5'      | 2.52                     | 0.45              |
| 8:AB:141:G:OP2    | 8:AB:142:A:C6      | 2.70                     | 0.45              |
| 8:AB:144:A:C2     | 8:AB:145:C:N3      | 2.85                     | 0.45              |
| 8:AB:152:A:O2'    | 8:AB:153:U:H5'     | 2.16                     | 0.45              |
| 8:AB:155:A:C2     | 8:AB:172:A:C2      | 3.04                     | 0.45              |
| 8:AB:191:A:H8     | 8:AB:191:A:O5'     | 1.99                     | 0.45              |
| 8:AB:346:A:N6     | 8:AB:347:A:N3      | 2.65                     | 0.45              |
| 8:AB:400:G:H3'    | 8:AB:400:G:H8      | 1.82                     | 0.45              |
| 8:AB:410:G:H2'    | 8:AB:2407:A:C8     | 2.52                     | 0.45              |
| 8:AB:799:G:O2'    | 8:AB:800:A:OP1     | 2.27                     | 0.45              |
| 8:AB:825:A:C2     | 8:AB:826:U:C2      | 3.05                     | 0.45              |
| 8:AB:1000:A:C6    | 8:AB:1001:A:C6     | 3.04                     | 0.45              |
| 8:AB:1003:G:C8    | 8:AB:1003:G:C5'    | 2.98                     | 0.45              |
| 8:AB:1010:A:H4'   | 23:AQ:75:TYR:CD2   | 2.50                     | 0.45              |
| 8:AB:1214:A:H61   | 8:AB:1235:G:C2'    | 2.30                     | 0.45              |
| 8:AB:1286:A:C2    | 8:AB:1329:U:C4     | 3.05                     | 0.45              |
| 8:AB:1322:A:H3'   | 8:AB:1322:A:C8     | 2.52                     | 0.45              |
| 8:AB:1655:A:C8    | 8:AB:1656:C:C5     | 3.05                     | 0.45              |
| 8:AB:1791:A:H2'   | 8:AB:1792:G:O4'    | 2.17                     | 0.45              |
| 8:AB:1861:G:H8    | 8:AB:1861:G:C5'    | 2.29                     | 0.45              |
| 8:AB:2001:C:H2'   | 8:AB:2002:G:O5'    | 2.16                     | 0.45              |
| 8:AB:2052:A:O5'   | 8:AB:2052:A:C8     | 2.68                     | 0.45              |
| 8:AB:2060:A:N1    | 8:AB:2502:G:C6     | 2.85                     | 0.45              |
| 8:AB:2105:U:C6    | 8:AB:2105:U:C3'    | 3.00                     | 0.45              |
| 8:AB:2200:C:C6    | 8:AB:2200:C:C3'    | 3.00                     | 0.45              |
| 8:AB:2444:G:OP1   | 11:AE:63:LYS:NZ    | 2.50                     | 0.45              |
| 8:AB:2580:U:OP1   | 10:AD:137:SER:HB2  | 2.16                     | 0.45              |
| 9:AC:68:ARG:NH1   | 9:AC:127:ASN:HA    | 2.31                     | 0.45              |
| 9:AC:156:SER:O    | 9:AC:195:GLY:HA3   | 2.16                     | 0.45              |
| 9:AC:163:ILE:HG22 | 9:AC:164:VAL:H     | 1.81                     | 0.45              |
| 9:AC:174:ARG:O    | 9:AC:174:ARG:CG    | 2.65                     | 0.45              |
| 9:AC:254:LYS:HB2  | 9:AC:254:LYS:HE2   | 1.61                     | 0.45              |
| 11:AE:3:LEU:HD12  | 11:AE:13:THR:N     | 2.12                     | 0.45              |
| 11:AE:84:THR:CG2  | 11:AE:85:PHE:N     | 2.78                     | 0.45              |
| 11:AE:164:LEU:CD1 | 11:AE:165:HIS:N    | 2.79                     | 0.45              |
| 11:AE:190:ALA:HB3 | 11:AE:193:VAL:HG13 | 1.99                     | 0.45              |
| 11:AE:190:ALA:C   | 11:AE:194:LYS:NZ   | 2.70                     | 0.45              |
| 12:AF:133:GLU:C   | 12:AF:134:GLN:O    | 2.55                     | 0.45              |
| 13:AG:6:ALA:O     | 13:AG:8:VAL:N      | 2.50                     | 0.45              |
| 15:AI:124:MET:O   | 15:AI:128:ILE:HG12 | 2.16                     | 0.45              |
| 16:AJ:85:LYS:HZ3  | 16:AJ:86:GLN:H     | 1.63                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AK:61:VAL:HG11 | 17:AK:112:PHE:HE2  | 1.82                     | 0.45              |
| 18:AL:56:PRO:HA   | 18:AL:60:ARG:CZ    | 2.42                     | 0.45              |
| 18:AL:83:ALA:HB2  | 18:AL:120:VAL:HB   | 1.98                     | 0.45              |
| 19:AM:43:ALA:O    | 19:AM:45:GLN:N     | 2.50                     | 0.45              |
| 19:AM:70:ASP:O    | 19:AM:71:LYS:HB3   | 2.16                     | 0.45              |
| 20:AN:22:ARG:HD3  | 20:AN:68:ALA:O     | 2.17                     | 0.45              |
| 20:AN:92:GLY:O    | 20:AN:93:GLY:C     | 2.55                     | 0.45              |
| 21:AO:80:GLU:HG3  | 21:AO:115:LEU:H    | 1.81                     | 0.45              |
| 23:AQ:13:HIS:CE1  | 23:AQ:31:TYR:CD2   | 2.99                     | 0.45              |
| 24:AR:32:THR:O    | 24:AR:33:VAL:HG23  | 2.15                     | 0.45              |
| 24:AR:42:ALA:HA   | 24:AR:54:VAL:H     | 1.81                     | 0.45              |
| 24:AR:80:ARG:HE   | 24:AR:81:LYS:H     | 1.65                     | 0.45              |
| 24:AR:94:THR:O    | 24:AR:95:ASP:CB    | 2.58                     | 0.45              |
| 27:AU:11:ILE:C    | 27:AU:69:VAL:HB    | 2.37                     | 0.45              |
| 27:AU:69:VAL:CG1  | 27:AU:70:ALA:O     | 2.65                     | 0.45              |
| 30:AX:56:LEU:H    | 30:AX:56:LEU:CD1   | 2.30                     | 0.45              |
| 33:BA:86:G:H1'    | 33:BA:87:C:C6      | 2.52                     | 0.45              |
| 33:BA:137:U:C2    | 33:BA:227:G:C2     | 3.05                     | 0.45              |
| 33:BA:410:G:H5''  | 33:BA:411:A:P      | 2.57                     | 0.45              |
| 33:BA:512:U:O2'   | 33:BA:513:C:H6     | 2.00                     | 0.45              |
| 33:BA:533:A:C5    | 33:BA:536:C:C4     | 3.05                     | 0.45              |
| 33:BA:641:U:H1'   | 33:BA:642:A:N7     | 2.31                     | 0.45              |
| 33:BA:755:G:C5    | 33:BA:756:C:C5     | 3.00                     | 0.45              |
| 33:BA:1043:G:C2   | 33:BA:1044:A:N7    | 2.85                     | 0.45              |
| 33:BA:1397:C:H4'  | 33:BA:1398:A:OP2   | 2.16                     | 0.45              |
| 33:BA:1431:A:C2'  | 33:BA:1432:G:H5''  | 2.47                     | 0.45              |
| 33:BA:1435:G:H2'  | 33:BA:1436:U:H6    | 1.80                     | 0.45              |
| 33:BA:1451:U:H5'' | 33:BA:1452:C:H5    | 1.81                     | 0.45              |
| 33:BA:1509:C:N3   | 33:BA:1510:C:C5    | 2.85                     | 0.45              |
| 34:BB:22:TRP:HB3  | 34:BB:38:HIS:HE1   | 1.72                     | 0.45              |
| 35:BC:180:ASP:O   | 35:BC:181:ILE:HG13 | 2.17                     | 0.45              |
| 37:BE:95:MET:HE1  | 37:BE:143:LEU:HD21 | 1.99                     | 0.45              |
| 40:BH:64:TYR:CD1  | 40:BH:64:TYR:N     | 2.85                     | 0.45              |
| 40:BH:103:VAL:O   | 40:BH:104:SER:C    | 2.55                     | 0.45              |
| 41:BI:49:GLN:N    | 41:BI:50:PRO:HD2   | 2.31                     | 0.45              |
| 43:BK:76:TYR:N    | 43:BK:76:TYR:CD1   | 2.85                     | 0.45              |
| 46:BN:75:LYS:HG3  | 46:BN:75:LYS:O     | 2.15                     | 0.45              |
| 47:BO:24:THR:O    | 47:BO:25:GLU:C     | 2.55                     | 0.45              |
| 53:BU:20:ARG:CA   | 53:BU:24:LYS:HE3   | 2.45                     | 0.45              |
| 1:C0:6:LYS:HZ3    | 1:C0:7:PRO:HD2     | 1.80                     | 0.45              |
| 1:C0:28:SER:O     | 1:C0:29:VAL:HB     | 2.17                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:C1:8:ILE:HG21  | 2:C1:27:ARG:HG2  | 1.98                     | 0.45              |
| 2:C1:8:ILE:CG2   | 2:C1:27:ARG:HG2  | 2.47                     | 0.45              |
| 4:C3:4:LYS:O     | 4:C3:4:LYS:CG    | 2.64                     | 0.45              |
| 4:C3:37:THR:HG21 | 8:CB:2348:U:OP1  | 2.17                     | 0.45              |
| 4:C3:60:CYS:O    | 4:C3:61:LEU:C    | 2.55                     | 0.45              |
| 5:C4:34:LYS:O    | 8:CB:2527:C:H4'  | 2.16                     | 0.45              |
| 7:CA:9:G:H2'     | 7:CA:10:G:C8     | 2.52                     | 0.45              |
| 7:CA:13:G:H3'    | 7:CA:13:G:H8     | 1.81                     | 0.45              |
| 8:CB:62:U:O2'    | 8:CB:63:A:H5'    | 2.17                     | 0.45              |
| 8:CB:93:G:C2'    | 8:CB:94:A:H5'    | 2.47                     | 0.45              |
| 8:CB:132:G:H2'   | 8:CB:133:U:C6    | 2.52                     | 0.45              |
| 8:CB:265:A:O2'   | 8:CB:266:G:C4'   | 2.65                     | 0.45              |
| 8:CB:464:U:H3'   | 8:CB:465:G:H5''  | 1.97                     | 0.45              |
| 8:CB:538:A:C5    | 8:CB:556:A:N6    | 2.81                     | 0.45              |
| 8:CB:560:C:H2'   | 8:CB:561:G:H5'   | 1.98                     | 0.45              |
| 8:CB:616:A:H2'   | 8:CB:617:G:H8    | 1.77                     | 0.45              |
| 8:CB:630:G:H1    | 18:CL:69:ARG:NH1 | 2.15                     | 0.45              |
| 8:CB:675:A:C6    | 8:CB:676:A:C6    | 3.05                     | 0.45              |
| 8:CB:685:A:C5    | 8:CB:689:A:N6    | 2.84                     | 0.45              |
| 8:CB:690:G:C6    | 8:CB:691:C:C5    | 3.05                     | 0.45              |
| 8:CB:747:U:H1'   | 25:CS:92:ARG:CZ  | 2.46                     | 0.45              |
| 8:CB:1116:G:C5   | 8:CB:1117:C:C5   | 3.05                     | 0.45              |
| 8:CB:1183:U:H2'  | 8:CB:1184:U:H6   | 1.81                     | 0.45              |
| 8:CB:1264:A:H8   | 8:CB:1264:A:C5'  | 2.30                     | 0.45              |
| 8:CB:1274:A:C8   | 8:CB:1274:A:H3'  | 2.52                     | 0.45              |
| 8:CB:1531:C:H2'  | 8:CB:1532:A:C8   | 2.51                     | 0.45              |
| 8:CB:1558:C:C2   | 8:CB:1560:G:C5   | 3.04                     | 0.45              |
| 8:CB:1747:U:H2'  | 8:CB:1748:C:C6   | 2.52                     | 0.45              |
| 8:CB:1788:C:H2'  | 8:CB:1789:A:C4'  | 2.46                     | 0.45              |
| 8:CB:1802:A:N6   | 8:CB:1817:G:H21  | 2.14                     | 0.45              |
| 8:CB:1930:G:N2   | 8:CB:1969:A:OP2  | 2.46                     | 0.45              |
| 8:CB:1935:G:N2   | 8:CB:1964:G:C8   | 2.85                     | 0.45              |
| 8:CB:2232:C:H2'  | 8:CB:2233:U:H5'  | 1.99                     | 0.45              |
| 8:CB:2291:U:O2   | 8:CB:2292:U:C2   | 2.70                     | 0.45              |
| 8:CB:2305:U:C6   | 12:CF:151:LEU:C  | 2.90                     | 0.45              |
| 8:CB:2487:G:H2'  | 8:CB:2488:G:H8   | 1.82                     | 0.45              |
| 8:CB:2625:G:H5'' | 8:CB:2625:G:C8   | 2.49                     | 0.45              |
| 8:CB:2636:C:H4'  | 10:CD:80:TRP:HE1 | 1.81                     | 0.45              |
| 8:CB:2691:C:H5'  | 8:CB:2872:A:C2   | 2.51                     | 0.45              |
| 8:CB:2763:G:H8   | 8:CB:2763:G:C5'  | 2.18                     | 0.45              |
| 8:CB:2867:G:O2'  | 8:CB:2868:A:OP2  | 2.27                     | 0.45              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:CC:225:ASN:HD22  | 9:CC:225:ASN:HA   | 1.55                     | 0.45              |
| 13:CG:163:TYR:HD2  | 13:CG:166:GLU:HG3 | 1.81                     | 0.45              |
| 14:CH:115:VAL:CG2  | 14:CH:117:LEU:HB2 | 2.30                     | 0.45              |
| 14:CH:117:LEU:C    | 14:CH:119:ASN:N   | 2.70                     | 0.45              |
| 15:CI:29:GLN:HB2   | 15:CI:30:GLN:NE2  | 2.31                     | 0.45              |
| 16:CJ:19:ASP:OD2   | 16:CJ:20:ALA:N    | 2.48                     | 0.45              |
| 17:CK:106:GLU:C    | 17:CK:108:ARG:N   | 2.68                     | 0.45              |
| 17:CK:113:MET:C    | 17:CK:115:ILE:H   | 2.18                     | 0.45              |
| 18:CL:55:MET:HB3   | 18:CL:56:PRO:CD   | 2.36                     | 0.45              |
| 18:CL:137:ALA:O    | 18:CL:138:ALA:HB2 | 2.17                     | 0.45              |
| 19:CM:40:ARG:CG    | 19:CM:92:TRP:CD1  | 3.00                     | 0.45              |
| 19:CM:66:ARG:O     | 19:CM:67:VAL:O    | 2.35                     | 0.45              |
| 22:CP:23:ASP:CG    | 22:CP:93:LYS:HZ1  | 2.17                     | 0.45              |
| 22:CP:50:ARG:HG3   | 22:CP:99:LEU:HB3  | 1.99                     | 0.45              |
| 23:CQ:13:HIS:CD2   | 23:CQ:31:TYR:CE1  | 3.05                     | 0.45              |
| 24:CR:80:ARG:O     | 24:CR:81:LYS:O    | 2.34                     | 0.45              |
| 30:CX:20:ASN:O     | 30:CX:21:LEU:HG   | 2.16                     | 0.45              |
| 31:CY:29:ARG:C     | 31:CY:30:ARG:HG2  | 2.37                     | 0.45              |
| 32:CZ:5:ILE:HG13   | 32:CZ:51:VAL:CG1  | 2.47                     | 0.45              |
| 32:CZ:59:ARG:HB2   | 32:CZ:61:ASN:H    | 1.80                     | 0.45              |
| 33:DA:18:C:H2'     | 33:DA:19:A:H8     | 1.80                     | 0.45              |
| 33:DA:55:A:C6      | 33:DA:56:U:N3     | 2.85                     | 0.45              |
| 33:DA:330:C:H6     | 33:DA:330:C:H3'   | 1.81                     | 0.45              |
| 33:DA:355:C:N3     | 33:DA:356:A:N7    | 2.64                     | 0.45              |
| 33:DA:459:A:H1'    | 33:DA:474:G:N2    | 2.32                     | 0.45              |
| 33:DA:519:C:H2'    | 33:DA:520:A:H5'   | 1.99                     | 0.45              |
| 33:DA:590:U:C2     | 33:DA:591:U:C6    | 3.04                     | 0.45              |
| 33:DA:892:A:C2'    | 33:DA:893:C:H5'   | 2.45                     | 0.45              |
| 33:DA:917:G:N1     | 33:DA:918:A:C5    | 2.85                     | 0.45              |
| 33:DA:928:G:H22    | 33:DA:1390:U:H1'  | 1.81                     | 0.45              |
| 33:DA:1105:A:C3'   | 33:DA:1106:G:C5'  | 2.93                     | 0.45              |
| 33:DA:1418:A:N7    | 33:DA:1419:G:H1'  | 2.32                     | 0.45              |
| 35:DC:149:LYS:HE3  | 35:DC:200:TRP:CD2 | 2.52                     | 0.45              |
| 35:DC:199:VAL:HG23 | 35:DC:199:VAL:O   | 2.16                     | 0.45              |
| 36:DD:40:HIS:O     | 36:DD:43:ARG:N    | 2.50                     | 0.45              |
| 37:DE:33:THR:HG22  | 37:DE:51:LYS:HB2  | 1.98                     | 0.45              |
| 37:DE:59:ILE:O     | 37:DE:62:ALA:N    | 2.49                     | 0.45              |
| 38:DF:10:VAL:HG21  | 38:DF:21:MET:HE1  | 1.98                     | 0.45              |
| 38:DF:38:ARG:HH21  | 38:DF:61:LEU:CD1  | 2.29                     | 0.45              |
| 40:DH:78:SER:CB    | 40:DH:125:ILE:HA  | 2.45                     | 0.45              |
| 42:DJ:22:THR:HA    | 42:DJ:25:ILE:HG13 | 1.99                     | 0.45              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 42:DJ:42:LEU:CB   | 42:DJ:43:PRO:CD  | 2.95                     | 0.45              |
| 48:DP:67:ILE:HG12 | 48:DP:72:ALA:HB2 | 1.98                     | 0.45              |
| 50:DR:32:ILE:O    | 50:DR:33:THR:O   | 2.35                     | 0.45              |
| 52:DT:24:ARG:HA   | 52:DT:27:MET:HE2 | 1.98                     | 0.45              |
| 53:DU:9:GLU:O     | 53:DU:11:PHE:HD2 | 2.00                     | 0.45              |
| 1:A0:26:SER:HA    | 1:A0:38:LEU:CD1  | 2.47                     | 0.45              |
| 3:A2:19:ARG:NH2   | 8:AB:124:G:C6    | 2.85                     | 0.45              |
| 4:A3:33:THR:O     | 4:A3:34:LYS:C    | 2.55                     | 0.45              |
| 7:AA:14:U:O2'     | 7:AA:15:A:OP1    | 2.34                     | 0.45              |
| 8:AB:38:A:C4'     | 11:AE:46:GLN:CG  | 2.91                     | 0.45              |
| 8:AB:133:U:H2'    | 8:AB:134:G:O4'   | 2.16                     | 0.45              |
| 8:AB:239:C:H2'    | 8:AB:240:C:H6    | 1.80                     | 0.45              |
| 8:AB:301:G:H1'    | 8:AB:302:C:O4'   | 2.17                     | 0.45              |
| 8:AB:682:G:N3     | 8:AB:683:U:C6    | 2.85                     | 0.45              |
| 8:AB:689:A:H61    | 8:AB:773:U:H3    | 1.64                     | 0.45              |
| 8:AB:752:A:O2'    | 8:AB:753:A:P     | 2.75                     | 0.45              |
| 8:AB:917:A:H2'    | 8:AB:918:A:H5'   | 1.99                     | 0.45              |
| 8:AB:1001:A:H61   | 8:AB:1154:G:H2'  | 1.81                     | 0.45              |
| 8:AB:1021:A:H8    | 8:AB:1022:G:C5'  | 2.29                     | 0.45              |
| 8:AB:1216:G:C6    | 8:AB:1217:U:C6   | 3.04                     | 0.45              |
| 8:AB:1246:A:H8    | 8:AB:1246:A:O5'  | 2.00                     | 0.45              |
| 8:AB:1356:G:O2'   | 8:AB:1357:C:H5'  | 2.17                     | 0.45              |
| 8:AB:1445:G:C2    | 8:AB:1547:C:N3   | 2.85                     | 0.45              |
| 8:AB:1455:G:N2    | 8:AB:1456:G:H1'  | 2.31                     | 0.45              |
| 8:AB:1528:A:N9    | 8:AB:1544:A:N6   | 2.65                     | 0.45              |
| 8:AB:1557:C:H3'   | 8:AB:1558:C:C5'  | 2.47                     | 0.45              |
| 8:AB:1567:G:H5''  | 8:AB:1567:G:H8   | 1.82                     | 0.45              |
| 8:AB:1590:A:C6    | 8:AB:1591:A:N6   | 2.85                     | 0.45              |
| 8:AB:1761:C:C4    | 8:AB:1762:A:C5   | 3.05                     | 0.45              |
| 8:AB:1773:A:C8    | 8:AB:1829:A:C8   | 3.05                     | 0.45              |
| 8:AB:1844:C:C5'   | 9:AC:251:THR:HB  | 2.46                     | 0.45              |
| 8:AB:1942:C:C5    | 8:AB:1943:U:C6   | 3.05                     | 0.45              |
| 8:AB:2051:A:N6    | 8:AB:2614:A:N7   | 2.65                     | 0.45              |
| 8:AB:2378:A:O4'   | 21:AO:92:PHE:CE1 | 2.70                     | 0.45              |
| 8:AB:2453:A:H2'   | 8:AB:2454:G:O5'  | 2.17                     | 0.45              |
| 8:AB:2563:U:O2    | 8:AB:2566:A:C5   | 2.69                     | 0.45              |
| 8:AB:2717:C:C2'   | 8:AB:2718:G:O5'  | 2.65                     | 0.45              |
| 9:AC:38:LYS:HB2   | 9:AC:38:LYS:HE2  | 1.76                     | 0.45              |
| 9:AC:61:TYR:HD2   | 9:AC:84:PRO:CD   | 2.30                     | 0.45              |
| 9:AC:179:GLU:CB   | 9:AC:266:ILE:HA  | 2.46                     | 0.45              |
| 10:AD:4:LEU:HB2   | 10:AD:201:LEU:O  | 2.17                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AD:122:VAL:HG11 | 10:AD:141:ARG:NH1  | 2.32                     | 0.45              |
| 10:AD:148:GLN:HB3  | 10:AD:151:THR:OG1  | 2.17                     | 0.45              |
| 10:AD:149:ASN:O    | 10:AD:150:GLN:CG   | 2.54                     | 0.45              |
| 12:AF:2:LYS:HA     | 12:AF:2:LYS:CE     | 2.38                     | 0.45              |
| 17:AK:53:LYS:HD3   | 17:AK:56:ASP:OD2   | 2.17                     | 0.45              |
| 18:AL:32:GLY:C     | 18:AL:34:GLY:H     | 2.20                     | 0.45              |
| 19:AM:14:LYS:HE3   | 19:AM:14:LYS:HB3   | 1.62                     | 0.45              |
| 19:AM:33:LEU:O     | 19:AM:99:GLY:HA2   | 2.17                     | 0.45              |
| 20:AN:65:LEU:CB    | 20:AN:69:ARG:NH1   | 2.71                     | 0.45              |
| 21:AO:85:LYS:HD2   | 21:AO:85:LYS:N     | 2.27                     | 0.45              |
| 22:AP:92:ARG:HE    | 22:AP:111:GLU:N    | 2.15                     | 0.45              |
| 24:AR:16:GLU:HG2   | 24:AR:17:GLY:H     | 1.81                     | 0.45              |
| 24:AR:66:HIS:N     | 24:AR:98:ILE:HD12  | 2.27                     | 0.45              |
| 24:AR:99:THR:O     | 24:AR:99:THR:OG1   | 2.34                     | 0.45              |
| 25:AS:73:LYS:HB2   | 25:AS:106:VAL:HG21 | 1.98                     | 0.45              |
| 27:AU:29:SER:C     | 27:AU:31:GLY:H     | 2.20                     | 0.45              |
| 30:AX:12:GLU:HB3   | 30:AX:14:LEU:HD11  | 1.98                     | 0.45              |
| 30:AX:22:LEU:HD23  | 30:AX:25:GLN:HB3   | 1.98                     | 0.45              |
| 32:AZ:6:HIS:O      | 32:AZ:7:PRO:O      | 2.35                     | 0.45              |
| 33:BA:160:A:C5     | 33:BA:346:G:O6     | 2.70                     | 0.45              |
| 33:BA:369:G:OP2    | 33:BA:388:G:C2     | 2.69                     | 0.45              |
| 33:BA:541:G:C2     | 33:BA:542:G:C8     | 3.04                     | 0.45              |
| 33:BA:580:C:C2'    | 33:BA:581:G:O5'    | 2.65                     | 0.45              |
| 33:BA:622:A:N7     | 33:BA:623:C:C2     | 2.85                     | 0.45              |
| 33:BA:665:A:O2'    | 33:BA:666:G:H5''   | 2.17                     | 0.45              |
| 33:BA:670:G:H1     | 33:BA:736:C:N4     | 2.14                     | 0.45              |
| 33:BA:707:U:H2'    | 33:BA:708:C:C6     | 2.52                     | 0.45              |
| 33:BA:718:A:C8     | 33:BA:719:C:C5     | 3.05                     | 0.45              |
| 33:BA:823:C:O2'    | 33:BA:824:G:H5'    | 2.16                     | 0.45              |
| 33:BA:864:A:C2     | 33:BA:917:G:N3     | 2.74                     | 0.45              |
| 33:BA:917:G:H2'    | 33:BA:918:A:C8     | 2.52                     | 0.45              |
| 33:BA:1167:A:O2'   | 33:BA:1168:U:H5'   | 2.16                     | 0.45              |
| 33:BA:1219:A:H2    | 51:BS:51:HIS:ND1   | 2.15                     | 0.45              |
| 33:BA:1234:C:H6    | 33:BA:1234:C:C5'   | 2.30                     | 0.45              |
| 33:BA:1378:C:H3'   | 33:BA:1379:G:C5'   | 2.47                     | 0.45              |
| 33:BA:1400:C:H6    | 33:BA:1400:C:O5'   | 2.00                     | 0.45              |
| 33:BA:1421:G:C6    | 33:BA:1480:A:N1    | 2.85                     | 0.45              |
| 34:BB:53:LEU:HD21  | 34:BB:212:TYR:CE2  | 2.52                     | 0.45              |
| 35:BC:184:ASN:ND2  | 35:BC:185:THR:H    | 2.15                     | 0.45              |
| 36:BD:190:LEU:HD12 | 36:BD:190:LEU:HA   | 1.83                     | 0.45              |
| 37:BE:13:LYS:HG2   | 37:BE:14:LEU:N     | 2.31                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:BF:48:ALA:CB   | 50:BR:66:LEU:O    | 2.63                     | 0.45              |
| 41:BI:59:LYS:HD2  | 41:BI:60:LEU:CD2  | 2.47                     | 0.45              |
| 43:BK:28:ASN:HD22 | 43:BK:29:THR:N    | 2.12                     | 0.45              |
| 43:BK:88:PRO:HG3  | 53:BU:28:LEU:HD11 | 1.98                     | 0.45              |
| 48:BP:1:MET:O     | 48:BP:24:SER:HB2  | 2.17                     | 0.45              |
| 48:BP:5:ARG:HB2   | 48:BP:6:LEU:H     | 1.57                     | 0.45              |
| 48:BP:16:PHE:HD1  | 48:BP:16:PHE:O    | 2.00                     | 0.45              |
| 53:BU:36:PHE:HB3  | 53:BU:40:PRO:CD   | 2.19                     | 0.45              |
| 3:C2:12:ARG:HG2   | 8:CB:686:U:H3     | 1.82                     | 0.45              |
| 4:C3:12:ARG:HG2   | 4:C3:24:LYS:H     | 1.82                     | 0.45              |
| 4:C3:12:ARG:NH2   | 4:C3:23:HIS:CE1   | 2.85                     | 0.45              |
| 7:CA:53:A:C8      | 7:CA:53:A:C3'     | 2.99                     | 0.45              |
| 8:CB:55:G:H5''    | 8:CB:55:G:C8      | 2.52                     | 0.45              |
| 8:CB:64:A:C6      | 8:CB:91:A:N6      | 2.84                     | 0.45              |
| 8:CB:104:A:C2'    | 8:CB:105:C:C6     | 2.96                     | 0.45              |
| 8:CB:289:G:C2     | 8:CB:290:U:H1'    | 2.52                     | 0.45              |
| 8:CB:324:A:H2'    | 8:CB:325:G:O4'    | 2.17                     | 0.45              |
| 8:CB:362:A:O2'    | 8:CB:363:G:H5'    | 2.16                     | 0.45              |
| 8:CB:381:G:H2'    | 8:CB:382:A:C5'    | 2.46                     | 0.45              |
| 8:CB:383:C:N4     | 8:CB:385:C:H2'    | 2.32                     | 0.45              |
| 8:CB:429:A:C2     | 8:CB:430:A:C6     | 3.05                     | 0.45              |
| 8:CB:578:G:H1'    | 23:CQ:32:ARG:HH22 | 1.82                     | 0.45              |
| 8:CB:582:A:C5     | 8:CB:583:G:N7     | 2.85                     | 0.45              |
| 8:CB:601:C:H2'    | 8:CB:605:G:H5''   | 1.99                     | 0.45              |
| 8:CB:919:U:C5     | 8:CB:920:A:N7     | 2.85                     | 0.45              |
| 8:CB:968:C:C6     | 8:CB:968:C:C3'    | 2.99                     | 0.45              |
| 8:CB:993:G:O4'    | 24:CR:91:GLN:NE2  | 2.49                     | 0.45              |
| 8:CB:1067:A:N1    | 8:CB:1068:G:C2    | 2.85                     | 0.45              |
| 8:CB:1217:U:O2    | 8:CB:1217:U:C2'   | 2.65                     | 0.45              |
| 8:CB:1268:A:C5    | 8:CB:1269:A:C4    | 3.05                     | 0.45              |
| 8:CB:1362:C:C2    | 8:CB:1363:C:C5    | 3.05                     | 0.45              |
| 8:CB:1392:A:C6    | 8:CB:1393:A:N6    | 2.85                     | 0.45              |
| 8:CB:1401:G:H2'   | 8:CB:1402:U:C6    | 2.52                     | 0.45              |
| 8:CB:1409:U:C2    | 8:CB:1410:G:C8    | 3.05                     | 0.45              |
| 8:CB:1470:A:N6    | 8:CB:1521:G:H1'   | 2.32                     | 0.45              |
| 8:CB:1566:A:C6    | 9:CC:213:ARG:NH1  | 2.85                     | 0.45              |
| 8:CB:1655:A:C8    | 8:CB:1656:C:C6    | 3.05                     | 0.45              |
| 8:CB:1713:A:H8    | 8:CB:1713:A:O5'   | 2.00                     | 0.45              |
| 8:CB:1714:U:H2'   | 8:CB:1714:U:O2    | 2.17                     | 0.45              |
| 8:CB:1829:A:N7    | 8:CB:1830:C:C6    | 2.85                     | 0.45              |
| 8:CB:1873:G:C5    | 8:CB:1874:C:C5    | 3.04                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2088:A:H62   | 8:CB:2089:C:N4     | 2.13                     | 0.45              |
| 8:CB:2270:A:C2'   | 8:CB:2271:G:H5'    | 2.47                     | 0.45              |
| 8:CB:2573:C:OP1   | 8:CB:2574:G:OP1    | 2.35                     | 0.45              |
| 8:CB:2614:A:N3    | 8:CB:2615:U:O4     | 2.50                     | 0.45              |
| 8:CB:2684:U:H3'   | 8:CB:2684:U:C6     | 2.51                     | 0.45              |
| 8:CB:2691:C:C2    | 8:CB:2872:A:N1     | 2.85                     | 0.45              |
| 8:CB:2703:C:H2'   | 8:CB:2704:C:C6     | 2.52                     | 0.45              |
| 8:CB:2704:C:H2'   | 8:CB:2705:A:O4'    | 2.17                     | 0.45              |
| 8:CB:2817:U:H2'   | 8:CB:2818:U:O5'    | 2.17                     | 0.45              |
| 8:CB:2886:A:H2    | 8:CB:2887:A:C5     | 2.35                     | 0.45              |
| 55:CB:5468:HOH:O  | 9:CC:224:MET:CB    | 2.62                     | 0.45              |
| 10:CD:37:VAL:HG13 | 10:CD:42:ASN:ND2   | 2.32                     | 0.45              |
| 10:CD:124:ARG:O   | 10:CD:160:LYS:CD   | 2.56                     | 0.45              |
| 10:CD:124:ARG:HB3 | 10:CD:160:LYS:CD   | 2.47                     | 0.45              |
| 10:CD:152:PRO:O   | 10:CD:153:GLY:O    | 2.34                     | 0.45              |
| 11:CE:6:LYS:HE2   | 11:CE:119:ILE:HG22 | 1.98                     | 0.45              |
| 11:CE:128:ALA:HA  | 11:CE:129:PRO:HD2  | 1.87                     | 0.45              |
| 12:CF:37:MET:HE2  | 12:CF:148:VAL:HG12 | 1.99                     | 0.45              |
| 13:CG:41:GLU:OE2  | 13:CG:54:ARG:NE    | 2.50                     | 0.45              |
| 14:CH:54:LEU:O    | 14:CH:58:LEU:HB2   | 2.16                     | 0.45              |
| 14:CH:90:LEU:HD12 | 14:CH:91:PHE:N     | 2.32                     | 0.45              |
| 16:CJ:116:ARG:C   | 16:CJ:118:MET:H    | 2.20                     | 0.45              |
| 16:CJ:135:GLN:O   | 16:CJ:135:GLN:CD   | 2.55                     | 0.45              |
| 18:CL:101:ILE:H   | 18:CL:101:ILE:HG12 | 1.54                     | 0.45              |
| 19:CM:5:LYS:CB    | 19:CM:69:PRO:HB2   | 2.47                     | 0.45              |
| 19:CM:43:ALA:HB2  | 19:CM:91:TYR:HB2   | 1.98                     | 0.45              |
| 19:CM:47:GLU:O    | 19:CM:47:GLU:HG3   | 2.17                     | 0.45              |
| 23:CQ:90:ASP:O    | 24:CR:53:PHE:CE1   | 2.70                     | 0.45              |
| 24:CR:6:GLN:O     | 24:CR:7:SER:CB     | 2.65                     | 0.45              |
| 24:CR:60:LYS:O    | 24:CR:62:GLU:N     | 2.50                     | 0.45              |
| 25:CS:9:HIS:H     | 25:CS:102:HIS:HD2  | 1.65                     | 0.45              |
| 27:CU:39:ASN:HA   | 27:CU:59:GLU:HG3   | 1.99                     | 0.45              |
| 27:CU:95:PHE:HD2  | 27:CU:100:GLU:O    | 2.00                     | 0.45              |
| 33:DA:57:G:C6     | 33:DA:356:A:N6     | 2.85                     | 0.45              |
| 33:DA:64:G:C8     | 33:DA:99:C:C5      | 3.05                     | 0.45              |
| 33:DA:158:G:H22   | 33:DA:162:A:N6     | 2.15                     | 0.45              |
| 33:DA:176:C:H2'   | 33:DA:177:G:N3     | 2.32                     | 0.45              |
| 33:DA:266:G:H22   | 33:DA:270:A:N6     | 2.14                     | 0.45              |
| 33:DA:395:C:N4    | 33:DA:396:C:N4     | 2.52                     | 0.45              |
| 33:DA:592:G:N2    | 33:DA:648:A:N3     | 2.65                     | 0.45              |
| 33:DA:659:U:C2    | 33:DA:660:C:C5     | 3.05                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:712:A:C2    | 33:DA:713:G:N3     | 2.85                     | 0.45              |
| 33:DA:726:C:H2'   | 33:DA:726:C:O2     | 2.17                     | 0.45              |
| 33:DA:728:A:H3'   | 33:DA:729:A:N7     | 2.32                     | 0.45              |
| 33:DA:778:G:C8    | 33:DA:778:G:H3'    | 2.52                     | 0.45              |
| 33:DA:794:A:C5    | 33:DA:795:C:C4     | 3.05                     | 0.45              |
| 33:DA:814:A:H5''  | 33:DA:1511:G:H5'   | 1.98                     | 0.45              |
| 33:DA:841:C:H3'   | 33:DA:843:U:OP2    | 2.16                     | 0.45              |
| 33:DA:872:A:C8    | 33:DA:874:G:C8     | 3.04                     | 0.45              |
| 33:DA:875:U:O2'   | 40:DH:15:ASN:ND2   | 2.48                     | 0.45              |
| 33:DA:927:G:N2    | 33:DA:1391:U:H1'   | 2.32                     | 0.45              |
| 33:DA:967:C:C4'   | 41:DI:129:ARG:HG3  | 2.47                     | 0.45              |
| 33:DA:986:U:O5'   | 33:DA:986:U:H6     | 2.00                     | 0.45              |
| 33:DA:990:C:N3    | 33:DA:1216:A:C2    | 2.85                     | 0.45              |
| 33:DA:1072:G:C6   | 33:DA:1104:G:C2    | 3.05                     | 0.45              |
| 33:DA:1183:U:H3'  | 33:DA:1184:G:H5'   | 1.98                     | 0.45              |
| 33:DA:1205:U:O2'  | 33:DA:1206:G:H5''  | 2.16                     | 0.45              |
| 33:DA:1246:A:C2   | 33:DA:1292:G:C6    | 3.05                     | 0.45              |
| 33:DA:1341:U:C2'  | 33:DA:1342:C:O5'   | 2.65                     | 0.45              |
| 33:DA:1525:G:H5'' | 55:DA:5292:HOH:O   | 2.17                     | 0.45              |
| 34:DB:139:GLU:HG3 | 34:DB:143:LEU:HD12 | 1.98                     | 0.45              |
| 36:DD:7:LYS:HB2   | 36:DD:7:LYS:HE2    | 1.83                     | 0.45              |
| 42:DJ:54:SER:HB3  | 42:DJ:58:ASN:HD22  | 1.81                     | 0.45              |
| 44:DL:113:ARG:NH2 | 44:DL:120:ARG:HA   | 2.30                     | 0.45              |
| 45:DM:19:THR:HG23 | 45:DM:29:SER:CB    | 2.46                     | 0.45              |
| 48:DP:42:ILE:HD13 | 48:DP:42:ILE:HA    | 1.87                     | 0.45              |
| 1:A0:41:HIS:ND1   | 1:A0:48:TYR:CE1    | 2.86                     | 0.44              |
| 8:AB:121:G:O5'    | 8:AB:121:G:C8      | 2.69                     | 0.44              |
| 8:AB:136:G:H8     | 8:AB:136:G:O5'     | 2.00                     | 0.44              |
| 8:AB:137:U:O2     | 26:AT:4:GLU:OE1    | 2.34                     | 0.44              |
| 8:AB:299:A:C8     | 8:AB:322:A:N1      | 2.85                     | 0.44              |
| 8:AB:466:A:H8     | 8:AB:466:A:C5'     | 2.30                     | 0.44              |
| 8:AB:564:C:H1'    | 23:AQ:36:GLN:OE1   | 2.18                     | 0.44              |
| 8:AB:571:U:C4     | 8:AB:575:A:N7      | 2.85                     | 0.44              |
| 8:AB:575:A:H2'    | 8:AB:576:U:H5''    | 1.98                     | 0.44              |
| 8:AB:690:G:C4     | 8:AB:691:C:C6      | 3.04                     | 0.44              |
| 8:AB:779:U:N3     | 8:AB:780:G:C5      | 2.86                     | 0.44              |
| 8:AB:1070:A:C8    | 8:AB:1096:A:O2'    | 2.59                     | 0.44              |
| 8:AB:1082:U:O4    | 8:AB:1083:U:C4     | 2.70                     | 0.44              |
| 8:AB:1202:G:O6    | 8:AB:1203:U:O2     | 2.34                     | 0.44              |
| 8:AB:1238:G:N3    | 8:AB:1239:G:C8     | 2.85                     | 0.44              |
| 8:AB:1418:G:H2'   | 8:AB:1579:A:N6     | 2.32                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:1505:A:C5     | 8:AB:1506:U:C4    | 3.05                     | 0.44              |
| 8:AB:1524:G:C5     | 8:AB:1525:A:C8    | 3.05                     | 0.44              |
| 8:AB:1606:C:C6     | 8:AB:1606:C:C3'   | 3.01                     | 0.44              |
| 8:AB:1820:U:O2'    | 9:AC:155:ARG:HD2  | 2.17                     | 0.44              |
| 8:AB:1846:G:N2     | 8:AB:1895:C:C2    | 2.85                     | 0.44              |
| 8:AB:1959:G:C2     | 8:AB:1960:A:C4    | 3.05                     | 0.44              |
| 8:AB:2024:G:H4'    | 10:AD:154:LYS:CE  | 2.47                     | 0.44              |
| 8:AB:2179:C:H2'    | 8:AB:2180:U:C6    | 2.45                     | 0.44              |
| 8:AB:2280:G:C2     | 8:AB:2281:A:C8    | 3.04                     | 0.44              |
| 8:AB:2486:C:C2'    | 8:AB:2487:G:O5'   | 2.65                     | 0.44              |
| 8:AB:2603:G:C5     | 8:AB:2604:U:C5    | 3.06                     | 0.44              |
| 8:AB:2615:U:O2     | 8:AB:2615:U:H2'   | 2.15                     | 0.44              |
| 8:AB:2675:A:C2'    | 8:AB:2676:C:H5'   | 2.47                     | 0.44              |
| 9:AC:83:ASP:HA     | 9:AC:84:PRO:HD3   | 1.78                     | 0.44              |
| 9:AC:117:SER:HB3   | 9:AC:127:ASN:ND2  | 2.32                     | 0.44              |
| 9:AC:174:ARG:O     | 9:AC:174:ARG:HG3  | 2.14                     | 0.44              |
| 10:AD:33:ARG:NH2   | 10:AD:87:GLY:HA3  | 2.29                     | 0.44              |
| 11:AE:139:LYS:HZ3  | 11:AE:142:ALA:HA  | 1.82                     | 0.44              |
| 12:AF:6:TYR:HD2    | 12:AF:6:TYR:N     | 2.13                     | 0.44              |
| 12:AF:110:ILE:HG22 | 12:AF:112:ASP:H   | 1.82                     | 0.44              |
| 12:AF:135:ILE:HG13 | 12:AF:140:ILE:CD1 | 2.39                     | 0.44              |
| 15:AI:3:LYS:HE3    | 15:AI:5:GLN:CB    | 2.44                     | 0.44              |
| 16:AJ:128:ASN:HD22 | 16:AJ:128:ASN:N   | 2.12                     | 0.44              |
| 19:AM:131:VAL:O    | 19:AM:131:VAL:CG2 | 2.65                     | 0.44              |
| 20:AN:33:ILE:HG23  | 20:AN:113:ILE:O   | 2.17                     | 0.44              |
| 24:AR:1:MET:C      | 24:AR:2:TYR:HD1   | 2.20                     | 0.44              |
| 24:AR:35:PHE:C     | 24:AR:64:VAL:HG13 | 2.36                     | 0.44              |
| 24:AR:69:GLY:CA    | 24:AR:96:VAL:HG12 | 2.47                     | 0.44              |
| 27:AU:10:VAL:HG12  | 27:AU:69:VAL:O    | 2.16                     | 0.44              |
| 27:AU:35:VAL:HG12  | 27:AU:36:GLU:H    | 1.82                     | 0.44              |
| 27:AU:40:LEU:H     | 27:AU:42:LYS:HZ1  | 1.60                     | 0.44              |
| 30:AX:6:LEU:HD13   | 30:AX:9:LYS:HD3   | 1.99                     | 0.44              |
| 30:AX:7:ARG:HA     | 30:AX:7:ARG:HH11  | 1.82                     | 0.44              |
| 31:AY:40:THR:CG2   | 31:AY:43:ILE:HG22 | 2.46                     | 0.44              |
| 32:AZ:48:GLN:CD    | 32:AZ:49:ARG:O    | 2.56                     | 0.44              |
| 33:BA:39:G:N2      | 33:BA:40:C:H1'    | 2.32                     | 0.44              |
| 33:BA:46:G:H8      | 33:BA:46:G:O5'    | 2.00                     | 0.44              |
| 33:BA:219:U:N3     | 33:BA:220:G:N7    | 2.65                     | 0.44              |
| 33:BA:318:G:H2'    | 33:BA:319:G:O4'   | 2.17                     | 0.44              |
| 33:BA:330:C:H6     | 33:BA:330:C:H3'   | 1.81                     | 0.44              |
| 33:BA:335:C:H2'    | 33:BA:336:A:H8    | 1.82                     | 0.44              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:BA:344:A:H3'  | 33:BA:345:C:C5'    | 2.47                     | 0.44              |
| 33:BA:377:G:N2   | 33:BA:378:G:C5     | 2.85                     | 0.44              |
| 33:BA:433:G:C2   | 33:BA:434:U:C2     | 3.05                     | 0.44              |
| 33:BA:541:G:N1   | 33:BA:542:G:C5     | 2.86                     | 0.44              |
| 33:BA:548:G:C6   | 33:BA:549:C:N4     | 2.85                     | 0.44              |
| 33:BA:602:A:H2   | 33:BA:637:C:C4     | 2.35                     | 0.44              |
| 33:BA:673:A:H4'  | 38:BF:86:ARG:CD    | 2.47                     | 0.44              |
| 33:BA:689:C:C6   | 33:BA:689:C:O5'    | 2.70                     | 0.44              |
| 33:BA:711:G:N1   | 33:BA:712:A:C6     | 2.86                     | 0.44              |
| 33:BA:764:C:O2'  | 33:BA:765:G:C5'    | 2.64                     | 0.44              |
| 33:BA:778:G:C2'  | 33:BA:779:C:O5'    | 2.64                     | 0.44              |
| 33:BA:1006:G:C2  | 33:BA:1007:U:O2    | 2.70                     | 0.44              |
| 33:BA:1091:U:O2  | 33:BA:1093:A:C8    | 2.71                     | 0.44              |
| 33:BA:1098:C:O2  | 33:BA:1098:C:H2'   | 2.17                     | 0.44              |
| 33:BA:1202:U:C4  | 33:BA:1203:C:C2    | 3.05                     | 0.44              |
| 33:BA:1370:G:O5' | 41:BI:110:VAL:HG21 | 2.16                     | 0.44              |
| 33:BA:1375:A:H4' | 39:BG:28:ILE:HG12  | 1.99                     | 0.44              |
| 33:BA:1471:U:H3' | 33:BA:1472:U:C5'   | 2.34                     | 0.44              |
| 34:BB:67:LEU:HA  | 34:BB:89:PHE:O     | 2.16                     | 0.44              |
| 35:BC:34:SER:C   | 35:BC:36:PHE:H     | 2.21                     | 0.44              |
| 36:BD:94:GLU:CD  | 36:BD:103:ARG:HH22 | 2.20                     | 0.44              |
| 36:BD:131:ILE:O  | 36:BD:134:TYR:HB2  | 2.17                     | 0.44              |
| 38:BF:77:THR:O   | 38:BF:81:ASN:N     | 2.50                     | 0.44              |
| 39:BG:72:VAL:HA  | 39:BG:89:GLU:HA    | 1.99                     | 0.44              |
| 42:BJ:14:ASP:HA  | 42:BJ:70:HIS:CD2   | 2.53                     | 0.44              |
| 42:BJ:78:GLU:HA  | 42:BJ:79:PRO:HD2   | 1.78                     | 0.44              |
| 44:BL:93:ARG:O   | 44:BL:94:TYR:CG    | 2.70                     | 0.44              |
| 46:BN:71:GLY:HA3 | 46:BN:80:ARG:HG3   | 1.98                     | 0.44              |
| 47:BO:14:PHE:CE1 | 47:BO:83:ARG:NH2   | 2.85                     | 0.44              |
| 47:BO:73:ASP:OD2 | 47:BO:76:ARG:HG3   | 2.16                     | 0.44              |
| 48:BP:46:LYS:O   | 48:BP:47:GLU:CB    | 2.64                     | 0.44              |
| 48:BP:76:LYS:HD2 | 48:BP:80:LYS:CD    | 2.32                     | 0.44              |
| 2:C1:34:GLU:CB   | 2:C1:50:GLU:OE1    | 2.65                     | 0.44              |
| 7:CA:13:G:C8     | 7:CA:13:G:C3'      | 3.00                     | 0.44              |
| 7:CA:14:U:H5''   | 7:CA:71:C:O4'      | 2.17                     | 0.44              |
| 7:CA:54:G:C8     | 7:CA:54:G:H3'      | 2.53                     | 0.44              |
| 8:CB:45:G:H4'    | 8:CB:46:G:O4'      | 2.17                     | 0.44              |
| 8:CB:210:C:HO2'  | 8:CB:211:C:H5'     | 1.82                     | 0.44              |
| 8:CB:223:A:C8    | 8:CB:422:A:C1'     | 3.00                     | 0.44              |
| 8:CB:282:A:H2    | 8:CB:359:G:C4      | 2.35                     | 0.44              |
| 8:CB:306:U:O4    | 8:CB:307:G:C6      | 2.70                     | 0.44              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 8:CB:543:G:H8     | 8:CB:543:G:C5'   | 2.30                     | 0.44              |
| 8:CB:544:C:O3'    | 8:CB:544:C:O5'   | 2.35                     | 0.44              |
| 8:CB:567:U:N3     | 8:CB:568:U:C6    | 2.82                     | 0.44              |
| 8:CB:669:G:H3'    | 8:CB:670:A:N7    | 2.33                     | 0.44              |
| 8:CB:690:G:C4     | 8:CB:691:C:C6    | 3.05                     | 0.44              |
| 8:CB:986:C:H2'    | 8:CB:986:C:O2    | 2.17                     | 0.44              |
| 8:CB:1331:G:C6    | 8:CB:1333:G:C8   | 3.06                     | 0.44              |
| 8:CB:1359:A:C2'   | 8:CB:1360:G:H5'  | 2.47                     | 0.44              |
| 8:CB:1452:G:N3    | 8:CB:2702:G:C5   | 2.85                     | 0.44              |
| 8:CB:1478:G:H8    | 8:CB:1478:G:C5'  | 2.30                     | 0.44              |
| 8:CB:1544:A:C6    | 8:CB:1545:A:C6   | 3.05                     | 0.44              |
| 8:CB:1625:C:H2'   | 8:CB:1626:A:O4'  | 2.17                     | 0.44              |
| 8:CB:1817:G:P     | 9:CC:62:ARG:HH22 | 2.40                     | 0.44              |
| 8:CB:1942:C:C5    | 8:CB:1943:U:C6   | 3.05                     | 0.44              |
| 8:CB:2023:C:O2'   | 8:CB:2024:G:H5'  | 2.16                     | 0.44              |
| 8:CB:2041:U:H2'   | 8:CB:2042:A:C8   | 2.52                     | 0.44              |
| 8:CB:2444:G:OP1   | 11:CE:62:GLN:NE2 | 2.36                     | 0.44              |
| 8:CB:2464:G:C5    | 8:CB:2487:G:N1   | 2.84                     | 0.44              |
| 8:CB:2542:A:O5'   | 8:CB:2542:A:H2'  | 2.16                     | 0.44              |
| 8:CB:2543:G:N1    | 8:CB:2765:A:C5   | 2.85                     | 0.44              |
| 8:CB:2729:G:C5    | 8:CB:2730:C:C5   | 3.05                     | 0.44              |
| 8:CB:2734:A:C8    | 8:CB:2734:A:C3'  | 3.00                     | 0.44              |
| 8:CB:2765:A:C2'   | 8:CB:2766:A:H5'  | 2.47                     | 0.44              |
| 8:CB:2791:G:H5''  | 8:CB:2791:G:C8   | 2.46                     | 0.44              |
| 8:CB:2866:U:H4'   | 8:CB:2867:G:C4'  | 2.42                     | 0.44              |
| 9:CC:144:GLU:CG   | 9:CC:150:GLY:HA2 | 2.26                     | 0.44              |
| 9:CC:259:ASN:C    | 9:CC:261:ARG:HE  | 2.21                     | 0.44              |
| 10:CD:154:LYS:HE2 | 10:CD:154:LYS:CA | 2.46                     | 0.44              |
| 10:CD:157:LYS:HZ1 | 10:CD:157:LYS:C  | 2.19                     | 0.44              |
| 12:CF:6:TYR:HD2   | 12:CF:6:TYR:N    | 2.13                     | 0.44              |
| 12:CF:33:ILE:HG13 | 12:CF:34:THR:N   | 2.30                     | 0.44              |
| 12:CF:93:GLU:OE1  | 12:CF:94:ARG:HB2 | 2.17                     | 0.44              |
| 13:CG:97:VAL:HG11 | 13:CG:123:GLU:HA | 1.99                     | 0.44              |
| 15:CI:102:ARG:HB2 | 15:CI:141:ASP:HA | 1.98                     | 0.44              |
| 16:CJ:131:ASN:C   | 16:CJ:133:ALA:N  | 2.70                     | 0.44              |
| 17:CK:49:ARG:HD3  | 17:CK:49:ARG:N   | 2.31                     | 0.44              |
| 19:CM:57:VAL:O    | 19:CM:58:LYS:O   | 2.34                     | 0.44              |
| 19:CM:88:ASN:O    | 19:CM:90:GLU:N   | 2.48                     | 0.44              |
| 21:CO:9:ARG:HE    | 21:CO:95:SER:HB3 | 1.81                     | 0.44              |
| 21:CO:9:ARG:HH21  | 21:CO:95:SER:HB3 | 1.82                     | 0.44              |
| 21:CO:19:GLN:N    | 21:CO:20:GLU:OE2 | 2.50                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:CO:27:VAL:HG23 | 21:CO:28:VAL:N    | 2.29                     | 0.44              |
| 21:CO:74:VAL:HG23 | 21:CO:106:LEU:CD1 | 2.40                     | 0.44              |
| 23:CQ:86:SER:OG   | 23:CQ:87:VAL:N    | 2.50                     | 0.44              |
| 26:CT:27:SER:C    | 26:CT:29:THR:H    | 2.20                     | 0.44              |
| 27:CU:40:LEU:HG   | 27:CU:58:VAL:O    | 2.17                     | 0.44              |
| 28:CV:65:VAL:C    | 28:CV:67:GLY:N    | 2.70                     | 0.44              |
| 30:CX:19:LEU:O    | 30:CX:20:ASN:HB2  | 2.17                     | 0.44              |
| 33:DA:19:A:N3     | 33:DA:572:A:C2    | 2.84                     | 0.44              |
| 33:DA:33:A:O5'    | 33:DA:33:A:C8     | 2.62                     | 0.44              |
| 33:DA:173:U:H5'   | 33:DA:197:A:O4'   | 2.17                     | 0.44              |
| 33:DA:199:A:H2    | 33:DA:219:U:C2    | 2.35                     | 0.44              |
| 33:DA:275:G:N3    | 33:DA:276:G:C8    | 2.85                     | 0.44              |
| 33:DA:404:G:H4'   | 33:DA:439:U:C2    | 2.52                     | 0.44              |
| 33:DA:518:C:H6    | 33:DA:529:G:C4    | 2.35                     | 0.44              |
| 33:DA:577:G:O2'   | 33:DA:578:C:C5'   | 2.58                     | 0.44              |
| 33:DA:639:G:C5    | 33:DA:640:A:C8    | 3.05                     | 0.44              |
| 33:DA:727:G:C5'   | 33:DA:741:G:N2    | 2.79                     | 0.44              |
| 33:DA:747:A:H2'   | 33:DA:748:G:O4'   | 2.17                     | 0.44              |
| 33:DA:828:U:N3    | 33:DA:859:G:H1'   | 2.22                     | 0.44              |
| 33:DA:979:C:N4    | 33:DA:980:C:C2    | 2.85                     | 0.44              |
| 33:DA:1120:C:H42  | 33:DA:1153:G:H1   | 1.65                     | 0.44              |
| 33:DA:1165:U:H3'  | 33:DA:1166:G:C8   | 2.52                     | 0.44              |
| 33:DA:1221:G:C2'  | 33:DA:1222:G:H5'  | 2.47                     | 0.44              |
| 33:DA:1423:G:C5   | 33:DA:1424:U:C5   | 3.03                     | 0.44              |
| 33:DA:1468:A:H2'  | 33:DA:1469:C:C6   | 2.49                     | 0.44              |
| 33:DA:1477:U:HO2' | 33:DA:1478:U:H5'  | 1.81                     | 0.44              |
| 33:DA:1485:U:H3'  | 33:DA:1485:U:H6   | 1.82                     | 0.44              |
| 34:DB:134:LEU:C   | 34:DB:136:ARG:H   | 2.20                     | 0.44              |
| 36:DD:63:ILE:HG23 | 36:DD:64:TYR:CE1  | 2.52                     | 0.44              |
| 37:DE:85:LYS:HG2  | 37:DE:94:PHE:HD2  | 1.82                     | 0.44              |
| 38:DF:3:HIS:HB2   | 38:DF:92:THR:CA   | 2.29                     | 0.44              |
| 40:DH:62:LEU:HB3  | 40:DH:63:LYS:H    | 1.52                     | 0.44              |
| 40:DH:88:LYS:HB2  | 40:DH:120:LEU:O   | 2.16                     | 0.44              |
| 41:DI:10:ARG:HG2  | 41:DI:15:ALA:HA   | 1.98                     | 0.44              |
| 41:DI:51:LEU:HD21 | 41:DI:82:ILE:HG21 | 2.00                     | 0.44              |
| 41:DI:114:LYS:HZ3 | 41:DI:121:ARG:HG2 | 1.81                     | 0.44              |
| 41:DI:126:PHE:CD1 | 41:DI:127:SER:N   | 2.84                     | 0.44              |
| 44:DL:33:CYS:CA   | 44:DL:54:VAL:HG12 | 2.45                     | 0.44              |
| 45:DM:18:LEU:HD12 | 45:DM:33:LEU:HB2  | 1.98                     | 0.44              |
| 45:DM:79:LEU:HD13 | 45:DM:87:GLY:HA2  | 1.98                     | 0.44              |
| 47:DO:15:GLY:O    | 47:DO:16:ARG:C    | 2.55                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 47:DO:42:PHE:CE1 | 47:DO:55:LEU:HD22 | 2.52                     | 0.44              |
| 3:A2:24:THR:HG22 | 3:A2:25:LYS:N     | 2.32                     | 0.44              |
| 4:A3:39:ARG:HD2  | 8:AB:2363:G:OP2   | 2.17                     | 0.44              |
| 7:AA:104:A:C2    | 7:AA:105:G:C1'    | 2.94                     | 0.44              |
| 8:AB:200:U:O4    | 8:AB:248:G:C2     | 2.70                     | 0.44              |
| 8:AB:420:C:C2    | 8:AB:421:C:C5     | 3.05                     | 0.44              |
| 8:AB:466:A:H8    | 8:AB:466:A:O5'    | 2.00                     | 0.44              |
| 8:AB:470:A:N1    | 8:AB:471:A:C2     | 2.85                     | 0.44              |
| 8:AB:563:A:C2    | 8:AB:2018:G:C4    | 3.04                     | 0.44              |
| 8:AB:707:G:H2'   | 8:AB:707:G:N3     | 2.32                     | 0.44              |
| 8:AB:737:C:O2    | 8:AB:738:G:C8     | 2.71                     | 0.44              |
| 8:AB:741:U:C4    | 8:AB:757:G:N1     | 2.85                     | 0.44              |
| 8:AB:777:G:N3    | 8:AB:778:G:C8     | 2.85                     | 0.44              |
| 8:AB:877:A:C2    | 8:AB:899:A:N7     | 2.86                     | 0.44              |
| 8:AB:973:A:C8    | 8:AB:1188:U:C2    | 3.05                     | 0.44              |
| 8:AB:997:G:N1    | 8:AB:1159:U:C2    | 2.85                     | 0.44              |
| 8:AB:1034:G:C2   | 8:AB:1122:G:C5    | 3.05                     | 0.44              |
| 8:AB:1203:U:H3   | 8:AB:1243:C:N4    | 2.14                     | 0.44              |
| 8:AB:1230:A:C4   | 8:AB:1231:U:C5    | 3.06                     | 0.44              |
| 8:AB:1368:G:H2'  | 8:AB:1369:G:C8    | 2.52                     | 0.44              |
| 8:AB:1445:G:C6   | 8:AB:1446:C:C4    | 3.05                     | 0.44              |
| 8:AB:1661:G:C2'  | 8:AB:1662:U:H5'   | 2.47                     | 0.44              |
| 8:AB:1672:A:N6   | 8:AB:1673:G:O6    | 2.51                     | 0.44              |
| 8:AB:1708:C:O2'  | 8:AB:1709:U:H5'   | 2.18                     | 0.44              |
| 8:AB:1710:G:H1   | 8:AB:1748:C:H42   | 1.66                     | 0.44              |
| 8:AB:1750:G:H2'  | 8:AB:2860:A:C2    | 2.51                     | 0.44              |
| 8:AB:1761:C:C6   | 8:AB:1762:A:N7    | 2.85                     | 0.44              |
| 8:AB:1858:A:C2   | 8:AB:1885:A:C8    | 3.05                     | 0.44              |
| 8:AB:2018:G:N2   | 23:AQ:32:ARG:NH1  | 2.65                     | 0.44              |
| 8:AB:2025:C:C3'  | 8:AB:2026:U:H6    | 2.31                     | 0.44              |
| 8:AB:2056:G:C4   | 8:AB:2577:A:C2    | 3.05                     | 0.44              |
| 8:AB:2218:G:C6   | 8:AB:2219:U:C4    | 3.06                     | 0.44              |
| 8:AB:2230:G:C4   | 32:AZ:30:HIS:CE1  | 3.05                     | 0.44              |
| 8:AB:2287:A:N3   | 8:AB:2287:A:H2'   | 2.32                     | 0.44              |
| 8:AB:2388:A:C2'  | 8:AB:2389:G:H5'   | 2.47                     | 0.44              |
| 8:AB:2403:C:C2   | 8:AB:2404:U:C5    | 3.06                     | 0.44              |
| 8:AB:2432:A:H5'  | 8:AB:2433:A:OP2   | 2.17                     | 0.44              |
| 8:AB:2450:A:C2   | 8:AB:2451:A:C4    | 3.05                     | 0.44              |
| 8:AB:2485:G:N3   | 19:AM:118:LYS:NZ  | 2.65                     | 0.44              |
| 8:AB:2517:C:O2'  | 8:AB:2518:A:P     | 2.75                     | 0.44              |
| 8:AB:2535:G:H5'' | 8:AB:2535:G:H8    | 1.82                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2671:G:C6     | 8:AB:2672:U:N3     | 2.85                     | 0.44              |
| 8:AB:2720:U:C2     | 8:AB:2721:A:N7     | 2.86                     | 0.44              |
| 9:AC:22:GLU:HA     | 9:AC:202:ARG:HH21  | 1.82                     | 0.44              |
| 9:AC:143:VAL:HG13  | 9:AC:189:ALA:HB2   | 2.00                     | 0.44              |
| 9:AC:254:LYS:NZ    | 9:AC:254:LYS:H     | 2.10                     | 0.44              |
| 10:AD:6:GLY:HA2    | 10:AD:201:LEU:HD13 | 1.98                     | 0.44              |
| 10:AD:7:LYS:CB     | 10:AD:201:LEU:HD21 | 2.33                     | 0.44              |
| 10:AD:46:ARG:O     | 10:AD:47:ALA:CB    | 2.64                     | 0.44              |
| 11:AE:60:TRP:CD1   | 11:AE:70:SER:HB3   | 2.51                     | 0.44              |
| 11:AE:131:THR:HG22 | 11:AE:160:ALA:HB1  | 1.99                     | 0.44              |
| 11:AE:137:LYS:H    | 11:AE:137:LYS:CD   | 2.21                     | 0.44              |
| 13:AG:22:VAL:HG22  | 13:AG:23:ILE:N     | 2.33                     | 0.44              |
| 13:AG:169:ARG:HH11 | 13:AG:170:THR:N    | 2.15                     | 0.44              |
| 14:AH:144:VAL:HG12 | 14:AH:145:ASN:N    | 2.29                     | 0.44              |
| 17:AK:86:LEU:HB2   | 17:AK:95:ILE:HG22  | 1.99                     | 0.44              |
| 17:AK:113:MET:C    | 17:AK:115:ILE:H    | 2.19                     | 0.44              |
| 18:AL:27:LEU:C     | 18:AL:29:LYS:H     | 2.19                     | 0.44              |
| 18:AL:109:LYS:HA   | 18:AL:126:ARG:CB   | 2.45                     | 0.44              |
| 18:AL:126:ARG:NH1  | 18:AL:127:VAL:CA   | 2.81                     | 0.44              |
| 21:AO:68:LYS:HB2   | 21:AO:68:LYS:HE3   | 1.74                     | 0.44              |
| 22:AP:108:ARG:HH12 | 33:BA:1464:U:P     | 2.40                     | 0.44              |
| 23:AQ:46:TYR:CD2   | 24:AR:79:ARG:HG2   | 2.51                     | 0.44              |
| 24:AR:90:ARG:NH2   | 24:AR:92:TRP:CG    | 2.84                     | 0.44              |
| 25:AS:33:LEU:O     | 25:AS:34:ASP:C     | 2.55                     | 0.44              |
| 27:AU:48:VAL:O     | 27:AU:53:GLN:HG2   | 2.16                     | 0.44              |
| 27:AU:48:VAL:HG12  | 27:AU:50:ALA:HB3   | 1.99                     | 0.44              |
| 30:AX:28:LEU:H     | 30:AX:28:LEU:HD23  | 1.82                     | 0.44              |
| 30:AX:42:LEU:HB3   | 30:AX:43:LEU:H     | 1.57                     | 0.44              |
| 32:AZ:15:SER:HB3   | 32:AZ:23:LYS:NZ    | 2.32                     | 0.44              |
| 33:BA:318:G:N1     | 33:BA:319:G:C5     | 2.85                     | 0.44              |
| 33:BA:412:A:H4'    | 33:BA:412:A:OP1    | 2.18                     | 0.44              |
| 33:BA:439:U:H5'    | 36:BD:120:LYS:HG3  | 1.99                     | 0.44              |
| 33:BA:557:G:H2'    | 33:BA:558:G:N9     | 2.32                     | 0.44              |
| 33:BA:604:G:H3'    | 33:BA:605:U:C6     | 2.52                     | 0.44              |
| 33:BA:798:U:C2'    | 33:BA:799:G:O5'    | 2.64                     | 0.44              |
| 33:BA:885:G:H2'    | 33:BA:886:G:C8     | 2.52                     | 0.44              |
| 33:BA:979:C:O2'    | 33:BA:980:C:H5'    | 2.18                     | 0.44              |
| 33:BA:1050:G:C6    | 33:BA:1051:C:C4    | 3.06                     | 0.44              |
| 33:BA:1079:G:C4    | 33:BA:1080:A:C2    | 3.05                     | 0.44              |
| 33:BA:1238:A:C2    | 33:BA:1239:A:N7    | 2.85                     | 0.44              |
| 33:BA:1331:G:O3'   | 33:BA:1332:A:C8    | 2.70                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:1446:A:H2'   | 33:BA:1447:A:H5'' | 1.98                     | 0.44              |
| 33:BA:1518:A:C2    | 33:BA:1519:A:C2   | 3.04                     | 0.44              |
| 34:BB:128:LEU:HD12 | 34:BB:129:THR:OG1 | 2.17                     | 0.44              |
| 34:BB:169:HIS:CE1  | 34:BB:170:ILE:CD1 | 3.01                     | 0.44              |
| 35:BC:10:ARG:O     | 35:BC:15:LYS:HB2  | 2.17                     | 0.44              |
| 35:BC:142:ARG:C    | 35:BC:144:GLY:H   | 2.21                     | 0.44              |
| 36:BD:13:ARG:CG    | 36:BD:14:GLU:N    | 2.61                     | 0.44              |
| 36:BD:61:ARG:HD2   | 36:BD:71:PHE:CD2  | 2.51                     | 0.44              |
| 39:BG:72:VAL:HG11  | 39:BG:145:GLU:OE2 | 2.17                     | 0.44              |
| 41:BI:126:PHE:CD1  | 41:BI:129:ARG:HG3 | 2.52                     | 0.44              |
| 42:BJ:33:GLY:HA3   | 42:BJ:83:THR:OG1  | 2.18                     | 0.44              |
| 51:BS:20:LYS:NZ    | 51:BS:20:LYS:HB3  | 2.31                     | 0.44              |
| 51:BS:33:TRP:CD1   | 51:BS:51:HIS:CG   | 3.05                     | 0.44              |
| 53:BU:13:VAL:CG1   | 53:BU:14:ALA:H    | 2.08                     | 0.44              |
| 1:C0:29:VAL:H      | 1:C0:36:LYS:CD    | 2.25                     | 0.44              |
| 2:C1:6:GLU:O       | 2:C1:7:LYS:C      | 2.55                     | 0.44              |
| 3:C2:13:ASN:O      | 3:C2:17:GLY:HA3   | 2.17                     | 0.44              |
| 4:C3:23:HIS:HD2    | 4:C3:47:ALA:O     | 2.01                     | 0.44              |
| 5:C4:1:MET:SD      | 8:CB:2527:C:C1'   | 3.05                     | 0.44              |
| 7:CA:29:A:P        | 7:CA:29:A:O4'     | 2.76                     | 0.44              |
| 7:CA:57:A:C5       | 12:CF:25:MET:HG2  | 2.53                     | 0.44              |
| 7:CA:81:G:H4'      | 8:CB:919:U:H4'    | 1.99                     | 0.44              |
| 7:CA:105:G:C2'     | 7:CA:106:G:H5'    | 2.47                     | 0.44              |
| 8:CB:250:G:H5'     | 18:CL:60:ARG:CZ   | 2.47                     | 0.44              |
| 8:CB:347:A:C8      | 8:CB:347:A:C5'    | 2.94                     | 0.44              |
| 8:CB:407:G:N2      | 8:CB:421:C:C2     | 2.86                     | 0.44              |
| 8:CB:841:G:C2      | 8:CB:938:G:C2     | 3.05                     | 0.44              |
| 8:CB:919:U:O4      | 8:CB:920:A:C6     | 2.71                     | 0.44              |
| 8:CB:949:G:C2      | 8:CB:950:G:N7     | 2.85                     | 0.44              |
| 8:CB:1056:G:O4'    | 8:CB:1086:A:H8    | 1.99                     | 0.44              |
| 8:CB:1093:G:N2     | 8:CB:1098:A:N6    | 2.58                     | 0.44              |
| 8:CB:1182:G:H2'    | 8:CB:1183:U:H5'   | 1.99                     | 0.44              |
| 8:CB:1269:A:H2'    | 8:CB:1270:C:C6    | 2.51                     | 0.44              |
| 8:CB:1345:C:C6     | 8:CB:1345:C:C3'   | 3.00                     | 0.44              |
| 8:CB:1351:C:H2'    | 8:CB:1352:U:O4'   | 2.17                     | 0.44              |
| 8:CB:1355:G:C2     | 8:CB:1356:G:C8    | 3.06                     | 0.44              |
| 8:CB:1668:A:C5     | 8:CB:1674:G:C6    | 3.04                     | 0.44              |
| 8:CB:1679:A:C5     | 8:CB:1680:U:C5    | 3.05                     | 0.44              |
| 8:CB:1709:U:C6     | 8:CB:1750:G:N2    | 2.85                     | 0.44              |
| 8:CB:1745:A:O5'    | 8:CB:1745:A:H8    | 2.00                     | 0.44              |
| 8:CB:1804:C:OP1    | 9:CC:254:LYS:CG   | 2.61                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1891:G:H2'   | 8:CB:1892:C:H6     | 1.82                     | 0.44              |
| 8:CB:1970:A:N3    | 8:CB:1972:G:N7     | 2.64                     | 0.44              |
| 8:CB:2009:A:H3'   | 8:CB:2009:A:C8     | 2.53                     | 0.44              |
| 8:CB:2045:C:N3    | 8:CB:2624:G:C2     | 2.86                     | 0.44              |
| 8:CB:2082:A:N6    | 8:CB:2239:G:C5     | 2.85                     | 0.44              |
| 8:CB:2230:G:O3'   | 32:CZ:28:VAL:HG23  | 2.16                     | 0.44              |
| 8:CB:2241:A:C2    | 8:CB:2242:G:C8     | 3.05                     | 0.44              |
| 8:CB:2257:U:C3'   | 8:CB:2258:C:H5''   | 2.46                     | 0.44              |
| 8:CB:2306:C:O2    | 12:CF:149:ARG:CZ   | 2.65                     | 0.44              |
| 8:CB:2384:U:O2    | 8:CB:2384:U:C2'    | 2.64                     | 0.44              |
| 8:CB:2627:G:O2'   | 8:CB:2781:A:N1     | 2.41                     | 0.44              |
| 11:CE:17:THR:O    | 11:CE:18:THR:OG1   | 2.32                     | 0.44              |
| 11:CE:90:GLN:HG3  | 11:CE:92:HIS:HD2   | 1.83                     | 0.44              |
| 11:CE:132:LYS:HZ2 | 11:CE:132:LYS:HA   | 1.81                     | 0.44              |
| 11:CE:147:LEU:O   | 11:CE:148:ILE:HG23 | 2.17                     | 0.44              |
| 11:CE:195:GLN:HB2 | 11:CE:198:GLU:C    | 2.37                     | 0.44              |
| 12:CF:149:ARG:O   | 12:CF:150:GLY:O    | 2.35                     | 0.44              |
| 14:CH:73:ASN:HD21 | 14:CH:140:ALA:HA   | 1.82                     | 0.44              |
| 14:CH:75:LEU:O    | 14:CH:76:GLU:C     | 2.55                     | 0.44              |
| 16:CJ:25:LEU:HD12 | 16:CJ:64:VAL:H     | 1.81                     | 0.44              |
| 19:CM:6:ARG:HD2   | 19:CM:71:LYS:HZ2   | 1.78                     | 0.44              |
| 19:CM:90:GLU:HA   | 19:CM:91:TYR:CE2   | 2.52                     | 0.44              |
| 24:CR:84:ARG:O    | 24:CR:85:LYS:O     | 2.34                     | 0.44              |
| 30:CX:7:ARG:CZ    | 30:CX:56:LEU:HD11  | 2.47                     | 0.44              |
| 33:DA:57:G:N1     | 33:DA:356:A:N6     | 2.63                     | 0.44              |
| 33:DA:71:A:H1'    | 33:DA:72:A:C5'     | 2.47                     | 0.44              |
| 33:DA:133:U:O2    | 33:DA:230:G:C2     | 2.70                     | 0.44              |
| 33:DA:247:G:OP1   | 33:DA:247:G:H4'    | 2.18                     | 0.44              |
| 33:DA:265:G:H5'   | 49:DQ:65:PRO:O     | 2.17                     | 0.44              |
| 33:DA:323:U:O4    | 33:DA:324:G:C6     | 2.70                     | 0.44              |
| 33:DA:408:A:H2'   | 33:DA:409:U:H5'    | 1.99                     | 0.44              |
| 33:DA:428:G:N9    | 33:DA:430:A:N7     | 2.65                     | 0.44              |
| 33:DA:499:A:C5    | 33:DA:547:A:N7     | 2.86                     | 0.44              |
| 33:DA:654:G:C2    | 33:DA:753:A:C4     | 3.05                     | 0.44              |
| 33:DA:896:C:N3    | 33:DA:897:C:C5     | 2.85                     | 0.44              |
| 33:DA:917:G:C2    | 33:DA:918:A:C4     | 3.05                     | 0.44              |
| 33:DA:924:C:H2'   | 33:DA:925:G:C8     | 2.52                     | 0.44              |
| 33:DA:1059:C:H3'  | 33:DA:1059:C:C6    | 2.51                     | 0.44              |
| 33:DA:1102:A:H5'' | 33:DA:1102:A:C8    | 2.52                     | 0.44              |
| 33:DA:1130:A:N6   | 33:DA:1144:G:C2    | 2.85                     | 0.44              |
| 33:DA:1187:G:C4   | 33:DA:1188:A:C8    | 3.05                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1231:G:C2   | 33:DA:1232:U:C2   | 3.05                     | 0.44              |
| 33:DA:1244:G:C6   | 33:DA:1245:C:N4   | 2.85                     | 0.44              |
| 33:DA:1307:U:O4   | 33:DA:1331:G:N2   | 2.49                     | 0.44              |
| 33:DA:1454:G:C2   | 33:DA:1455:G:C8   | 3.05                     | 0.44              |
| 33:DA:1476:A:C2'  | 33:DA:1477:U:H5'  | 2.46                     | 0.44              |
| 33:DA:1480:A:H8   | 33:DA:1480:A:C5'  | 2.30                     | 0.44              |
| 33:DA:1515:G:C2   | 33:DA:1516:G:C5   | 3.05                     | 0.44              |
| 33:DA:1521:C:H2'  | 33:DA:1522:U:O5'  | 2.17                     | 0.44              |
| 36:DD:10:LEU:HD22 | 36:DD:62:ARG:CD   | 2.46                     | 0.44              |
| 36:DD:84:ASN:ND2  | 36:DD:84:ASN:O    | 2.50                     | 0.44              |
| 37:DE:15:ILE:HG21 | 37:DE:35:LEU:HD23 | 1.98                     | 0.44              |
| 38:DF:94:HIS:O    | 38:DF:95:ALA:O    | 2.35                     | 0.44              |
| 40:DH:60:LEU:HA   | 40:DH:60:LEU:HD22 | 1.73                     | 0.44              |
| 43:DK:20:ALA:O    | 43:DK:84:MET:HB2  | 2.16                     | 0.44              |
| 43:DK:122:PRO:HB2 | 43:DK:123:PRO:CD  | 2.47                     | 0.44              |
| 50:DR:33:THR:HG22 | 50:DR:37:LYS:O    | 2.17                     | 0.44              |
| 51:DS:15:LEU:HA   | 51:DS:18:VAL:HG12 | 1.99                     | 0.44              |
| 52:DT:18:LYS:HE3  | 52:DT:18:LYS:HB2  | 1.82                     | 0.44              |
| 53:DU:3:ILE:HD11  | 53:DU:19:LYS:HG2  | 1.99                     | 0.44              |
| 53:DU:44:ARG:C    | 53:DU:46:ARG:H    | 2.20                     | 0.44              |
| 4:A3:9:ALA:O      | 4:A3:11:LYS:N     | 2.50                     | 0.44              |
| 7:AA:41:G:H3'     | 7:AA:42:C:C5'     | 2.47                     | 0.44              |
| 7:AA:59:A:H2'     | 7:AA:60:C:H6      | 1.80                     | 0.44              |
| 8:AB:23:G:N1      | 8:AB:518:G:C6     | 2.85                     | 0.44              |
| 8:AB:77:G:C6      | 8:AB:78:U:N3      | 2.85                     | 0.44              |
| 8:AB:166:U:C2'    | 8:AB:167:A:H5'    | 2.47                     | 0.44              |
| 8:AB:301:G:O2'    | 8:AB:302:C:H5''   | 2.17                     | 0.44              |
| 8:AB:346:A:C6     | 8:AB:347:A:N3     | 2.86                     | 0.44              |
| 8:AB:482:A:C8     | 8:AB:506:G:N1     | 2.86                     | 0.44              |
| 8:AB:516:C:H1'    | 8:AB:1261:C:O2'   | 2.16                     | 0.44              |
| 8:AB:647:G:H5''   | 8:AB:647:G:C8     | 2.48                     | 0.44              |
| 8:AB:671:C:C2     | 8:AB:672:C:C6     | 3.05                     | 0.44              |
| 8:AB:682:G:N2     | 8:AB:683:U:N3     | 2.64                     | 0.44              |
| 8:AB:760:G:H2'    | 8:AB:761:A:C8     | 2.52                     | 0.44              |
| 8:AB:784:G:C2     | 8:AB:792:A:C5     | 3.06                     | 0.44              |
| 8:AB:997:G:OP1    | 23:AQ:92:LYS:HG2  | 2.18                     | 0.44              |
| 8:AB:1451:C:H1'   | 8:AB:1452:G:N7    | 2.32                     | 0.44              |
| 8:AB:1459:G:C8    | 8:AB:1459:G:O5'   | 2.71                     | 0.44              |
| 8:AB:1461:C:H2'   | 8:AB:1462:C:C6    | 2.53                     | 0.44              |
| 8:AB:1558:C:H1'   | 8:AB:1560:G:N7    | 2.32                     | 0.44              |
| 8:AB:1590:A:O2'   | 8:AB:1591:A:H5'   | 2.17                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1601:G:OP2    | 26:AT:62:VAL:CG1   | 2.65                     | 0.44              |
| 8:AB:1613:G:C4     | 8:AB:1617:C:N3     | 2.85                     | 0.44              |
| 8:AB:1759:A:O2'    | 8:AB:1760:C:H5'    | 2.17                     | 0.44              |
| 8:AB:1826:G:P      | 9:AC:221:GLY:HA2   | 2.58                     | 0.44              |
| 8:AB:1890:A:C2     | 8:AB:2234:G:N3     | 2.85                     | 0.44              |
| 8:AB:1899:A:C8     | 8:AB:1899:A:C3'    | 3.00                     | 0.44              |
| 8:AB:1931:U:H2'    | 8:AB:1932:A:H8     | 1.82                     | 0.44              |
| 8:AB:1942:C:C5     | 8:AB:1943:U:C4     | 3.05                     | 0.44              |
| 8:AB:2094:A:C2     | 8:AB:2196:C:N3     | 2.86                     | 0.44              |
| 8:AB:2201:G:N1     | 8:AB:2223:G:C5     | 2.85                     | 0.44              |
| 8:AB:2268:A:C8     | 8:AB:2268:A:C3'    | 3.00                     | 0.44              |
| 8:AB:2384:U:H2'    | 8:AB:2384:U:O2     | 2.17                     | 0.44              |
| 8:AB:2488:G:N3     | 8:AB:2489:U:C6     | 2.86                     | 0.44              |
| 8:AB:2616:C:C4     | 8:AB:2617:U:C5     | 3.05                     | 0.44              |
| 8:AB:2625:G:C6     | 8:AB:2626:C:C4     | 3.06                     | 0.44              |
| 8:AB:2662:A:C4     | 8:AB:2663:G:H1'    | 2.53                     | 0.44              |
| 8:AB:2706:A:H2'    | 8:AB:2707:U:H5''   | 1.99                     | 0.44              |
| 9:AC:185:ALA:C     | 9:AC:187:CYS:H     | 2.21                     | 0.44              |
| 10:AD:42:ASN:ND2   | 10:AD:43:ASP:N     | 2.59                     | 0.44              |
| 10:AD:96:ILE:H     | 10:AD:96:ILE:HG13  | 1.57                     | 0.44              |
| 11:AE:149:ILE:CD1  | 11:AE:186:VAL:HG13 | 2.47                     | 0.44              |
| 11:AE:149:ILE:HG22 | 11:AE:168:ASP:HB2  | 1.98                     | 0.44              |
| 11:AE:179:SER:O    | 11:AE:183:PHE:CD2  | 2.70                     | 0.44              |
| 12:AF:104:THR:CG2  | 12:AF:105:ILE:HD12 | 2.47                     | 0.44              |
| 13:AG:10:VAL:O     | 13:AG:10:VAL:HG13  | 2.17                     | 0.44              |
| 16:AJ:25:LEU:HD13  | 16:AJ:25:LEU:N     | 2.32                     | 0.44              |
| 17:AK:49:ARG:HB2   | 17:AK:49:ARG:HH11  | 1.80                     | 0.44              |
| 17:AK:82:ASN:ND2   | 17:AK:82:ASN:N     | 2.62                     | 0.44              |
| 18:AL:78:ARG:C     | 18:AL:78:ARG:HH11  | 2.21                     | 0.44              |
| 19:AM:64:TRP:CD1   | 19:AM:104:GLU:OE1  | 2.71                     | 0.44              |
| 19:AM:134:THR:CB   | 28:AV:79:ARG:HD2   | 2.44                     | 0.44              |
| 22:AP:38:ARG:HA    | 22:AP:38:ARG:HD2   | 1.46                     | 0.44              |
| 22:AP:49:ILE:C     | 22:AP:50:ARG:HD3   | 2.36                     | 0.44              |
| 28:AV:65:VAL:C     | 28:AV:67:GLY:N     | 2.69                     | 0.44              |
| 29:AW:80:SER:HB2   | 29:AW:83:ALA:O     | 2.17                     | 0.44              |
| 32:AZ:30:HIS:CB    | 32:AZ:48:GLN:HG2   | 2.45                     | 0.44              |
| 33:BA:155:A:H2'    | 33:BA:156:C:H6     | 1.83                     | 0.44              |
| 33:BA:303:A:C2     | 33:BA:304:U:H1'    | 2.53                     | 0.44              |
| 33:BA:378:G:O2'    | 33:BA:379:C:H5'    | 2.17                     | 0.44              |
| 33:BA:404:G:C2     | 33:BA:405:U:C2     | 3.05                     | 0.44              |
| 33:BA:429:U:O2     | 33:BA:430:A:H5''   | 2.17                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:BA:499:A:N6   | 33:BA:547:A:C8    | 2.86                     | 0.44              |
| 33:BA:506:G:C8   | 33:BA:507:C:H5    | 2.35                     | 0.44              |
| 33:BA:509:A:H62  | 33:BA:510:A:N6    | 2.16                     | 0.44              |
| 33:BA:567:G:N2   | 33:BA:568:G:H1'   | 2.32                     | 0.44              |
| 33:BA:570:G:C2   | 33:BA:571:U:C4    | 3.06                     | 0.44              |
| 33:BA:697:U:H3   | 33:BA:798:U:C4'   | 2.31                     | 0.44              |
| 33:BA:699:C:C5   | 33:BA:700:G:N7    | 2.85                     | 0.44              |
| 33:BA:939:G:O2'  | 33:BA:1375:A:H1'  | 2.17                     | 0.44              |
| 33:BA:1022:A:H5' | 33:BA:1023:U:OP2  | 2.18                     | 0.44              |
| 33:BA:1119:C:OP1 | 41:BI:84:ARG:NH2  | 2.51                     | 0.44              |
| 33:BA:1194:U:N3  | 33:BA:1195:C:C4   | 2.85                     | 0.44              |
| 33:BA:1243:C:O2' | 33:BA:1244:G:H5'  | 2.17                     | 0.44              |
| 33:BA:1348:U:O2  | 33:BA:1348:U:H2'  | 2.17                     | 0.44              |
| 33:BA:1433:A:C8  | 33:BA:1434:A:N7   | 2.85                     | 0.44              |
| 33:BA:1477:U:H2' | 33:BA:1478:U:C6   | 2.51                     | 0.44              |
| 35:BC:17:TRP:HE1 | 46:BN:95:LEU:H    | 1.65                     | 0.44              |
| 35:BC:70:ALA:C   | 35:BC:72:PRO:HD3  | 2.38                     | 0.44              |
| 39:BG:19:SER:O   | 39:BG:23:ALA:N    | 2.51                     | 0.44              |
| 41:BI:6:TYR:CA   | 41:BI:85:ALA:HB2  | 2.47                     | 0.44              |
| 42:BJ:14:ASP:OD1 | 42:BJ:17:LEU:HB2  | 2.18                     | 0.44              |
| 44:BL:89:LEU:CB  | 44:BL:92:VAL:HG21 | 2.41                     | 0.44              |
| 46:BN:74:ARG:HD3 | 46:BN:74:ARG:O    | 2.17                     | 0.44              |
| 48:BP:70:ARG:HG3 | 48:BP:70:ARG:O    | 2.15                     | 0.44              |
| 50:BR:57:ALA:O   | 50:BR:60:ARG:HG3  | 2.16                     | 0.44              |
| 5:C4:1:MET:HE2   | 5:C4:2:LYS:HG3    | 1.96                     | 0.44              |
| 7:CA:70:C:H2'    | 7:CA:71:C:C6      | 2.52                     | 0.44              |
| 7:CA:116:G:H4'   | 21:CO:54:VAL:HG13 | 1.98                     | 0.44              |
| 8:CB:199:A:H1'   | 32:CZ:20:ASN:ND2  | 2.32                     | 0.44              |
| 8:CB:223:A:C8    | 8:CB:422:A:H1'    | 2.51                     | 0.44              |
| 8:CB:346:A:H2'   | 8:CB:347:A:C5'    | 2.47                     | 0.44              |
| 8:CB:567:U:C2    | 8:CB:568:U:C6     | 3.06                     | 0.44              |
| 8:CB:656:G:H2'   | 8:CB:657:U:O4'    | 2.18                     | 0.44              |
| 8:CB:699:A:C4'   | 8:CB:1634:A:N7    | 2.80                     | 0.44              |
| 8:CB:943:A:OP2   | 18:CL:40:SER:OG   | 2.26                     | 0.44              |
| 8:CB:970:U:C6    | 8:CB:970:U:O5'    | 2.71                     | 0.44              |
| 8:CB:1030:C:C4   | 8:CB:1125:G:N2    | 2.85                     | 0.44              |
| 8:CB:1031:G:C8   | 8:CB:1031:G:H3'   | 2.52                     | 0.44              |
| 8:CB:1070:A:H2   | 8:CB:1097:U:HO2'  | 1.61                     | 0.44              |
| 8:CB:1098:A:N7   | 8:CB:1099:G:C8    | 2.85                     | 0.44              |
| 8:CB:1199:U:H2'  | 8:CB:1200:C:H6    | 1.80                     | 0.44              |
| 8:CB:1365:A:O4'  | 32:CZ:10:GLU:HG2  | 2.17                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1571:A:N1    | 8:CB:1572:A:C6     | 2.86                     | 0.44              |
| 8:CB:1661:G:C2'   | 8:CB:1662:U:H5'    | 2.48                     | 0.44              |
| 8:CB:1668:A:H4'   | 8:CB:1669:A:O5'    | 2.17                     | 0.44              |
| 8:CB:1675:C:O5'   | 8:CB:1675:C:H6     | 2.00                     | 0.44              |
| 8:CB:1773:A:OP2   | 8:CB:1773:A:H4'    | 2.17                     | 0.44              |
| 8:CB:1795:C:O2'   | 8:CB:1901:A:OP1    | 2.30                     | 0.44              |
| 8:CB:1970:A:H1'   | 8:CB:1972:G:C8     | 2.52                     | 0.44              |
| 8:CB:1992:G:C4    | 8:CB:1997:C:N4     | 2.86                     | 0.44              |
| 8:CB:2045:C:C2    | 8:CB:2624:G:C2     | 3.05                     | 0.44              |
| 8:CB:2073:C:C2    | 8:CB:2437:G:N1     | 2.86                     | 0.44              |
| 8:CB:2201:G:C5    | 8:CB:2202:U:O2     | 2.70                     | 0.44              |
| 8:CB:2330:G:N3    | 29:CW:36:ILE:CD1   | 2.80                     | 0.44              |
| 8:CB:2358:A:H2'   | 8:CB:2359:C:C5'    | 2.46                     | 0.44              |
| 8:CB:2431:U:C2'   | 8:CB:2432:A:H5''   | 2.44                     | 0.44              |
| 8:CB:2523:G:C4    | 8:CB:2765:A:N6     | 2.85                     | 0.44              |
| 8:CB:2648:G:C2    | 8:CB:2649:C:O2     | 2.70                     | 0.44              |
| 8:CB:2674:G:H2'   | 8:CB:2675:A:O4'    | 2.17                     | 0.44              |
| 8:CB:2692:G:H2'   | 8:CB:2693:G:C8     | 2.52                     | 0.44              |
| 8:CB:2800:A:C2    | 8:CB:2801:G:N3     | 2.85                     | 0.44              |
| 8:CB:2819:G:O2'   | 8:CB:2820:A:H5'    | 2.17                     | 0.44              |
| 9:CC:46:GLY:O     | 9:CC:47:ARG:CB     | 2.66                     | 0.44              |
| 10:CD:36:GLN:HB2  | 10:CD:37:VAL:H     | 1.67                     | 0.44              |
| 10:CD:125:TRP:C   | 10:CD:127:PHE:N    | 2.70                     | 0.44              |
| 10:CD:138:LEU:HG  | 10:CD:142:VAL:HB   | 1.99                     | 0.44              |
| 11:CE:24:ASN:OD1  | 11:CE:181:ILE:HD11 | 2.17                     | 0.44              |
| 11:CE:98:LYS:HE2  | 11:CE:99:LYS:HD3   | 1.98                     | 0.44              |
| 14:CH:104:THR:HA  | 14:CH:108:VAL:O    | 2.16                     | 0.44              |
| 15:CI:16:MET:HE3  | 15:CI:19:PRO:HG2   | 2.00                     | 0.44              |
| 15:CI:98:GLY:HA3  | 15:CI:137:LEU:HD22 | 1.98                     | 0.44              |
| 15:CI:120:ASP:OD1 | 15:CI:120:ASP:N    | 2.47                     | 0.44              |
| 17:CK:2:ILE:HG22  | 17:CK:32:TYR:HB2   | 1.99                     | 0.44              |
| 17:CK:76:VAL:O    | 22:CP:74:GLN:CB    | 2.58                     | 0.44              |
| 18:CL:61:LEU:N    | 18:CL:62:PRO:HD3   | 2.32                     | 0.44              |
| 19:CM:14:LYS:HB3  | 19:CM:14:LYS:HE3   | 1.57                     | 0.44              |
| 20:CN:28:LEU:HD13 | 20:CN:34:ILE:CD1   | 2.46                     | 0.44              |
| 20:CN:37:THR:HG22 | 20:CN:38:LEU:N     | 2.33                     | 0.44              |
| 21:CO:38:GLN:N    | 21:CO:50:ALA:CB    | 2.80                     | 0.44              |
| 24:CR:42:ALA:HB1  | 24:CR:53:PHE:CE1   | 2.52                     | 0.44              |
| 27:CU:9:GLU:O     | 27:CU:10:VAL:HG13  | 2.17                     | 0.44              |
| 27:CU:43:LYS:HB3  | 27:CU:43:LYS:HZ2   | 1.82                     | 0.44              |
| 27:CU:85:ARG:HH21 | 27:CU:86:PHE:HE1   | 1.62                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:CV:38:LEU:O     | 28:CV:40:ILE:HG23 | 2.18                     | 0.44              |
| 33:DA:6:G:H4'      | 33:DA:298:A:H4'   | 2.00                     | 0.44              |
| 33:DA:131:A:H61    | 33:DA:231:U:H3    | 1.66                     | 0.44              |
| 33:DA:218:U:H3'    | 33:DA:218:U:C6    | 2.52                     | 0.44              |
| 33:DA:261:U:H5     | 52:DT:73:ARG:NH2  | 2.15                     | 0.44              |
| 33:DA:605:U:O2'    | 33:DA:606:G:C5'   | 2.64                     | 0.44              |
| 33:DA:685:G:C3'    | 33:DA:685:G:C8    | 3.01                     | 0.44              |
| 33:DA:691:G:H2'    | 33:DA:692:U:H6    | 1.82                     | 0.44              |
| 33:DA:762:U:C2'    | 33:DA:763:G:H8    | 2.19                     | 0.44              |
| 33:DA:1053:G:HO2'  | 33:DA:1199:U:H5   | 1.60                     | 0.44              |
| 33:DA:1095:U:OP1   | 33:DA:1108:G:N2   | 2.42                     | 0.44              |
| 33:DA:1105:A:N1    | 33:DA:1106:G:N7   | 2.65                     | 0.44              |
| 33:DA:1323:G:H2'   | 33:DA:1324:A:C8   | 2.53                     | 0.44              |
| 33:DA:1479:C:O2    | 33:DA:1480:A:C8   | 2.70                     | 0.44              |
| 33:DA:1480:A:H2'   | 33:DA:1481:U:O5'  | 2.17                     | 0.44              |
| 34:DB:8:MET:C      | 34:DB:8:MET:SD    | 2.96                     | 0.44              |
| 34:DB:145:ASN:HD22 | 34:DB:145:ASN:HA  | 1.62                     | 0.44              |
| 34:DB:167:HIS:HD2  | 34:DB:168:GLU:CG  | 2.25                     | 0.44              |
| 36:DD:87:GLU:O     | 36:DD:88:ASN:C    | 2.55                     | 0.44              |
| 37:DE:19:ARG:HG3   | 37:DE:20:VAL:N    | 2.32                     | 0.44              |
| 44:DL:71:HIS:N     | 44:DL:98:ARG:HH22 | 2.16                     | 0.44              |
| 46:DN:5:MET:HA     | 46:DN:8:ARG:HE    | 1.82                     | 0.44              |
| 50:DR:72:ARG:O     | 50:DR:73:HIS:CG   | 2.70                     | 0.44              |
| 51:DS:10:ILE:CG2   | 51:DS:38:THR:O    | 2.65                     | 0.44              |
| 2:A1:26:LYS:O      | 2:A1:26:LYS:HG3   | 2.11                     | 0.44              |
| 4:A3:23:HIS:O      | 4:A3:45:PRO:HB3   | 2.17                     | 0.44              |
| 7:AA:105:G:C2      | 7:AA:106:G:N9     | 2.85                     | 0.44              |
| 8:AB:255:A:H5''    | 8:AB:255:A:C8     | 2.51                     | 0.44              |
| 8:AB:278:A:C2      | 8:AB:362:A:C8     | 3.06                     | 0.44              |
| 8:AB:358:U:H6      | 8:AB:358:U:O5'    | 2.01                     | 0.44              |
| 8:AB:408:G:C8      | 8:AB:408:G:C3'    | 3.00                     | 0.44              |
| 8:AB:523:C:H3'     | 8:AB:523:C:H6     | 1.82                     | 0.44              |
| 8:AB:558:U:O2      | 8:AB:558:U:H2'    | 2.17                     | 0.44              |
| 8:AB:672:C:O2      | 8:AB:673:C:C6     | 2.71                     | 0.44              |
| 8:AB:693:A:O2'     | 8:AB:694:U:H5'    | 2.18                     | 0.44              |
| 8:AB:772:C:H2'     | 8:AB:773:U:C6     | 2.42                     | 0.44              |
| 8:AB:822:G:O2'     | 8:AB:823:C:H5'    | 2.18                     | 0.44              |
| 8:AB:917:A:N6      | 8:AB:918:A:C6     | 2.84                     | 0.44              |
| 8:AB:1041:G:N2     | 8:AB:1042:G:C5    | 2.85                     | 0.44              |
| 8:AB:1161:C:O2'    | 24:AR:22:LEU:HD13 | 2.17                     | 0.44              |
| 8:AB:1183:U:C2     | 8:AB:1184:U:C5    | 3.05                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:1187:G:OP1    | 24:AR:84:ARG:NH2  | 2.51                     | 0.44              |
| 8:AB:1220:G:O6     | 8:AB:1230:A:C6    | 2.70                     | 0.44              |
| 8:AB:1323:C:OP1    | 25:AS:84:ARG:NH2  | 2.49                     | 0.44              |
| 8:AB:1364:G:C1'    | 8:AB:1368:G:H22   | 2.26                     | 0.44              |
| 8:AB:1370:C:O4'    | 8:AB:1810:A:H2    | 2.01                     | 0.44              |
| 8:AB:1425:G:O2'    | 8:AB:1426:G:H5'   | 2.18                     | 0.44              |
| 8:AB:1427:A:C1'    | 8:AB:1428:C:C5    | 3.01                     | 0.44              |
| 8:AB:1434:A:OP1    | 8:AB:1434:A:H4'   | 2.17                     | 0.44              |
| 8:AB:1437:C:C1'    | 8:AB:1515:A:H2    | 2.30                     | 0.44              |
| 8:AB:1707:G:C2     | 8:AB:1708:C:C2    | 3.05                     | 0.44              |
| 8:AB:1755:A:C2     | 8:AB:1758:U:C6    | 3.06                     | 0.44              |
| 8:AB:1813:G:H1'    | 9:AC:50:THR:HG21  | 2.00                     | 0.44              |
| 8:AB:1933:G:H2'    | 8:AB:1934:C:H5'   | 2.00                     | 0.44              |
| 8:AB:1974:C:C2'    | 8:AB:1975:G:O5'   | 2.66                     | 0.44              |
| 8:AB:2061:G:H4'    | 8:AB:2061:G:OP1   | 2.17                     | 0.44              |
| 8:AB:2199:A:N1     | 8:AB:2200:C:O2    | 2.50                     | 0.44              |
| 8:AB:2207:C:C2     | 8:AB:2218:G:C2    | 3.05                     | 0.44              |
| 8:AB:2296:U:H5     | 21:AO:8:ILE:HD11  | 1.81                     | 0.44              |
| 8:AB:2442:C:C6     | 8:AB:2442:C:C3'   | 3.00                     | 0.44              |
| 8:AB:2628:C:H1'    | 8:AB:2781:A:N3    | 2.32                     | 0.44              |
| 8:AB:2685:G:OP1    | 22:AP:62:LYS:NZ   | 2.49                     | 0.44              |
| 8:AB:2815:C:C2     | 8:AB:2816:G:C8    | 3.05                     | 0.44              |
| 8:AB:2892:G:H5''   | 8:AB:2894:G:N2    | 2.32                     | 0.44              |
| 9:AC:62:ARG:HD3    | 9:AC:62:ARG:C     | 2.37                     | 0.44              |
| 9:AC:75:ALA:HB1    | 9:AC:93:VAL:HG13  | 2.00                     | 0.44              |
| 11:AE:60:TRP:CD1   | 11:AE:70:SER:HB2  | 2.53                     | 0.44              |
| 11:AE:114:ARG:H    | 11:AE:114:ARG:HG2 | 1.55                     | 0.44              |
| 11:AE:147:LEU:HD12 | 11:AE:183:PHE:HA  | 1.98                     | 0.44              |
| 11:AE:165:HIS:O    | 11:AE:165:HIS:HD2 | 2.00                     | 0.44              |
| 11:AE:190:ALA:CB   | 11:AE:194:LYS:HE2 | 2.44                     | 0.44              |
| 12:AF:49:LEU:HD22  | 12:AF:52:ALA:HB2  | 1.99                     | 0.44              |
| 12:AF:56:LEU:HD13  | 12:AF:86:CYS:SG   | 2.57                     | 0.44              |
| 12:AF:120:SER:O    | 12:AF:127:TYR:CD1 | 2.70                     | 0.44              |
| 16:AJ:20:ALA:HB3   | 16:AJ:57:LEU:O    | 2.17                     | 0.44              |
| 16:AJ:59:ALA:O     | 16:AJ:62:VAL:HG22 | 2.17                     | 0.44              |
| 16:AJ:100:VAL:N    | 16:AJ:103:ILE:HB  | 2.32                     | 0.44              |
| 16:AJ:129:GLU:O    | 16:AJ:130:HIS:CB  | 2.65                     | 0.44              |
| 18:AL:14:LYS:HA    | 18:AL:14:LYS:CE   | 2.42                     | 0.44              |
| 18:AL:136:GLU:OE2  | 18:AL:136:GLU:HA  | 2.18                     | 0.44              |
| 19:AM:69:PRO:O     | 19:AM:70:ASP:CB   | 2.66                     | 0.44              |
| 20:AN:28:LEU:HD23  | 20:AN:48:VAL:HG21 | 2.00                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:AN:52:ILE:C    | 20:AN:54:LEU:N     | 2.70                     | 0.44              |
| 20:AN:63:ARG:NH1  | 20:AN:80:PHE:CE1   | 2.85                     | 0.44              |
| 22:AP:52:ARG:HG2  | 22:AP:60:VAL:CG1   | 2.48                     | 0.44              |
| 23:AQ:89:ILE:O    | 23:AQ:89:ILE:HG23  | 2.18                     | 0.44              |
| 24:AR:78:ARG:CZ   | 24:AR:87:GLN:HG2   | 2.48                     | 0.44              |
| 26:AT:16:VAL:O    | 26:AT:17:SER:CB    | 2.65                     | 0.44              |
| 28:AV:6:ALA:HB1   | 28:AV:40:ILE:HB    | 1.98                     | 0.44              |
| 28:AV:26:PHE:HE1  | 28:AV:42:LEU:HD12  | 1.81                     | 0.44              |
| 29:AW:6:GLY:O     | 29:AW:7:GLY:C      | 2.55                     | 0.44              |
| 29:AW:24:ARG:HH12 | 29:AW:56:HIS:HE1   | 1.65                     | 0.44              |
| 30:AX:14:LEU:HB2  | 30:AX:53:VAL:CG1   | 2.39                     | 0.44              |
| 33:BA:128:G:N2    | 33:BA:129:A:C4     | 2.85                     | 0.44              |
| 33:BA:385:C:C2'   | 33:BA:386:C:H5'    | 2.48                     | 0.44              |
| 33:BA:436:C:N3    | 33:BA:437:U:C5     | 2.86                     | 0.44              |
| 33:BA:444:G:H1    | 33:BA:490:C:N4     | 2.15                     | 0.44              |
| 33:BA:447:G:C8    | 33:BA:447:G:C3'    | 3.00                     | 0.44              |
| 33:BA:575:G:C4    | 33:BA:881:G:C2     | 3.05                     | 0.44              |
| 33:BA:577:G:O4'   | 33:BA:816:A:H2'    | 2.17                     | 0.44              |
| 33:BA:597:G:C2    | 33:BA:644:U:O2     | 2.70                     | 0.44              |
| 33:BA:657:U:H1'   | 47:BO:22:GLY:CA    | 2.39                     | 0.44              |
| 33:BA:673:A:C2    | 33:BA:674:G:C5     | 3.05                     | 0.44              |
| 33:BA:707:U:H2'   | 33:BA:708:C:H6     | 1.82                     | 0.44              |
| 33:BA:985:C:C4    | 33:BA:986:U:O4     | 2.71                     | 0.44              |
| 33:BA:1080:A:H4'  | 37:BE:20:VAL:HG13  | 1.99                     | 0.44              |
| 33:BA:1115:U:C4   | 33:BA:1116:U:O4    | 2.70                     | 0.44              |
| 33:BA:1144:G:C2'  | 33:BA:1145:A:H8    | 2.29                     | 0.44              |
| 33:BA:1173:U:O5'  | 33:BA:1173:U:C6    | 2.65                     | 0.44              |
| 33:BA:1282:C:C6   | 33:BA:1283:U:H5    | 2.35                     | 0.44              |
| 33:BA:1319:A:H5'' | 33:BA:1319:A:C8    | 2.43                     | 0.44              |
| 33:BA:1346:A:N3   | 33:BA:1348:U:C5    | 2.86                     | 0.44              |
| 33:BA:1354:U:H2'  | 33:BA:1355:G:O4'   | 2.18                     | 0.44              |
| 33:BA:1503:A:H2   | 33:BA:1531:A:N3    | 2.15                     | 0.44              |
| 33:BA:1532:U:C4   | 33:BA:1534:A:OP2   | 2.71                     | 0.44              |
| 34:BB:153:MET:HG2 | 34:BB:155:GLY:H    | 1.83                     | 0.44              |
| 37:BE:95:MET:CE   | 37:BE:143:LEU:HD21 | 2.48                     | 0.44              |
| 37:BE:110:MET:HG2 | 37:BE:139:THR:HG21 | 1.99                     | 0.44              |
| 37:BE:152:VAL:HA  | 37:BE:155:LYS:HE2  | 1.99                     | 0.44              |
| 38:BF:35:LYS:O    | 38:BF:64:VAL:HG12  | 2.17                     | 0.44              |
| 39:BG:12:LEU:HA   | 39:BG:13:PRO:HD3   | 1.76                     | 0.44              |
| 40:BH:17:GLN:NE2  | 40:BH:69:ALA:HB1   | 2.31                     | 0.44              |
| 40:BH:113:ARG:HG2 | 40:BH:113:ARG:O    | 2.16                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:BL:66:ILE:HG21 | 44:BL:71:HIS:CB   | 2.48                     | 0.44              |
| 46:BN:20:PHE:CE1  | 46:BN:51:PRO:HG2  | 2.43                     | 0.44              |
| 46:BN:51:PRO:O    | 46:BN:52:ARG:HB2  | 2.18                     | 0.44              |
| 46:BN:62:ARG:NH1  | 46:BN:69:PRO:HD3  | 2.33                     | 0.44              |
| 5:C4:17:VAL:HG23  | 5:C4:23:ILE:CG2   | 2.47                     | 0.44              |
| 7:CA:13:G:H4'     | 7:CA:15:A:H2'     | 1.99                     | 0.44              |
| 7:CA:81:G:C4      | 7:CA:82:U:C6      | 3.06                     | 0.44              |
| 8:CB:58:G:C4      | 8:CB:59:U:C5      | 3.06                     | 0.44              |
| 8:CB:78:U:H2'     | 8:CB:79:C:H6      | 1.78                     | 0.44              |
| 8:CB:80:G:H5'     | 8:CB:346:A:H1'    | 1.99                     | 0.44              |
| 8:CB:123:G:N2     | 8:CB:129:C:C2     | 2.85                     | 0.44              |
| 8:CB:260:G:C5     | 8:CB:261:G:C8     | 3.05                     | 0.44              |
| 8:CB:460:A:C2     | 8:CB:470:A:C5     | 3.06                     | 0.44              |
| 8:CB:538:A:N1     | 8:CB:556:A:N7     | 2.65                     | 0.44              |
| 8:CB:604:G:C6     | 8:CB:625:G:C2     | 3.05                     | 0.44              |
| 8:CB:841:G:N1     | 8:CB:938:G:C6     | 2.86                     | 0.44              |
| 8:CB:871:U:H4'    | 19:CM:68:PHE:CD1  | 2.51                     | 0.44              |
| 8:CB:993:G:C2'    | 8:CB:994:C:H5'    | 2.47                     | 0.44              |
| 8:CB:1029:A:O2'   | 19:CM:118:LYS:HE3 | 2.17                     | 0.44              |
| 8:CB:1206:G:C6    | 8:CB:1207:C:C4    | 3.05                     | 0.44              |
| 8:CB:1221:C:O2'   | 8:CB:1222:U:H5'   | 2.17                     | 0.44              |
| 8:CB:1258:U:C4'   | 11:CE:79:ARG:HD3  | 2.47                     | 0.44              |
| 8:CB:1372:U:O2'   | 8:CB:2212:A:C8    | 2.70                     | 0.44              |
| 8:CB:1405:U:O2'   | 8:CB:1406:U:H5'   | 2.18                     | 0.44              |
| 8:CB:1434:A:N6    | 8:CB:1558:C:H42   | 2.15                     | 0.44              |
| 8:CB:1434:A:OP1   | 8:CB:1434:A:H4'   | 2.17                     | 0.44              |
| 8:CB:1483:G:H5''  | 8:CB:1483:G:C8    | 2.52                     | 0.44              |
| 8:CB:1799:G:H4'   | 8:CB:1800:C:H6    | 1.82                     | 0.44              |
| 8:CB:1807:G:C6    | 8:CB:1809:A:OP2   | 2.71                     | 0.44              |
| 8:CB:1933:G:H2'   | 8:CB:1934:C:C5'   | 2.47                     | 0.44              |
| 8:CB:1973:G:C2    | 8:CB:1974:C:C2    | 3.05                     | 0.44              |
| 8:CB:1988:G:C8    | 8:CB:1988:G:C3'   | 3.00                     | 0.44              |
| 8:CB:2010:G:C8    | 8:CB:2010:G:C3'   | 3.01                     | 0.44              |
| 8:CB:2138:G:N2    | 8:CB:2139:U:H1'   | 2.32                     | 0.44              |
| 8:CB:2285:C:O2    | 8:CB:2288:A:C8    | 2.70                     | 0.44              |
| 8:CB:2343:U:H6    | 8:CB:2343:U:H5''  | 1.82                     | 0.44              |
| 8:CB:2483:C:H2'   | 8:CB:2484:G:O5'   | 2.17                     | 0.44              |
| 8:CB:2685:G:OP1   | 22:CP:62:LYS:NZ   | 2.48                     | 0.44              |
| 8:CB:2706:A:H2'   | 8:CB:2707:U:H5''  | 1.98                     | 0.44              |
| 8:CB:2734:A:H2'   | 8:CB:2735:G:C5'   | 2.39                     | 0.44              |
| 8:CB:2743:U:H3'   | 8:CB:2744:G:H5''  | 2.00                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:2761:A:H8     | 8:CB:2761:A:H5'   | 1.81                     | 0.44              |
| 9:CC:121:ALA:O     | 9:CC:123:ILE:HD12 | 2.17                     | 0.44              |
| 11:CE:5:LEU:O      | 11:CE:6:LYS:CB    | 2.65                     | 0.44              |
| 11:CE:24:ASN:CG    | 11:CE:107:SER:HB3 | 2.37                     | 0.44              |
| 11:CE:138:LEU:O    | 11:CE:139:LYS:C   | 2.56                     | 0.44              |
| 13:CG:120:ILE:HG12 | 13:CG:134:GLY:CA  | 2.48                     | 0.44              |
| 14:CH:99:ILE:HA    | 14:CH:102:ALA:HB3 | 2.00                     | 0.44              |
| 16:CJ:14:ASP:OD2   | 16:CJ:52:ASP:OD1  | 2.35                     | 0.44              |
| 18:CL:42:SER:C     | 18:CL:44:GLY:N    | 2.70                     | 0.44              |
| 19:CM:4:PRO:HG2    | 19:CM:43:ALA:C    | 2.37                     | 0.44              |
| 19:CM:108:VAL:O    | 19:CM:112:LEU:CG  | 2.55                     | 0.44              |
| 19:CM:117:PHE:CD1  | 19:CM:124:LEU:CD2 | 2.95                     | 0.44              |
| 23:CQ:60:TRP:O     | 23:CQ:64:ILE:HG13 | 2.18                     | 0.44              |
| 24:CR:18:GLN:HG2   | 24:CR:99:THR:HB   | 1.98                     | 0.44              |
| 26:CT:30:ILE:CG2   | 26:CT:32:LEU:HD11 | 2.46                     | 0.44              |
| 26:CT:60:THR:HB    | 26:CT:81:LYS:CE   | 2.48                     | 0.44              |
| 26:CT:67:VAL:CG1   | 26:CT:68:LYS:N    | 2.80                     | 0.44              |
| 29:CW:36:ILE:CG2   | 29:CW:68:PHE:HB3  | 2.48                     | 0.44              |
| 29:CW:66:VAL:CG2   | 29:CW:67:LYS:H    | 2.26                     | 0.44              |
| 31:CY:2:LYS:NZ     | 31:CY:37:ARG:HG3  | 2.32                     | 0.44              |
| 31:CY:18:LYS:O     | 31:CY:22:THR:HG23 | 2.18                     | 0.44              |
| 32:CZ:4:ASP:OD1    | 32:CZ:46:GLY:O    | 2.36                     | 0.44              |
| 32:CZ:48:GLN:C     | 32:CZ:49:ARG:O    | 2.52                     | 0.44              |
| 33:DA:31:G:O6      | 33:DA:306:A:H4'   | 2.17                     | 0.44              |
| 33:DA:237:G:H2'    | 33:DA:238:A:N7    | 2.32                     | 0.44              |
| 33:DA:323:U:H4'    | 52:DT:16:ALA:HB3  | 1.96                     | 0.44              |
| 33:DA:361:G:H2'    | 33:DA:362:G:H5'   | 2.00                     | 0.44              |
| 33:DA:482:A:H3'    | 33:DA:483:C:C5    | 2.52                     | 0.44              |
| 33:DA:805:C:C3'    | 33:DA:806:C:H5''  | 2.46                     | 0.44              |
| 33:DA:826:C:H4'    | 40:DH:12:ARG:HE   | 1.81                     | 0.44              |
| 33:DA:878:A:H2'    | 33:DA:879:C:C5'   | 2.48                     | 0.44              |
| 33:DA:893:C:C5     | 33:DA:894:G:N7    | 2.86                     | 0.44              |
| 33:DA:947:G:H5''   | 45:DM:106:ARG:CB  | 2.31                     | 0.44              |
| 33:DA:1078:U:H6    | 33:DA:1078:U:O5'  | 2.01                     | 0.44              |
| 33:DA:1139:G:H5''  | 33:DA:1139:G:H2'  | 1.59                     | 0.44              |
| 33:DA:1166:G:N1    | 33:DA:1169:A:OP2  | 2.48                     | 0.44              |
| 33:DA:1185:G:C6    | 33:DA:1186:G:C5   | 3.05                     | 0.44              |
| 33:DA:1350:A:OP2   | 41:DI:119:LYS:CD  | 2.65                     | 0.44              |
| 33:DA:1502:A:N3    | 33:DA:1504:G:O6   | 2.50                     | 0.44              |
| 35:DC:21:TRP:HA    | 42:DJ:95:GLY:HA2  | 2.00                     | 0.44              |
| 35:DC:58:ARG:HA    | 35:DC:64:ARG:H    | 1.82                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DD:160:LEU:O   | 36:DD:160:LEU:HD22 | 2.18                     | 0.44              |
| 37:DE:40:ASP:O    | 37:DE:41:GLY:C     | 2.54                     | 0.44              |
| 37:DE:87:VAL:O    | 37:DE:88:HIS:HB2   | 2.18                     | 0.44              |
| 37:DE:114:LEU:CD2 | 37:DE:119:VAL:HG21 | 2.46                     | 0.44              |
| 38:DF:84:VAL:HG22 | 38:DF:85:ILE:O     | 2.17                     | 0.44              |
| 45:DM:34:ALA:HB2  | 45:DM:40:GLU:HG2   | 1.98                     | 0.44              |
| 46:DN:25:GLU:C    | 46:DN:27:LYS:N     | 2.69                     | 0.44              |
| 49:DQ:9:GLY:CA    | 49:DQ:24:ILE:HG13  | 2.46                     | 0.44              |
| 51:DS:27:LYS:HG3  | 51:DS:28:LYS:H     | 1.81                     | 0.44              |
| 52:DT:19:HIS:O    | 52:DT:20:ASN:C     | 2.56                     | 0.44              |
| 4:A3:29:ARG:NH1   | 4:A3:29:ARG:O      | 2.50                     | 0.44              |
| 7:AA:60:C:H2'     | 7:AA:61:G:C8       | 2.53                     | 0.44              |
| 7:AA:78:A:C4      | 7:AA:79:G:C8       | 3.06                     | 0.44              |
| 8:AB:6:A:C2'      | 16:AJ:135:GLN:HG3  | 2.48                     | 0.44              |
| 8:AB:45:G:H4'     | 8:AB:46:G:O4'      | 2.18                     | 0.44              |
| 8:AB:221:A:C2     | 8:AB:233:A:C5      | 3.06                     | 0.44              |
| 8:AB:263:G:C2     | 8:AB:264:C:C2      | 3.05                     | 0.44              |
| 8:AB:279:A:H61    | 8:AB:361:G:H1'     | 1.81                     | 0.44              |
| 8:AB:309:A:H2'    | 8:AB:329:G:O2'     | 2.17                     | 0.44              |
| 8:AB:380:G:O2'    | 32:AZ:13:THR:OG1   | 2.18                     | 0.44              |
| 8:AB:384:A:C2'    | 8:AB:385:C:H5'     | 2.47                     | 0.44              |
| 8:AB:445:C:O2'    | 8:AB:449:A:N3      | 2.51                     | 0.44              |
| 8:AB:671:C:N3     | 8:AB:672:C:C5      | 2.85                     | 0.44              |
| 8:AB:800:A:H4'    | 8:AB:801:G:H5'     | 1.95                     | 0.44              |
| 8:AB:811:U:O2     | 8:AB:1251:C:C5     | 2.70                     | 0.44              |
| 8:AB:812:C:H2'    | 8:AB:813:U:C5'     | 2.47                     | 0.44              |
| 8:AB:866:A:C8     | 8:AB:866:A:H3'     | 2.53                     | 0.44              |
| 8:AB:919:U:O4     | 8:AB:920:A:C6      | 2.71                     | 0.44              |
| 8:AB:978:G:N2     | 8:AB:986:C:H1'     | 2.33                     | 0.44              |
| 8:AB:1022:G:N2    | 8:AB:1142:A:C2     | 2.85                     | 0.44              |
| 8:AB:1263:U:C4    | 8:AB:1264:A:C6     | 3.06                     | 0.44              |
| 8:AB:1323:C:P     | 25:AS:84:ARG:HH12  | 2.40                     | 0.44              |
| 8:AB:1651:G:O6    | 8:AB:1652:A:C6     | 2.71                     | 0.44              |
| 8:AB:1688:U:O2    | 8:AB:1700:A:H8     | 1.99                     | 0.44              |
| 8:AB:1817:G:P     | 9:AC:62:ARG:HH22   | 2.40                     | 0.44              |
| 8:AB:2360:G:H8    | 8:AB:2360:G:H3'    | 1.82                     | 0.44              |
| 8:AB:2415:G:C4    | 8:AB:2416:C:C6     | 3.06                     | 0.44              |
| 8:AB:2516:A:H2'   | 8:AB:2516:A:N3     | 2.32                     | 0.44              |
| 8:AB:2719:G:C8    | 8:AB:2719:G:C5'    | 3.00                     | 0.44              |
| 8:AB:2747:G:C6    | 8:AB:2754:U:H2'    | 2.52                     | 0.44              |
| 8:AB:2748:A:O2'   | 13:AG:65:GLY:HA3   | 2.17                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2760:C:O2    | 8:AB:2760:C:C2'   | 2.66                     | 0.44              |
| 9:AC:35:LYS:HE3   | 9:AC:35:LYS:HB2   | 1.69                     | 0.44              |
| 9:AC:60:ALA:O     | 9:AC:61:TYR:O     | 2.36                     | 0.44              |
| 9:AC:90:ILE:CG2   | 9:AC:91:ALA:N     | 2.80                     | 0.44              |
| 9:AC:178:GLY:O    | 9:AC:179:GLU:O    | 2.36                     | 0.44              |
| 10:AD:34:VAL:CG2  | 10:AD:35:THR:N    | 2.74                     | 0.44              |
| 11:AE:163:ASN:HB2 | 11:AE:166:LYS:CG  | 2.48                     | 0.44              |
| 12:AF:165:GLY:HA2 | 12:AF:168:LEU:HB2 | 2.00                     | 0.44              |
| 16:AJ:43:GLU:C    | 23:AQ:63:ARG:HH22 | 2.21                     | 0.44              |
| 18:AL:39:LYS:C    | 18:AL:41:ARG:H    | 2.21                     | 0.44              |
| 20:AN:8:ARG:HH11  | 20:AN:43:GLU:HG3  | 1.83                     | 0.44              |
| 22:AP:50:ARG:CZ   | 22:AP:50:ARG:HB2  | 2.48                     | 0.44              |
| 23:AQ:14:LYS:O    | 23:AQ:15:LYS:C    | 2.56                     | 0.44              |
| 24:AR:2:TYR:HB2   | 24:AR:45:GLU:HB2  | 1.98                     | 0.44              |
| 29:AW:35:ILE:HG12 | 29:AW:70:VAL:HB   | 1.99                     | 0.44              |
| 33:BA:33:A:H2'    | 33:BA:34:C:H6     | 1.82                     | 0.44              |
| 33:BA:93:U:H5''   | 33:BA:94:G:OP2    | 2.18                     | 0.44              |
| 33:BA:136:C:O5'   | 33:BA:136:C:H6    | 2.01                     | 0.44              |
| 33:BA:318:G:C6    | 33:BA:319:G:N7    | 2.85                     | 0.44              |
| 33:BA:370:C:N3    | 33:BA:371:A:N7    | 2.65                     | 0.44              |
| 33:BA:399:G:H5''  | 33:BA:400:C:P     | 2.58                     | 0.44              |
| 33:BA:492:C:C5    | 33:BA:493:A:H2    | 2.35                     | 0.44              |
| 33:BA:544:G:C4    | 33:BA:545:C:C5    | 3.04                     | 0.44              |
| 33:BA:598:U:H4'   | 40:BH:85:TYR:CB   | 2.47                     | 0.44              |
| 33:BA:787:A:O2'   | 33:BA:788:U:H5'   | 2.17                     | 0.44              |
| 33:BA:793:U:H5'   | 33:BA:794:A:C5'   | 2.48                     | 0.44              |
| 33:BA:865:A:N3    | 33:BA:918:A:C1'   | 2.80                     | 0.44              |
| 33:BA:966:G:H8    | 33:BA:966:G:O5'   | 2.00                     | 0.44              |
| 33:BA:1029:U:C6   | 33:BA:1029:U:C3'  | 3.00                     | 0.44              |
| 33:BA:1070:U:O2   | 33:BA:1070:U:H2'  | 2.17                     | 0.44              |
| 33:BA:1190:G:H5'' | 35:BC:175:HIS:NE2 | 2.32                     | 0.44              |
| 33:BA:1319:A:C5'  | 33:BA:1320:C:OP1  | 2.65                     | 0.44              |
| 33:BA:1478:U:C2   | 33:BA:1479:C:C5   | 3.06                     | 0.44              |
| 34:BB:14:HIS:O    | 34:BB:16:GLY:N    | 2.51                     | 0.44              |
| 34:BB:108:GLN:OE1 | 34:BB:108:GLN:HA  | 2.18                     | 0.44              |
| 36:BD:68:GLU:C    | 36:BD:70:GLN:H    | 2.21                     | 0.44              |
| 37:BE:104:ILE:O   | 37:BE:111:ARG:NH2 | 2.51                     | 0.44              |
| 37:BE:151:MET:C   | 37:BE:155:LYS:HB2 | 2.38                     | 0.44              |
| 39:BG:130:LYS:CG  | 39:BG:131:GLY:H   | 2.04                     | 0.44              |
| 43:BK:21:HIS:HB2  | 43:BK:32:THR:HG22 | 1.99                     | 0.44              |
| 45:BM:63:VAL:HG12 | 45:BM:67:ASP:HB3  | 2.00                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 47:BO:56:LEU:O    | 47:BO:59:VAL:HG22 | 2.17                     | 0.44              |
| 48:BP:66:THR:HG22 | 48:BP:67:ILE:N    | 2.32                     | 0.44              |
| 50:BR:58:ILE:O    | 50:BR:62:ARG:HG3  | 2.18                     | 0.44              |
| 50:BR:68:PRO:O    | 50:BR:69:TYR:C    | 2.56                     | 0.44              |
| 52:BT:52:GLU:HG2  | 52:BT:53:MET:N    | 2.32                     | 0.44              |
| 1:C0:52:LYS:HE2   | 1:C0:53:VAL:CG1   | 2.48                     | 0.44              |
| 3:C2:18:PHE:HA    | 3:C2:44:VAL:HG11  | 1.99                     | 0.44              |
| 7:CA:29:A:C8      | 7:CA:29:A:OP1     | 2.71                     | 0.44              |
| 8:CB:18:U:C6      | 8:CB:19:A:N7      | 2.85                     | 0.44              |
| 8:CB:193:U:H2'    | 8:CB:194:G:C8     | 2.50                     | 0.44              |
| 8:CB:282:A:H8     | 8:CB:282:A:O5'    | 2.01                     | 0.44              |
| 8:CB:373:U:H2'    | 8:CB:373:U:O2     | 2.16                     | 0.44              |
| 8:CB:443:A:C6     | 11:CE:40:ARG:NH1  | 2.86                     | 0.44              |
| 8:CB:460:A:C8     | 8:CB:461:C:C6     | 3.06                     | 0.44              |
| 8:CB:583:G:C2     | 8:CB:584:C:C5     | 3.06                     | 0.44              |
| 8:CB:598:U:H2'    | 8:CB:599:A:O4'    | 2.18                     | 0.44              |
| 8:CB:602:A:O4'    | 8:CB:604:G:O2'    | 2.33                     | 0.44              |
| 8:CB:672:C:O2     | 8:CB:673:C:C6     | 2.71                     | 0.44              |
| 8:CB:713:G:H8     | 8:CB:713:G:O5'    | 2.00                     | 0.44              |
| 8:CB:715:A:N6     | 8:CB:716:A:C6     | 2.86                     | 0.44              |
| 8:CB:795:C:N3     | 8:CB:796:C:N4     | 2.65                     | 0.44              |
| 8:CB:947:A:C6     | 8:CB:948:C:N4     | 2.85                     | 0.44              |
| 8:CB:974:G:C6     | 8:CB:989:G:C5     | 3.05                     | 0.44              |
| 8:CB:994:C:H2'    | 8:CB:994:C:O2     | 2.17                     | 0.44              |
| 8:CB:1000:A:C4    | 8:CB:1001:A:C8    | 3.06                     | 0.44              |
| 8:CB:1067:A:H2'   | 8:CB:1068:G:C8    | 2.53                     | 0.44              |
| 8:CB:1104:C:H2'   | 8:CB:1105:U:C5    | 2.51                     | 0.44              |
| 8:CB:1238:G:N3    | 8:CB:1239:G:C8    | 2.85                     | 0.44              |
| 8:CB:1296:G:C8    | 8:CB:1296:G:H3'   | 2.52                     | 0.44              |
| 8:CB:1418:G:H2'   | 8:CB:1579:A:H61   | 1.82                     | 0.44              |
| 8:CB:1435:G:O2'   | 8:CB:1436:G:H5'   | 2.17                     | 0.44              |
| 8:CB:1608:A:C5    | 8:CB:1611:C:C4    | 3.05                     | 0.44              |
| 8:CB:1611:C:C2    | 8:CB:1612:C:H5    | 2.35                     | 0.44              |
| 8:CB:1613:G:C4    | 8:CB:1617:C:N3    | 2.85                     | 0.44              |
| 8:CB:1694:C:C5'   | 8:CB:1694:C:C6    | 3.00                     | 0.44              |
| 8:CB:1882:U:H2'   | 8:CB:1883:U:H6    | 1.83                     | 0.44              |
| 8:CB:1989:G:N7    | 8:CB:1990:C:C5    | 2.85                     | 0.44              |
| 8:CB:2071:A:H2'   | 8:CB:2072:C:O4'   | 2.18                     | 0.44              |
| 8:CB:2180:U:O5'   | 8:CB:2180:U:H6    | 1.99                     | 0.44              |
| 8:CB:2570:G:C2    | 8:CB:2571:U:C6    | 3.06                     | 0.44              |
| 8:CB:2590:A:O2'   | 8:CB:2591:C:H5'   | 2.18                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2635:A:C2'   | 8:CB:2636:C:O5'   | 2.65                     | 0.44              |
| 8:CB:2636:C:H4'   | 10:CD:80:TRP:CZ2  | 2.53                     | 0.44              |
| 8:CB:2702:G:O2'   | 8:CB:2703:C:H5'   | 2.18                     | 0.44              |
| 55:CB:5460:HOH:O  | 10:CD:135:GLY:CA  | 2.45                     | 0.44              |
| 9:CC:106:PRO:HD2  | 9:CC:109:LEU:CD2  | 2.47                     | 0.44              |
| 9:CC:262:THR:O    | 9:CC:263:ASP:CB   | 2.65                     | 0.44              |
| 11:CE:32:VAL:O    | 11:CE:35:TYR:HB3  | 2.16                     | 0.44              |
| 11:CE:41:GLN:HB2  | 11:CE:42:GLY:H    | 1.66                     | 0.44              |
| 11:CE:91:ASP:O    | 11:CE:92:HIS:HB2  | 2.17                     | 0.44              |
| 11:CE:199:MET:CG  | 11:CE:200:LEU:H   | 2.23                     | 0.44              |
| 12:CF:65:LEU:C    | 12:CF:67:THR:H    | 2.20                     | 0.44              |
| 12:CF:78:ILE:HG22 | 12:CF:80:GLN:H    | 1.82                     | 0.44              |
| 13:CG:26:LYS:C    | 13:CG:78:VAL:HG21 | 2.38                     | 0.44              |
| 13:CG:97:VAL:HG23 | 13:CG:124:CYS:SG  | 2.58                     | 0.44              |
| 17:CK:39:ILE:HG23 | 17:CK:40:LYS:N    | 2.31                     | 0.44              |
| 19:CM:73:ILE:HD11 | 19:CM:92:TRP:CB   | 2.48                     | 0.44              |
| 19:CM:76:LYS:HA   | 19:CM:77:PRO:HD3  | 1.74                     | 0.44              |
| 22:CP:1:SER:OG    | 22:CP:6:GLN:NE2   | 2.39                     | 0.44              |
| 22:CP:52:ARG:HG2  | 22:CP:60:VAL:CG1  | 2.47                     | 0.44              |
| 23:CQ:66:ALA:HA   | 23:CQ:69:ARG:HH11 | 1.83                     | 0.44              |
| 24:CR:40:MET:O    | 24:CR:54:VAL:HG22 | 2.18                     | 0.44              |
| 25:CS:76:VAL:HG12 | 25:CS:103:ILE:CD1 | 2.46                     | 0.44              |
| 29:CW:79:ILE:HD12 | 29:CW:79:ILE:C    | 2.37                     | 0.44              |
| 32:CZ:5:ILE:O     | 32:CZ:6:HIS:O     | 2.35                     | 0.44              |
| 33:DA:86:G:H1'    | 33:DA:87:C:C6     | 2.53                     | 0.44              |
| 33:DA:369:G:N1    | 33:DA:370:C:C4    | 2.86                     | 0.44              |
| 33:DA:445:G:C2    | 33:DA:446:G:N7    | 2.85                     | 0.44              |
| 33:DA:558:G:H5''  | 33:DA:559:A:O5'   | 2.18                     | 0.44              |
| 33:DA:565:U:H3'   | 33:DA:566:G:H2'   | 1.98                     | 0.44              |
| 33:DA:581:G:H1    | 33:DA:758:C:H3'   | 1.81                     | 0.44              |
| 33:DA:654:G:O6    | 33:DA:655:A:N6    | 2.50                     | 0.44              |
| 33:DA:714:G:C6    | 33:DA:715:A:N6    | 2.86                     | 0.44              |
| 33:DA:722:G:C6    | 33:DA:724:G:N9    | 2.86                     | 0.44              |
| 33:DA:818:G:H3'   | 33:DA:819:A:H5''  | 1.99                     | 0.44              |
| 33:DA:891:U:H6    | 33:DA:891:U:C5'   | 2.21                     | 0.44              |
| 33:DA:1020:G:C2   | 33:DA:1021:A:C8   | 3.05                     | 0.44              |
| 33:DA:1058:G:C5   | 33:DA:1059:C:N3   | 2.85                     | 0.44              |
| 33:DA:1311:A:N7   | 51:DS:1:PRO:HD3   | 2.33                     | 0.44              |
| 33:DA:1331:G:O2'  | 33:DA:1332:A:H8   | 2.01                     | 0.44              |
| 33:DA:1480:A:C6   | 33:DA:1481:U:C4   | 3.06                     | 0.44              |
| 34:DB:87:ASP:O    | 34:DB:88:GLN:C    | 2.55                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:DB:100:LEU:HD23 | 34:DB:174:GLU:O   | 2.17                     | 0.44              |
| 35:DC:4:VAL:HG22   | 35:DC:5:HIS:H     | 1.81                     | 0.44              |
| 35:DC:36:PHE:HD2   | 46:DN:65:GLN:OE1  | 2.00                     | 0.44              |
| 35:DC:42:LEU:HD21  | 35:DC:86:LEU:HD22 | 1.99                     | 0.44              |
| 36:DD:14:GLU:CG    | 36:DD:59:LYS:HB2  | 2.47                     | 0.44              |
| 38:DF:88:MET:O     | 38:DF:89:VAL:HB   | 2.16                     | 0.44              |
| 41:DI:5:TYR:CG     | 41:DI:88:GLU:CD   | 2.91                     | 0.44              |
| 41:DI:54:VAL:HG12  | 41:DI:93:LEU:CD2  | 2.48                     | 0.44              |
| 42:DJ:57:VAL:HG13  | 42:DJ:58:ASN:CG   | 2.38                     | 0.44              |
| 44:DL:109:ARG:NH2  | 44:DL:112:ALA:N   | 2.61                     | 0.44              |
| 50:DR:54:LEU:O     | 50:DR:55:ALA:C    | 2.56                     | 0.44              |
| 3:A2:36:ALA:O      | 3:A2:38:GLY:O     | 2.36                     | 0.44              |
| 4:A3:23:HIS:CD2    | 4:A3:23:HIS:H     | 2.36                     | 0.44              |
| 5:A4:30:GLU:CD     | 5:A4:32:LYS:HB2   | 2.37                     | 0.44              |
| 7:AA:47:C:C6       | 7:AA:47:C:O5'     | 2.68                     | 0.44              |
| 8:AB:103:A:C8      | 8:AB:104:A:C8     | 3.06                     | 0.44              |
| 8:AB:292:U:N3      | 8:AB:293:U:C5     | 2.86                     | 0.44              |
| 8:AB:307:G:C5      | 8:AB:309:A:OP2    | 2.71                     | 0.44              |
| 8:AB:339:U:H3'     | 8:AB:339:U:C6     | 2.53                     | 0.44              |
| 8:AB:339:U:H3'     | 8:AB:339:U:H6     | 1.81                     | 0.44              |
| 8:AB:559:G:H1'     | 23:AQ:55:GLN:HE22 | 1.79                     | 0.44              |
| 8:AB:592:A:C6      | 8:AB:593:U:O4     | 2.70                     | 0.44              |
| 8:AB:631:A:O5'     | 8:AB:631:A:C8     | 2.66                     | 0.44              |
| 8:AB:634:C:C2      | 8:AB:635:C:C5     | 3.05                     | 0.44              |
| 8:AB:696:G:H2'     | 8:AB:697:G:C8     | 2.52                     | 0.44              |
| 8:AB:715:A:C6      | 8:AB:716:A:C6     | 3.05                     | 0.44              |
| 8:AB:855:G:N3      | 29:AW:23:LYS:CD   | 2.80                     | 0.44              |
| 8:AB:1221:C:O2'    | 8:AB:1222:U:H5'   | 2.17                     | 0.44              |
| 8:AB:1313:U:O2     | 8:AB:1313:U:C2'   | 2.64                     | 0.44              |
| 8:AB:1332:G:N7     | 8:AB:1609:A:C4    | 2.86                     | 0.44              |
| 8:AB:1335:C:H3'    | 8:AB:1335:C:C6    | 2.53                     | 0.44              |
| 8:AB:1348:C:H5'    | 8:AB:1349:C:H5    | 1.83                     | 0.44              |
| 8:AB:1675:C:O2     | 10:AD:134:HIS:CD2 | 2.71                     | 0.44              |
| 8:AB:1707:G:N1     | 8:AB:1708:C:C2    | 2.86                     | 0.44              |
| 8:AB:1933:G:H2'    | 8:AB:1934:C:O4'   | 2.18                     | 0.44              |
| 8:AB:1959:G:H3'    | 8:AB:1959:G:C8    | 2.52                     | 0.44              |
| 8:AB:2025:C:H3'    | 8:AB:2026:U:C6    | 2.52                     | 0.44              |
| 8:AB:2030:A:H4'    | 8:AB:2031:A:C5'   | 2.48                     | 0.44              |
| 8:AB:2059:A:C5     | 8:AB:2503:A:C2    | 3.06                     | 0.44              |
| 8:AB:2077:A:H2     | 8:AB:2434:A:H1'   | 1.83                     | 0.44              |
| 8:AB:2087:G:C2     | 8:AB:2088:A:C4    | 3.06                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2088:A:C2    | 8:AB:2232:C:C2    | 3.05                     | 0.44              |
| 8:AB:2107:G:C2    | 8:AB:2108:A:C8    | 3.06                     | 0.44              |
| 8:AB:2259:U:C6    | 8:AB:2427:C:C4    | 3.04                     | 0.44              |
| 8:AB:2333:A:H3'   | 21:AO:7:ARG:CZ    | 2.47                     | 0.44              |
| 8:AB:2478:A:C8    | 8:AB:2478:A:H5'   | 2.52                     | 0.44              |
| 8:AB:2674:G:H2'   | 8:AB:2675:A:O5'   | 2.18                     | 0.44              |
| 8:AB:2684:U:C3'   | 8:AB:2684:U:C6    | 3.01                     | 0.44              |
| 8:AB:2700:A:H2    | 8:AB:2701:U:H3    | 1.63                     | 0.44              |
| 9:AC:34:GLU:OE1   | 9:AC:35:LYS:N     | 2.51                     | 0.44              |
| 9:AC:161:VAL:N    | 9:AC:193:GLU:OE1  | 2.37                     | 0.44              |
| 10:AD:98:VAL:HA   | 10:AD:101:PHE:HZ  | 1.70                     | 0.44              |
| 11:AE:6:LYS:HB3   | 11:AE:11:ALA:HA   | 1.99                     | 0.44              |
| 11:AE:16:GLU:OE1  | 11:AE:16:GLU:HA   | 2.17                     | 0.44              |
| 11:AE:103:GLY:O   | 11:AE:105:LEU:N   | 2.50                     | 0.44              |
| 12:AF:27:VAL:O    | 12:AF:27:VAL:HG12 | 2.17                     | 0.44              |
| 13:AG:97:VAL:C    | 13:AG:98:LYS:HD2  | 2.38                     | 0.44              |
| 13:AG:100:ASN:ND2 | 13:AG:118:ALA:HA  | 2.32                     | 0.44              |
| 13:AG:163:TYR:CD2 | 13:AG:166:GLU:HB2 | 2.53                     | 0.44              |
| 16:AJ:56:VAL:O    | 16:AJ:57:LEU:HD13 | 2.18                     | 0.44              |
| 16:AJ:72:LYS:HE3  | 16:AJ:74:TYR:OH   | 2.18                     | 0.44              |
| 16:AJ:125:TYR:CZ  | 16:AJ:134:ALA:HB2 | 2.52                     | 0.44              |
| 18:AL:58:TYR:HA   | 18:AL:61:LEU:HD13 | 1.99                     | 0.44              |
| 19:AM:5:LYS:O     | 19:AM:5:LYS:CG    | 2.66                     | 0.44              |
| 19:AM:7:THR:HB    | 19:AM:10:ARG:NH2  | 2.31                     | 0.44              |
| 22:AP:7:LEU:O     | 22:AP:10:GLU:N    | 2.51                     | 0.44              |
| 23:AQ:16:ILE:O    | 23:AQ:18:LYS:N    | 2.51                     | 0.44              |
| 26:AT:12:ARG:HB3  | 26:AT:13:ALA:H    | 1.55                     | 0.44              |
| 26:AT:27:SER:HB3  | 26:AT:29:THR:CG2  | 2.46                     | 0.44              |
| 26:AT:27:SER:C    | 26:AT:29:THR:H    | 2.21                     | 0.44              |
| 27:AU:71:ILE:HG23 | 27:AU:95:PHE:HZ   | 1.83                     | 0.44              |
| 32:AZ:3:LYS:HD2   | 32:AZ:6:HIS:HB3   | 2.00                     | 0.44              |
| 33:BA:112:G:N2    | 33:BA:330:C:N3    | 2.65                     | 0.44              |
| 33:BA:113:G:O4'   | 33:BA:354:G:H4'   | 2.17                     | 0.44              |
| 33:BA:161:A:C4    | 33:BA:162:A:C8    | 3.05                     | 0.44              |
| 33:BA:254:G:H5''  | 49:BQ:67:SER:HB2  | 1.99                     | 0.44              |
| 33:BA:303:A:H8    | 33:BA:303:A:O5'   | 2.01                     | 0.44              |
| 33:BA:361:G:H2'   | 33:BA:362:G:H5'   | 1.98                     | 0.44              |
| 33:BA:579:A:HO2'  | 33:BA:580:C:P     | 2.39                     | 0.44              |
| 33:BA:600:A:H4'   | 40:BH:119:GLY:O   | 2.18                     | 0.44              |
| 33:BA:644:U:C6    | 33:BA:644:U:C3'   | 3.01                     | 0.44              |
| 33:BA:663:A:N1    | 33:BA:743:A:C2    | 2.86                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:704:A:C4    | 33:BA:705:G:C8    | 3.06                     | 0.44              |
| 33:BA:706:A:H2'   | 43:BK:32:THR:HG21 | 2.00                     | 0.44              |
| 33:BA:756:C:C2    | 33:BA:757:U:C6    | 3.05                     | 0.44              |
| 33:BA:786:G:N3    | 33:BA:797:C:O2    | 2.51                     | 0.44              |
| 33:BA:974:A:OP2   | 46:BN:70:HIS:CB   | 2.66                     | 0.44              |
| 33:BA:1037:C:H3'  | 33:BA:1037:C:C6   | 2.52                     | 0.44              |
| 33:BA:1117:A:C6   | 33:BA:1184:G:C6   | 3.06                     | 0.44              |
| 33:BA:1142:G:H5'  | 33:BA:1143:G:OP2  | 2.18                     | 0.44              |
| 33:BA:1193:G:O2'  | 37:BE:26:GLY:HA3  | 2.18                     | 0.44              |
| 33:BA:1197:A:C2   | 33:BA:1198:G:N9   | 2.85                     | 0.44              |
| 33:BA:1211:U:H5'' | 33:BA:1213:A:H1'  | 2.00                     | 0.44              |
| 33:BA:1233:G:H5'  | 41:BI:118:ARG:NH2 | 2.32                     | 0.44              |
| 33:BA:1488:G:H2'  | 33:BA:1488:G:N3   | 2.32                     | 0.44              |
| 36:BD:36:ALA:HA   | 36:BD:41:GLY:HA3  | 2.00                     | 0.44              |
| 39:BG:94:ARG:HH11 | 39:BG:98:LEU:HD11 | 1.80                     | 0.44              |
| 41:BI:44:ARG:O    | 41:BI:47:VAL:HG13 | 2.17                     | 0.44              |
| 42:BJ:19:ASP:O    | 42:BJ:22:THR:HG22 | 2.17                     | 0.44              |
| 47:BO:49:HIS:O    | 47:BO:52:ARG:N    | 2.51                     | 0.44              |
| 53:BU:36:PHE:HA   | 53:BU:39:LYS:HD2  | 2.00                     | 0.44              |
| 1:C0:11:LYS:O     | 1:C0:12:ARG:C     | 2.56                     | 0.44              |
| 1:C0:21:LEU:HD22  | 25:CS:23:LEU:CB   | 2.38                     | 0.44              |
| 1:C0:31:LYS:NZ    | 1:C0:49:ARG:O     | 2.40                     | 0.44              |
| 2:C1:14:ALA:HA    | 2:C1:48:TYR:CE1   | 2.53                     | 0.44              |
| 3:C2:28:ARG:O     | 3:C2:30:VAL:N     | 2.50                     | 0.44              |
| 7:CA:61:G:H8      | 7:CA:61:G:O5'     | 2.01                     | 0.44              |
| 7:CA:66:A:C4      | 7:CA:108:A:N6     | 2.85                     | 0.44              |
| 7:CA:83:G:C5      | 7:CA:84:G:C8      | 3.05                     | 0.44              |
| 8:CB:66:C:C2'     | 8:CB:67:U:H5'     | 2.47                     | 0.44              |
| 8:CB:195:A:H2'    | 8:CB:198:C:H41    | 1.82                     | 0.44              |
| 8:CB:222:A:N7     | 8:CB:224:U:C4     | 2.86                     | 0.44              |
| 8:CB:245:G:C8     | 8:CB:245:G:C3'    | 3.01                     | 0.44              |
| 8:CB:265:A:H2'    | 8:CB:266:G:H1'    | 2.00                     | 0.44              |
| 8:CB:300:A:H1'    | 8:CB:319:G:O4'    | 2.17                     | 0.44              |
| 8:CB:303:G:C2     | 8:CB:304:U:O4'    | 2.71                     | 0.44              |
| 8:CB:329:G:OP1    | 8:CB:329:G:C8     | 2.61                     | 0.44              |
| 8:CB:393:C:H3'    | 8:CB:394:C:H5''   | 1.97                     | 0.44              |
| 8:CB:585:G:HO2'   | 11:CE:77:ILE:HD13 | 1.78                     | 0.44              |
| 8:CB:611:C:C2'    | 8:CB:612:G:H5'    | 2.48                     | 0.44              |
| 8:CB:692:C:H2'    | 8:CB:693:A:C8     | 2.52                     | 0.44              |
| 8:CB:699:A:H2'    | 8:CB:700:G:O5'    | 2.18                     | 0.44              |
| 8:CB:713:G:N2     | 8:CB:718:A:H2     | 2.10                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:738:G:H1      | 8:CB:758:C:H42     | 1.64                     | 0.44              |
| 8:CB:863:A:C8      | 8:CB:863:A:C5'     | 3.01                     | 0.44              |
| 8:CB:1076:C:O2     | 15:CI:91:LYS:HG2   | 2.18                     | 0.44              |
| 8:CB:1085:A:C2     | 8:CB:1086:A:N7     | 2.85                     | 0.44              |
| 8:CB:1299:G:O2'    | 8:CB:1640:A:N6     | 2.51                     | 0.44              |
| 8:CB:1338:G:O2'    | 8:CB:1339:G:H5'    | 2.18                     | 0.44              |
| 8:CB:1684:G:H1     | 8:CB:1704:C:H42    | 1.66                     | 0.44              |
| 8:CB:1933:G:C2'    | 8:CB:1934:C:H5'    | 2.46                     | 0.44              |
| 8:CB:2035:G:H5''   | 8:CB:2035:G:H8     | 1.83                     | 0.44              |
| 8:CB:2080:A:H2'    | 8:CB:2081:U:H6     | 1.82                     | 0.44              |
| 8:CB:2142:A:H2'    | 8:CB:2143:C:O4'    | 2.17                     | 0.44              |
| 8:CB:2230:G:O2'    | 8:CB:2231:U:H5'    | 2.18                     | 0.44              |
| 8:CB:2257:U:H3'    | 8:CB:2258:C:H5''   | 2.00                     | 0.44              |
| 8:CB:2270:A:H8     | 55:CB:5394:HOH:O   | 2.00                     | 0.44              |
| 8:CB:2446:G:C2     | 8:CB:2501:C:C4     | 3.06                     | 0.44              |
| 8:CB:2455:G:N2     | 8:CB:2498:C:C5     | 2.85                     | 0.44              |
| 8:CB:2466:C:H2'    | 8:CB:2467:C:H6     | 1.83                     | 0.44              |
| 8:CB:2512:C:H2'    | 8:CB:2513:A:O5'    | 2.17                     | 0.44              |
| 8:CB:2522:U:H1'    | 8:CB:2647:U:OP1    | 2.18                     | 0.44              |
| 8:CB:2536:G:C6     | 8:CB:2537:U:N3     | 2.86                     | 0.44              |
| 8:CB:2635:A:H2'    | 8:CB:2636:C:O5'    | 2.18                     | 0.44              |
| 9:CC:134:ILE:HA    | 9:CC:135:PRO:HD3   | 1.66                     | 0.44              |
| 9:CC:167:ASP:CG    | 9:CC:172:THR:HG23  | 2.38                     | 0.44              |
| 9:CC:261:ARG:HG2   | 9:CC:261:ARG:NH1   | 2.15                     | 0.44              |
| 10:CD:8:LYS:O      | 10:CD:9:VAL:O      | 2.35                     | 0.44              |
| 11:CE:134:LEU:HD22 | 11:CE:135:ALA:H    | 1.82                     | 0.44              |
| 11:CE:175:ILE:HD13 | 11:CE:175:ILE:HA   | 1.91                     | 0.44              |
| 11:CE:190:ALA:HB3  | 11:CE:193:VAL:HG13 | 1.99                     | 0.44              |
| 14:CH:55:GLU:O     | 14:CH:55:GLU:HG2   | 2.17                     | 0.44              |
| 16:CJ:18:VAL:O     | 16:CJ:56:VAL:HA    | 2.18                     | 0.44              |
| 16:CJ:58:ASN:HA    | 16:CJ:126:ALA:HA   | 1.99                     | 0.44              |
| 16:CJ:84:ILE:HG22  | 16:CJ:85:LYS:N     | 2.32                     | 0.44              |
| 17:CK:86:LEU:HB2   | 17:CK:95:ILE:HG22  | 2.00                     | 0.44              |
| 20:CN:62:ASN:O     | 20:CN:66:ALA:HB2   | 2.17                     | 0.44              |
| 22:CP:71:ARG:HH21  | 22:CP:102:ARG:HB3  | 1.83                     | 0.44              |
| 22:CP:79:VAL:C     | 22:CP:81:ASP:N     | 2.71                     | 0.44              |
| 24:CR:26:ASP:OD1   | 24:CR:26:ASP:N     | 2.48                     | 0.44              |
| 27:CU:40:LEU:O     | 27:CU:41:VAL:CB    | 2.64                     | 0.44              |
| 27:CU:51:LEU:C     | 27:CU:53:GLN:N     | 2.69                     | 0.44              |
| 28:CV:14:LYS:O     | 28:CV:15:GLY:C     | 2.56                     | 0.44              |
| 29:CW:45:HIS:CD2   | 29:CW:45:HIS:C     | 2.90                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:47:C:C5     | 33:DA:365:U:H2'    | 2.53                     | 0.44              |
| 33:DA:225:C:C5    | 33:DA:226:G:C8     | 3.06                     | 0.44              |
| 33:DA:239:U:C4'   | 33:DA:240:G:OP2    | 2.65                     | 0.44              |
| 33:DA:389:A:C4    | 33:DA:390:U:H1'    | 2.53                     | 0.44              |
| 33:DA:402:G:H4'   | 33:DA:620:C:N3     | 2.32                     | 0.44              |
| 33:DA:435:A:H2'   | 33:DA:435:A:N3     | 2.33                     | 0.44              |
| 33:DA:568:G:N3    | 33:DA:574:A:H2     | 2.16                     | 0.44              |
| 33:DA:711:G:H2'   | 33:DA:712:A:H5''   | 1.98                     | 0.44              |
| 33:DA:825:A:C2    | 33:DA:826:C:C2     | 3.05                     | 0.44              |
| 33:DA:1069:C:N4   | 33:DA:1070:U:C5    | 2.85                     | 0.44              |
| 33:DA:1102:A:H1'  | 34:DB:97:GLY:HA3   | 1.99                     | 0.44              |
| 33:DA:1125:U:O2'  | 33:DA:1126:U:H2'   | 2.17                     | 0.44              |
| 33:DA:1202:U:H2'  | 33:DA:1202:U:O2    | 2.16                     | 0.44              |
| 33:DA:1386:G:C4   | 33:DA:1387:G:N7    | 2.85                     | 0.44              |
| 33:DA:1421:G:N1   | 33:DA:1422:G:C5    | 2.86                     | 0.44              |
| 33:DA:1436:U:O2   | 33:DA:1437:A:C8    | 2.71                     | 0.44              |
| 33:DA:1464:U:C6   | 33:DA:1464:U:C3'   | 3.00                     | 0.44              |
| 33:DA:1468:A:C6   | 33:DA:1469:C:C5    | 3.06                     | 0.44              |
| 33:DA:1478:U:O2   | 33:DA:1479:C:C5    | 2.70                     | 0.44              |
| 33:DA:1480:A:C2'  | 33:DA:1481:U:O5'   | 2.66                     | 0.44              |
| 33:DA:1483:A:H2'  | 33:DA:1484:C:O4'   | 2.17                     | 0.44              |
| 34:DB:10:LYS:O    | 34:DB:11:ALA:C     | 2.55                     | 0.44              |
| 34:DB:19:THR:HA   | 34:DB:37:VAL:HA    | 1.99                     | 0.44              |
| 34:DB:76:SER:O    | 34:DB:79:VAL:CG2   | 2.65                     | 0.44              |
| 34:DB:134:LEU:C   | 34:DB:136:ARG:N    | 2.71                     | 0.44              |
| 34:DB:161:PHE:C   | 34:DB:162:VAL:HG12 | 2.38                     | 0.44              |
| 35:DC:40:GLN:HE22 | 46:DN:65:GLN:HE21  | 1.64                     | 0.44              |
| 35:DC:65:VAL:HG23 | 35:DC:100:ILE:N    | 2.32                     | 0.44              |
| 35:DC:101:ASN:HB3 | 35:DC:102:ILE:H    | 1.58                     | 0.44              |
| 35:DC:184:ASN:O   | 35:DC:199:VAL:HG22 | 2.16                     | 0.44              |
| 36:DD:78:ALA:HB1  | 36:DD:85:THR:HA    | 1.99                     | 0.44              |
| 36:DD:111:ALA:C   | 36:DD:113:ALA:N    | 2.70                     | 0.44              |
| 36:DD:173:ASP:OD1 | 36:DD:175:GLY:N    | 2.48                     | 0.44              |
| 37:DE:57:ALA:O    | 37:DE:59:ILE:N     | 2.51                     | 0.44              |
| 39:DG:46:LEU:HD21 | 39:DG:60:ALA:HB2   | 1.98                     | 0.44              |
| 41:DI:30:ASN:O    | 41:DI:31:GLN:HB2   | 2.16                     | 0.44              |
| 42:DJ:28:THR:HG22 | 42:DJ:28:THR:O     | 2.17                     | 0.44              |
| 43:DK:12:ARG:N    | 43:DK:76:TYR:HA    | 2.33                     | 0.44              |
| 45:DM:107:THR:CG2 | 45:DM:108:ARG:N    | 2.80                     | 0.44              |
| 47:DO:14:PHE:HD1  | 47:DO:26:VAL:HG23  | 1.82                     | 0.44              |
| 47:DO:32:THR:OG1  | 47:DO:62:ARG:HD2   | 2.17                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 48:DP:59:HIS:CE1  | 48:DP:63:GLN:HG3  | 2.51                     | 0.44              |
| 50:DR:33:THR:OG1  | 50:DR:34:GLU:N    | 2.49                     | 0.44              |
| 50:DR:55:ALA:HA   | 50:DR:58:ILE:CG1  | 2.47                     | 0.44              |
| 51:DS:36:ARG:HH11 | 51:DS:36:ARG:HG3  | 1.82                     | 0.44              |
| 4:A3:39:ARG:HD3   | 4:A3:39:ARG:HA    | 1.60                     | 0.44              |
| 8:AB:37:C:N4      | 8:AB:442:G:H1     | 2.12                     | 0.44              |
| 8:AB:121:G:N3     | 8:AB:131:A:N1     | 2.66                     | 0.44              |
| 8:AB:246:C:H42    | 8:AB:252:G:N2     | 2.16                     | 0.44              |
| 8:AB:375:G:C2'    | 8:AB:376:G:H5'    | 2.48                     | 0.44              |
| 8:AB:400:G:C8     | 8:AB:400:G:C3'    | 3.01                     | 0.44              |
| 8:AB:411:G:P      | 8:AB:2407:A:OP2   | 2.75                     | 0.44              |
| 8:AB:590:A:C2     | 8:AB:668:A:C2     | 3.05                     | 0.44              |
| 8:AB:626:A:H2'    | 18:AL:79:LEU:CD2  | 2.48                     | 0.44              |
| 8:AB:696:G:C6     | 8:AB:767:U:C2     | 3.05                     | 0.44              |
| 8:AB:871:U:O2'    | 19:AM:68:PHE:HB3  | 2.18                     | 0.44              |
| 8:AB:1034:G:C2    | 8:AB:1122:G:C4    | 3.06                     | 0.44              |
| 8:AB:1105:U:H2'   | 8:AB:1106:G:H8    | 1.83                     | 0.44              |
| 8:AB:1115:G:H2'   | 8:AB:1116:G:H5''  | 2.00                     | 0.44              |
| 8:AB:1424:G:C2    | 8:AB:1575:C:N3    | 2.86                     | 0.44              |
| 8:AB:1558:C:C4    | 8:AB:1560:G:C2    | 3.06                     | 0.44              |
| 8:AB:1789:A:H2'   | 8:AB:1790:C:H5'   | 1.99                     | 0.44              |
| 8:AB:1863:G:C2    | 8:AB:1880:U:O2    | 2.71                     | 0.44              |
| 8:AB:1889:A:C8    | 8:AB:1889:A:C3'   | 2.99                     | 0.44              |
| 8:AB:2012:G:OP1   | 25:AS:98:LYS:HD2  | 2.18                     | 0.44              |
| 8:AB:2050:C:H1'   | 10:AD:161:MET:HE1 | 1.99                     | 0.44              |
| 8:AB:2059:A:C2    | 8:AB:2503:A:N1    | 2.86                     | 0.44              |
| 8:AB:2337:G:C6    | 8:AB:2338:C:C4    | 3.06                     | 0.44              |
| 8:AB:2358:A:O2'   | 8:AB:2359:C:H5'   | 2.17                     | 0.44              |
| 8:AB:2492:U:C2'   | 8:AB:2493:U:H5'   | 2.48                     | 0.44              |
| 8:AB:2543:G:C5    | 8:AB:2765:A:C2    | 3.05                     | 0.44              |
| 8:AB:2552:U:C4    | 8:AB:2554:U:C5'   | 3.01                     | 0.44              |
| 8:AB:2662:A:H2'   | 8:AB:2663:G:O4'   | 2.18                     | 0.44              |
| 8:AB:2800:A:C2    | 8:AB:2801:G:N3    | 2.85                     | 0.44              |
| 8:AB:2848:G:C4    | 22:AP:96:LEU:CD2  | 3.00                     | 0.44              |
| 9:AC:42:ARG:CG    | 9:AC:43:ASN:N     | 2.66                     | 0.44              |
| 10:AD:52:THR:CG2  | 10:AD:53:GLY:H    | 2.23                     | 0.44              |
| 10:AD:102:ALA:HB3 | 10:AD:105:LYS:CD  | 2.47                     | 0.44              |
| 10:AD:114:LYS:HD2 | 10:AD:196:ALA:HB2 | 1.98                     | 0.44              |
| 10:AD:125:TRP:HB2 | 10:AD:160:LYS:HG2 | 1.99                     | 0.44              |
| 11:AE:71:GLY:O    | 11:AE:72:SER:HB2  | 2.18                     | 0.44              |
| 14:AH:89:LYS:CE   | 14:AH:123:ARG:HB2 | 2.44                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AK:24:VAL:HG21 | 17:AK:31:ARG:O     | 2.17                     | 0.44              |
| 18:AL:30:THR:O    | 18:AL:36:LYS:HG3   | 2.18                     | 0.44              |
| 18:AL:77:ILE:CG2  | 18:AL:78:ARG:NH1   | 2.79                     | 0.44              |
| 18:AL:137:ALA:O   | 18:AL:138:ALA:HB2  | 2.18                     | 0.44              |
| 19:AM:53:MET:HE2  | 19:AM:101:VAL:HG22 | 1.99                     | 0.44              |
| 22:AP:26:GLU:HA   | 22:AP:47:ILE:N     | 2.33                     | 0.44              |
| 23:AQ:87:VAL:O    | 24:AR:53:PHE:CZ    | 2.70                     | 0.44              |
| 27:AU:3:LYS:CD    | 27:AU:81:ARG:HH11  | 2.30                     | 0.44              |
| 27:AU:7:ASP:N     | 27:AU:24:VAL:O     | 2.49                     | 0.44              |
| 33:BA:64:G:O5'    | 33:BA:64:G:H2'     | 2.18                     | 0.44              |
| 33:BA:292:G:N2    | 33:BA:309:A:C4     | 2.86                     | 0.44              |
| 33:BA:416:G:C8    | 33:BA:416:G:H3'    | 2.52                     | 0.44              |
| 33:BA:604:G:C6    | 33:BA:605:U:C2     | 3.06                     | 0.44              |
| 33:BA:664:G:OP2   | 50:BR:56:ARG:NH2   | 2.50                     | 0.44              |
| 33:BA:1061:G:C8   | 33:BA:1062:U:C6    | 3.04                     | 0.44              |
| 33:BA:1098:C:H2'  | 33:BA:1099:G:H5'   | 1.99                     | 0.44              |
| 33:BA:1122:U:C2   | 33:BA:1123:U:C5    | 3.06                     | 0.44              |
| 33:BA:1152:A:C6   | 33:BA:1153:G:C6    | 3.06                     | 0.44              |
| 33:BA:1270:G:O3'  | 33:BA:1314:C:H5''  | 2.17                     | 0.44              |
| 33:BA:1298:U:C5   | 39:BG:118:ARG:NH2  | 2.84                     | 0.44              |
| 33:BA:1456:A:H2'  | 33:BA:1457:G:H8    | 1.82                     | 0.44              |
| 35:BC:69:THR:HG23 | 35:BC:72:PRO:CG    | 2.42                     | 0.44              |
| 37:BE:110:MET:HA  | 37:BE:113:VAL:CG2  | 2.47                     | 0.44              |
| 40:BH:45:ILE:HD11 | 40:BH:48:PHE:HD1   | 1.82                     | 0.44              |
| 41:BI:70:GLY:O    | 41:BI:72:SER:N     | 2.50                     | 0.44              |
| 50:BR:49:LYS:O    | 50:BR:53:GLN:HG3   | 2.18                     | 0.44              |
| 2:C1:36:LYS:HE2   | 8:CB:2286:G:C8     | 2.52                     | 0.44              |
| 3:C2:44:VAL:HG21  | 8:CB:126:A:N1      | 2.32                     | 0.44              |
| 7:CA:47:C:O3'     | 21:CO:97:PHE:CZ    | 2.71                     | 0.44              |
| 7:CA:64:G:C5      | 7:CA:65:U:C5       | 3.06                     | 0.44              |
| 8:CB:194:G:C2     | 8:CB:195:A:C8      | 3.06                     | 0.44              |
| 8:CB:283:G:H2'    | 8:CB:284:U:O4'     | 2.17                     | 0.44              |
| 8:CB:289:G:C6     | 8:CB:290:U:C2      | 3.05                     | 0.44              |
| 8:CB:553:G:H2'    | 8:CB:554:U:H5'     | 1.98                     | 0.44              |
| 8:CB:583:G:C6     | 8:CB:584:C:N4      | 2.86                     | 0.44              |
| 8:CB:637:A:H4'    | 8:CB:638:G:H4'     | 2.00                     | 0.44              |
| 8:CB:647:G:N2     | 8:CB:2350:C:H4'    | 2.33                     | 0.44              |
| 8:CB:681:G:N3     | 8:CB:682:G:C8      | 2.86                     | 0.44              |
| 8:CB:748:G:C5     | 25:CS:90:LYS:HE2   | 2.53                     | 0.44              |
| 8:CB:796:C:H2'    | 8:CB:797:G:H8      | 1.82                     | 0.44              |
| 8:CB:838:C:N3     | 8:CB:941:A:N6      | 2.66                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:971:G:OP1     | 8:CB:974:G:N3      | 2.50                     | 0.44              |
| 8:CB:1080:A:H4'    | 15:CI:133:ARG:NH1  | 2.33                     | 0.44              |
| 8:CB:1153:C:C5'    | 23:CQ:75:TYR:HE2   | 2.30                     | 0.44              |
| 8:CB:1203:U:C4     | 8:CB:1204:A:N6     | 2.86                     | 0.44              |
| 8:CB:1239:G:C4     | 8:CB:1240:U:C5     | 3.06                     | 0.44              |
| 8:CB:1558:C:H1'    | 8:CB:1560:G:C8     | 2.52                     | 0.44              |
| 8:CB:1567:G:H8     | 8:CB:1567:G:C5'    | 2.31                     | 0.44              |
| 8:CB:1712:U:H2'    | 8:CB:1713:A:C8     | 2.52                     | 0.44              |
| 8:CB:1750:G:C5     | 8:CB:1751:U:C5     | 3.05                     | 0.44              |
| 8:CB:1752:C:N4     | 8:CB:1756:G:C6     | 2.86                     | 0.44              |
| 8:CB:1758:U:H3'    | 8:CB:1759:A:H8     | 1.81                     | 0.44              |
| 8:CB:1805:A:H2'    | 8:CB:1806:C:H5''   | 1.99                     | 0.44              |
| 8:CB:1884:G:OP2    | 8:CB:1884:G:C8     | 2.51                     | 0.44              |
| 8:CB:2088:A:C8     | 8:CB:2088:A:C3'    | 3.00                     | 0.44              |
| 8:CB:2244:U:C2     | 8:CB:2245:U:C6     | 3.05                     | 0.44              |
| 8:CB:2439:A:C8     | 8:CB:2586:U:O3'    | 2.71                     | 0.44              |
| 8:CB:2469:A:H4'    | 19:CM:55:ARG:HG2   | 2.00                     | 0.44              |
| 8:CB:2473:U:O2'    | 8:CB:2474:U:H5'    | 2.17                     | 0.44              |
| 8:CB:2531:A:H2'    | 8:CB:2532:G:H5'    | 2.00                     | 0.44              |
| 8:CB:2590:A:C6     | 8:CB:2591:C:C4     | 3.05                     | 0.44              |
| 8:CB:2671:G:N2     | 8:CB:2672:U:O2     | 2.51                     | 0.44              |
| 8:CB:2672:U:C3'    | 8:CB:2673:G:H5''   | 2.48                     | 0.44              |
| 9:CC:9:SER:HA      | 9:CC:10:PRO:HD3    | 1.65                     | 0.44              |
| 10:CD:157:LYS:C    | 10:CD:157:LYS:NZ   | 2.71                     | 0.44              |
| 11:CE:104:ALA:O    | 11:CE:107:SER:N    | 2.37                     | 0.44              |
| 11:CE:109:LEU:HD22 | 11:CE:113:VAL:HA   | 2.00                     | 0.44              |
| 12:CF:16:MET:HG2   | 12:CF:27:VAL:CG2   | 2.48                     | 0.44              |
| 12:CF:33:ILE:HD11  | 12:CF:90:LEU:CD1   | 2.46                     | 0.44              |
| 13:CG:84:LYS:H     | 13:CG:132:LEU:HG   | 1.83                     | 0.44              |
| 13:CG:124:CYS:HA   | 13:CG:125:PRO:HD2  | 1.84                     | 0.44              |
| 14:CH:130:VAL:O    | 14:CH:142:VAL:HB   | 2.18                     | 0.44              |
| 16:CJ:20:ALA:O     | 16:CJ:22:GLY:N     | 2.50                     | 0.44              |
| 16:CJ:35:ARG:HA    | 16:CJ:35:ARG:NE    | 2.32                     | 0.44              |
| 19:CM:61:GLY:O     | 19:CM:62:LYS:CG    | 2.63                     | 0.44              |
| 19:CM:77:PRO:HB2   | 19:CM:78:LEU:H     | 1.62                     | 0.44              |
| 19:CM:96:ILE:HG22  | 19:CM:97:GLN:HE22  | 1.83                     | 0.44              |
| 21:CO:107:ALA:O    | 21:CO:110:ALA:N    | 2.51                     | 0.44              |
| 22:CP:24:THR:HG23  | 22:CP:109:ILE:HG21 | 1.99                     | 0.44              |
| 22:CP:47:ILE:HG21  | 22:CP:49:ILE:HG13  | 1.99                     | 0.44              |
| 22:CP:100:ARG:HG2  | 22:CP:102:ARG:NH2  | 2.31                     | 0.44              |
| 23:CQ:44:TYR:CD1   | 23:CQ:48:ASP:OD2   | 2.70                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 24:CR:67:GLY:H    | 24:CR:98:ILE:N    | 2.15                     | 0.44              |
| 25:CS:33:LEU:CD2  | 25:CS:51:LEU:HD12 | 2.32                     | 0.44              |
| 26:CT:56:GLU:O    | 26:CT:57:VAL:HG13 | 2.16                     | 0.44              |
| 27:CU:51:LEU:C    | 27:CU:53:GLN:H    | 2.21                     | 0.44              |
| 27:CU:94:PHE:HE2  | 27:CU:98:ASN:CB   | 2.31                     | 0.44              |
| 30:CX:7:ARG:HH12  | 30:CX:56:LEU:HD21 | 1.82                     | 0.44              |
| 30:CX:11:VAL:HG13 | 30:CX:14:LEU:N    | 2.33                     | 0.44              |
| 33:DA:233:C:C6    | 33:DA:233:C:C3'   | 3.00                     | 0.44              |
| 33:DA:355:C:N1    | 33:DA:356:A:C8    | 2.86                     | 0.44              |
| 33:DA:430:A:H5''  | 36:DD:6:PRO:HB3   | 2.00                     | 0.44              |
| 33:DA:452:A:C6    | 33:DA:453:G:N7    | 2.86                     | 0.44              |
| 33:DA:485:U:O2    | 33:DA:485:U:C2'   | 2.65                     | 0.44              |
| 33:DA:507:C:H3'   | 33:DA:508:U:C5'   | 2.48                     | 0.44              |
| 33:DA:512:U:O4'   | 36:DD:40:HIS:CE1  | 2.70                     | 0.44              |
| 33:DA:533:A:C5    | 33:DA:536:C:C4    | 3.05                     | 0.44              |
| 33:DA:577:G:C2    | 33:DA:578:C:C5    | 3.05                     | 0.44              |
| 33:DA:671:G:N3    | 33:DA:672:U:C6    | 2.85                     | 0.44              |
| 33:DA:715:A:H1'   | 33:DA:777:A:C6    | 2.52                     | 0.44              |
| 33:DA:806:C:H2'   | 33:DA:807:A:H8    | 1.82                     | 0.44              |
| 33:DA:890:G:N2    | 33:DA:906:A:C4    | 2.86                     | 0.44              |
| 33:DA:979:C:C4    | 33:DA:980:C:C2    | 3.05                     | 0.44              |
| 33:DA:1102:A:O2'  | 34:DB:97:GLY:N    | 2.48                     | 0.44              |
| 33:DA:1150:A:H5'' | 33:DA:1151:A:OP2  | 2.18                     | 0.44              |
| 33:DA:1152:A:OP1  | 42:DJ:72:ARG:NH2  | 2.51                     | 0.44              |
| 33:DA:1198:G:C6   | 33:DA:1199:U:C4   | 3.06                     | 0.44              |
| 33:DA:1261:A:C6   | 33:DA:1262:C:C4   | 3.05                     | 0.44              |
| 33:DA:1389:C:H5'' | 33:DA:1390:U:OP2  | 2.18                     | 0.44              |
| 33:DA:1451:U:H4'  | 33:DA:1452:C:OP2  | 2.18                     | 0.44              |
| 33:DA:1465:A:C5   | 33:DA:1466:C:C5   | 3.05                     | 0.44              |
| 33:DA:1468:A:C5   | 33:DA:1469:C:C5   | 3.05                     | 0.44              |
| 35:DC:35:ASP:OD2  | 35:DC:35:ASP:C    | 2.56                     | 0.44              |
| 38:DF:9:MET:HE2   | 38:DF:9:MET:HB3   | 1.78                     | 0.44              |
| 38:DF:22:ILE:O    | 38:DF:25:TYR:HB2  | 2.18                     | 0.44              |
| 38:DF:52:ASN:HB2  | 38:DF:85:ILE:HG23 | 2.00                     | 0.44              |
| 38:DF:85:ILE:HG22 | 38:DF:86:ARG:N    | 2.33                     | 0.44              |
| 39:DG:14:ASP:CA   | 39:DG:23:ALA:HB2  | 2.44                     | 0.44              |
| 39:DG:92:PRO:O    | 39:DG:95:ARG:HB2  | 2.18                     | 0.44              |
| 42:DJ:70:HIS:HB3  | 42:DJ:72:ARG:HH21 | 1.82                     | 0.44              |
| 45:DM:59:VAL:O    | 45:DM:59:VAL:HG22 | 2.17                     | 0.44              |
| 46:DN:9:GLU:HB2   | 46:DN:62:ARG:NH1  | 2.33                     | 0.44              |
| 51:DS:51:HIS:HB2  | 51:DS:56:HIS:CE1  | 2.53                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 52:DT:43:LYS:O   | 52:DT:46:ALA:HB3 | 2.17                     | 0.44              |
| 1:A0:11:LYS:O    | 1:A0:12:ARG:C    | 2.56                     | 0.44              |
| 2:A1:8:ILE:HG21  | 2:A1:27:ARG:HE   | 1.81                     | 0.44              |
| 2:A1:42:VAL:HG13 | 8:AB:643:A:C2    | 2.53                     | 0.44              |
| 8:AB:40:U:H2'    | 8:AB:41:C:C6     | 2.53                     | 0.44              |
| 8:AB:347:A:C8    | 8:AB:347:A:C3'   | 3.01                     | 0.44              |
| 8:AB:418:C:C2    | 8:AB:419:U:C6    | 3.06                     | 0.44              |
| 8:AB:445:C:O2    | 8:AB:449:A:H2    | 2.01                     | 0.44              |
| 8:AB:527:C:H1'   | 8:AB:528:A:C5    | 2.53                     | 0.44              |
| 8:AB:570:G:C5    | 8:AB:2030:A:N6   | 2.84                     | 0.44              |
| 8:AB:609:A:H2'   | 8:AB:610:C:O4'   | 2.18                     | 0.44              |
| 8:AB:672:C:C3'   | 8:AB:673:C:H5'   | 2.47                     | 0.44              |
| 8:AB:699:A:O3'   | 8:AB:1554:U:C5   | 2.65                     | 0.44              |
| 8:AB:704:G:N3    | 8:AB:726:G:C2    | 2.86                     | 0.44              |
| 8:AB:741:U:N3    | 8:AB:757:G:N1    | 2.66                     | 0.44              |
| 8:AB:856:G:H5''  | 8:AB:856:G:H8    | 1.83                     | 0.44              |
| 8:AB:871:U:OP1   | 19:AM:8:LYS:HA   | 2.18                     | 0.44              |
| 8:AB:945:A:H2    | 8:AB:2448:A:O4'  | 2.00                     | 0.44              |
| 8:AB:995:C:O2    | 16:AJ:3:THR:HG23 | 2.18                     | 0.44              |
| 8:AB:1000:A:C4   | 8:AB:1001:A:C8   | 3.05                     | 0.44              |
| 8:AB:1005:C:O5'  | 8:AB:1005:C:H6   | 2.01                     | 0.44              |
| 8:AB:1030:C:C2'  | 8:AB:1031:G:H5'  | 2.48                     | 0.44              |
| 8:AB:1109:C:C2   | 8:AB:1110:G:C2   | 3.05                     | 0.44              |
| 8:AB:1153:C:H5'  | 23:AQ:75:TYR:HE2 | 1.83                     | 0.44              |
| 8:AB:1220:G:O6   | 8:AB:1230:A:N6   | 2.51                     | 0.44              |
| 8:AB:1241:A:C5   | 8:AB:1242:U:C2   | 3.06                     | 0.44              |
| 8:AB:1273:U:O2'  | 8:AB:1275:A:OP1  | 2.31                     | 0.44              |
| 8:AB:1343:G:C2   | 8:AB:1384:A:H2   | 2.36                     | 0.44              |
| 8:AB:1369:G:H1'  | 8:AB:1809:A:H61  | 1.82                     | 0.44              |
| 8:AB:1453:A:H4'  | 8:AB:1454:C:OP2  | 2.17                     | 0.44              |
| 8:AB:1470:A:N6   | 8:AB:1521:G:H1'  | 2.32                     | 0.44              |
| 8:AB:1524:G:N2   | 8:AB:1525:A:H1'  | 2.33                     | 0.44              |
| 8:AB:1654:A:H2'  | 8:AB:1654:A:N3   | 2.32                     | 0.44              |
| 8:AB:1995:U:O2   | 8:AB:1995:U:H2'  | 2.18                     | 0.44              |
| 8:AB:2010:G:C8   | 8:AB:2010:G:C3'  | 3.00                     | 0.44              |
| 8:AB:2046:G:C6   | 8:AB:2047:C:C4   | 3.05                     | 0.44              |
| 8:AB:2100:G:C6   | 8:AB:2101:A:C4   | 3.06                     | 0.44              |
| 8:AB:2244:U:C2   | 8:AB:2245:U:C5   | 3.05                     | 0.44              |
| 8:AB:2375:G:C2   | 8:AB:2379:G:C6   | 3.05                     | 0.44              |
| 8:AB:2405:G:C2'  | 8:AB:2411:A:N6   | 2.76                     | 0.44              |
| 8:AB:2479:U:C4   | 8:AB:2480:C:C5   | 3.06                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2489:U:C2'   | 8:AB:2490:G:H5'    | 2.48                     | 0.44              |
| 8:AB:2617:U:H2'   | 8:AB:2618:G:H5'    | 1.98                     | 0.44              |
| 8:AB:2625:G:H5''  | 8:AB:2625:G:H8     | 1.83                     | 0.44              |
| 8:AB:2776:A:C2    | 8:AB:2778:A:C4     | 3.05                     | 0.44              |
| 8:AB:2785:C:N3    | 8:AB:2786:U:C4     | 2.86                     | 0.44              |
| 8:AB:2851:A:H2'   | 8:AB:2852:G:H8     | 1.83                     | 0.44              |
| 8:AB:2861:U:O2'   | 8:AB:2862:G:H5'    | 2.17                     | 0.44              |
| 9:AC:21:PRO:CD    | 9:AC:202:ARG:NH1   | 2.81                     | 0.44              |
| 9:AC:141:HIS:O    | 9:AC:143:VAL:HG22  | 2.18                     | 0.44              |
| 9:AC:141:HIS:CD2  | 9:AC:190:THR:HB    | 2.53                     | 0.44              |
| 9:AC:155:ARG:O    | 9:AC:159:THR:CG2   | 2.64                     | 0.44              |
| 10:AD:14:ILE:HD13 | 10:AD:19:GLY:HA2   | 2.00                     | 0.44              |
| 10:AD:62:LYS:H    | 10:AD:62:LYS:HD3   | 1.83                     | 0.44              |
| 11:AE:11:ALA:C    | 11:AE:12:LEU:CG    | 2.72                     | 0.44              |
| 11:AE:132:LYS:O   | 11:AE:133:LEU:HD22 | 2.17                     | 0.44              |
| 13:AG:89:VAL:HG12 | 13:AG:90:GLY:H     | 1.83                     | 0.44              |
| 14:AH:26:ALA:N    | 14:AH:30:LEU:HB3   | 2.33                     | 0.44              |
| 15:AI:89:SER:HB2  | 15:AI:135:MET:O    | 2.18                     | 0.44              |
| 16:AJ:8:PRO:HG2   | 16:AJ:11:VAL:HG11  | 2.00                     | 0.44              |
| 16:AJ:45:THR:HA   | 16:AJ:46:PRO:HD2   | 1.85                     | 0.44              |
| 17:AK:10:VAL:HG23 | 17:AK:10:VAL:O     | 2.17                     | 0.44              |
| 18:AL:25:SER:H    | 18:AL:27:LEU:CD1   | 2.31                     | 0.44              |
| 18:AL:38:GLN:N    | 18:AL:41:ARG:NH1   | 2.57                     | 0.44              |
| 18:AL:81:ASP:HB2  | 18:AL:99:ASN:ND2   | 2.13                     | 0.44              |
| 19:AM:47:GLU:O    | 19:AM:50:ARG:HB3   | 2.18                     | 0.44              |
| 19:AM:55:ARG:CG   | 19:AM:56:ALA:N     | 2.81                     | 0.44              |
| 20:AN:85:PRO:O    | 20:AN:88:ALA:HB3   | 2.17                     | 0.44              |
| 21:AO:1:MET:HE3   | 21:AO:3:LYS:HD3    | 1.99                     | 0.44              |
| 21:AO:77:ALA:O    | 21:AO:81:ARG:HB2   | 2.18                     | 0.44              |
| 22:AP:109:ILE:O   | 22:AP:110:LYS:O    | 2.36                     | 0.44              |
| 24:AR:5:PHE:HB3   | 24:AR:12:HIS:HE1   | 1.78                     | 0.44              |
| 24:AR:23:GLU:CG   | 24:AR:24:LYS:N     | 2.69                     | 0.44              |
| 24:AR:27:ILE:HG23 | 24:AR:27:ILE:O     | 2.17                     | 0.44              |
| 24:AR:30:GLY:O    | 24:AR:66:HIS:HB3   | 2.18                     | 0.44              |
| 25:AS:17:VAL:O    | 25:AS:20:VAL:HG13  | 2.18                     | 0.44              |
| 25:AS:53:SER:C    | 25:AS:55:ILE:N     | 2.69                     | 0.44              |
| 27:AU:88:ASP:HB3  | 27:AU:89:GLY:H     | 1.51                     | 0.44              |
| 28:AV:70:ILE:CG1  | 28:AV:71:LYS:H     | 2.31                     | 0.44              |
| 30:AX:4:LYS:CA    | 30:AX:7:ARG:HE     | 2.29                     | 0.44              |
| 30:AX:41:HIS:O    | 30:AX:45:GLN:CB    | 2.66                     | 0.44              |
| 31:AY:25:GLY:O    | 31:AY:26:LEU:HD23  | 2.17                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AZ:48:GLN:NE2  | 32:AZ:49:ARG:H     | 2.16                     | 0.44              |
| 33:BA:129:A:O2'   | 33:BA:130:A:O5'    | 2.35                     | 0.44              |
| 33:BA:158:G:H22   | 33:BA:162:A:N6     | 2.16                     | 0.44              |
| 33:BA:246:A:C5    | 33:BA:279:A:C6     | 3.06                     | 0.44              |
| 33:BA:246:A:C4    | 33:BA:279:A:N6     | 2.85                     | 0.44              |
| 33:BA:383:A:O5'   | 33:BA:383:A:C8     | 2.70                     | 0.44              |
| 33:BA:432:A:C6    | 33:BA:433:G:C4     | 3.05                     | 0.44              |
| 33:BA:439:U:C2'   | 33:BA:440:C:H5'    | 2.47                     | 0.44              |
| 33:BA:510:A:N3    | 33:BA:543:U:O2'    | 2.39                     | 0.44              |
| 33:BA:517:G:N7    | 33:BA:531:U:C2     | 2.86                     | 0.44              |
| 33:BA:537:G:C4    | 33:BA:538:G:N7     | 2.86                     | 0.44              |
| 33:BA:722:G:C6    | 33:BA:724:G:C2     | 3.06                     | 0.44              |
| 33:BA:1052:U:H5'' | 33:BA:1053:G:OP2   | 2.18                     | 0.44              |
| 33:BA:1297:G:N2   | 39:BG:114:SER:HB3  | 2.32                     | 0.44              |
| 33:BA:1320:C:N4   | 51:BS:35:ARG:HH12  | 2.10                     | 0.44              |
| 35:BC:141:MET:HE1 | 35:BC:147:GLY:H    | 1.82                     | 0.44              |
| 39:BG:97:ALA:O    | 39:BG:98:LEU:C     | 2.56                     | 0.44              |
| 40:BH:94:VAL:O    | 40:BH:95:MET:C     | 2.56                     | 0.44              |
| 44:BL:66:ILE:HG21 | 44:BL:71:HIS:HB2   | 2.00                     | 0.44              |
| 52:BT:68:LYS:HG3  | 52:BT:69:ASN:N     | 2.18                     | 0.44              |
| 2:C1:42:VAL:O     | 2:C1:42:VAL:HG23   | 2.18                     | 0.44              |
| 4:C3:30:HIS:C     | 4:C3:31:ILE:HG23   | 2.38                     | 0.44              |
| 7:CA:30:C:C5      | 7:CA:31:C:C5       | 3.05                     | 0.44              |
| 7:CA:87:U:C2      | 7:CA:89:U:OP1      | 2.71                     | 0.44              |
| 8:CB:78:U:O5'     | 8:CB:78:U:H6       | 2.00                     | 0.44              |
| 8:CB:137:U:OP2    | 8:CB:137:U:H5      | 2.00                     | 0.44              |
| 8:CB:222:A:N7     | 8:CB:224:U:C5      | 2.86                     | 0.44              |
| 8:CB:356:G:C6     | 8:CB:357:C:C4      | 3.06                     | 0.44              |
| 8:CB:400:G:C8     | 8:CB:400:G:C3'     | 3.01                     | 0.44              |
| 8:CB:422:A:H2'    | 8:CB:422:A:N3      | 2.32                     | 0.44              |
| 8:CB:453:A:N3     | 8:CB:457:A:O2'     | 2.51                     | 0.44              |
| 8:CB:489:G:C3'    | 8:CB:490:C:H5''    | 2.48                     | 0.44              |
| 8:CB:499:U:O4     | 8:CB:500:G:C6      | 2.71                     | 0.44              |
| 8:CB:500:G:N2     | 8:CB:502:A:H3'     | 2.33                     | 0.44              |
| 8:CB:527:C:H1'    | 8:CB:528:A:C5      | 2.53                     | 0.44              |
| 8:CB:623:C:H5     | 18:CL:100:ILE:HD11 | 1.83                     | 0.44              |
| 8:CB:666:A:C2'    | 8:CB:667:U:C5'     | 2.85                     | 0.44              |
| 8:CB:779:U:C2'    | 8:CB:780:G:H5'     | 2.48                     | 0.44              |
| 8:CB:1000:A:O4'   | 31:CY:10:ARG:HD3   | 2.17                     | 0.44              |
| 8:CB:1040:A:N6    | 8:CB:1041:G:N7     | 2.65                     | 0.44              |
| 8:CB:1203:U:C5    | 8:CB:1204:A:C5     | 3.06                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1307:A:N7    | 8:CB:1308:A:N7     | 2.65                     | 0.44              |
| 8:CB:1327:A:N3    | 8:CB:1327:A:H2'    | 2.33                     | 0.44              |
| 8:CB:1381:G:C6    | 8:CB:1382:G:N2     | 2.86                     | 0.44              |
| 8:CB:1485:U:O2'   | 8:CB:1486:U:H5'    | 2.17                     | 0.44              |
| 8:CB:1499:C:C6    | 8:CB:1499:C:C3'    | 3.00                     | 0.44              |
| 8:CB:1683:U:O5'   | 8:CB:1683:U:H6     | 2.00                     | 0.44              |
| 8:CB:1764:C:N3    | 8:CB:1765:U:C5     | 2.72                     | 0.44              |
| 8:CB:1930:G:O2'   | 8:CB:1968:G:N1     | 2.49                     | 0.44              |
| 8:CB:1975:G:C4    | 8:CB:1976:U:C5     | 3.05                     | 0.44              |
| 8:CB:2051:A:N1    | 8:CB:2614:A:C5     | 2.86                     | 0.44              |
| 8:CB:2359:C:O2    | 18:CL:58:TYR:OH    | 2.36                     | 0.44              |
| 8:CB:2373:G:N2    | 8:CB:2381:A:H1'    | 2.32                     | 0.44              |
| 8:CB:2524:G:H2'   | 8:CB:2525:G:C8     | 2.53                     | 0.44              |
| 8:CB:2526:G:C2    | 8:CB:2538:C:O2     | 2.71                     | 0.44              |
| 8:CB:2545:G:O2'   | 8:CB:2546:U:H5'    | 2.18                     | 0.44              |
| 8:CB:2584:U:H2'   | 8:CB:2585:U:H5'    | 2.00                     | 0.44              |
| 8:CB:2692:G:H2'   | 8:CB:2693:G:H8     | 1.82                     | 0.44              |
| 8:CB:2720:U:H2'   | 8:CB:2721:A:H8     | 1.83                     | 0.44              |
| 9:CC:141:HIS:O    | 9:CC:143:VAL:HG22  | 2.18                     | 0.44              |
| 9:CC:187:CYS:C    | 9:CC:188:ARG:HG3   | 2.37                     | 0.44              |
| 10:CD:17:GLU:HA   | 22:CP:80:VAL:HG12  | 2.00                     | 0.44              |
| 10:CD:61:THR:CG2  | 10:CD:62:LYS:CE    | 2.96                     | 0.44              |
| 10:CD:119:ALA:HB3 | 10:CD:124:ARG:HG3  | 1.99                     | 0.44              |
| 10:CD:124:ARG:CZ  | 10:CD:163:GLY:HA3  | 2.48                     | 0.44              |
| 10:CD:125:TRP:C   | 10:CD:125:TRP:CD1  | 2.91                     | 0.44              |
| 11:CE:136:GLN:C   | 11:CE:139:LYS:H    | 2.20                     | 0.44              |
| 12:CF:121:PHE:HB3 | 12:CF:162:ASP:OD1  | 2.18                     | 0.44              |
| 13:CG:8:VAL:HB    | 13:CG:49:LEU:CB    | 2.36                     | 0.44              |
| 13:CG:132:LEU:CD1 | 13:CG:140:ILE:HD12 | 2.43                     | 0.44              |
| 14:CH:23:ALA:O    | 14:CH:24:GLY:C     | 2.55                     | 0.44              |
| 14:CH:71:LYS:HE2  | 14:CH:71:LYS:HB3   | 1.55                     | 0.44              |
| 16:CJ:103:ILE:C   | 16:CJ:105:VAL:H    | 2.20                     | 0.44              |
| 19:CM:5:LYS:HG2   | 19:CM:5:LYS:HZ2    | 1.65                     | 0.44              |
| 21:CO:74:VAL:O    | 21:CO:78:VAL:HB    | 2.18                     | 0.44              |
| 22:CP:7:LEU:O     | 22:CP:10:GLU:N     | 2.51                     | 0.44              |
| 22:CP:23:ASP:N    | 22:CP:93:LYS:HE2   | 2.33                     | 0.44              |
| 23:CQ:46:TYR:CD2  | 23:CQ:46:TYR:C     | 2.91                     | 0.44              |
| 24:CR:18:GLN:HB3  | 24:CR:98:ILE:O     | 2.17                     | 0.44              |
| 24:CR:66:HIS:CB   | 24:CR:98:ILE:HG13  | 2.46                     | 0.44              |
| 24:CR:101:ILE:O   | 24:CR:102:SER:O    | 2.36                     | 0.44              |
| 26:CT:55:VAL:CG1  | 26:CT:56:GLU:N     | 2.80                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:CU:78:LYS:HB3  | 27:CU:96:LYS:HB3   | 2.00                     | 0.44              |
| 29:CW:55:ASP:OD1  | 29:CW:56:HIS:N     | 2.48                     | 0.44              |
| 30:CX:17:GLU:N    | 30:CX:18:LEU:HD22  | 2.33                     | 0.44              |
| 31:CY:8:GLN:O     | 31:CY:8:GLN:HG2    | 2.17                     | 0.44              |
| 33:DA:22:G:H4'    | 33:DA:885:G:C8     | 2.53                     | 0.44              |
| 33:DA:35:G:C4     | 33:DA:36:C:C5      | 3.06                     | 0.44              |
| 33:DA:237:G:OP1   | 49:DQ:41:THR:HG23  | 2.18                     | 0.44              |
| 33:DA:367:U:H5    | 33:DA:394:G:C2     | 2.32                     | 0.44              |
| 33:DA:383:A:C8    | 33:DA:383:A:OP2    | 2.71                     | 0.44              |
| 33:DA:518:C:N1    | 33:DA:530:G:N7     | 2.66                     | 0.44              |
| 33:DA:542:G:C2    | 33:DA:543:U:C5     | 3.05                     | 0.44              |
| 33:DA:610:U:C6    | 33:DA:611:C:C6     | 3.05                     | 0.44              |
| 33:DA:643:C:O2'   | 33:DA:644:U:H5'    | 2.18                     | 0.44              |
| 33:DA:715:A:H5''  | 33:DA:805:C:H1'    | 1.99                     | 0.44              |
| 33:DA:728:A:C2    | 33:DA:729:A:C4     | 3.06                     | 0.44              |
| 33:DA:728:A:C3'   | 33:DA:729:A:C8     | 3.01                     | 0.44              |
| 33:DA:787:A:C2    | 33:DA:788:U:C4     | 3.06                     | 0.44              |
| 33:DA:789:U:O2    | 33:DA:789:U:C3'    | 2.64                     | 0.44              |
| 33:DA:892:A:H2'   | 33:DA:893:C:C5'    | 2.46                     | 0.44              |
| 33:DA:943:U:H2'   | 33:DA:944:G:C5'    | 2.48                     | 0.44              |
| 33:DA:1256:A:C5   | 33:DA:1278:G:C5    | 3.06                     | 0.44              |
| 33:DA:1332:A:C4   | 33:DA:1333:A:C8    | 3.06                     | 0.44              |
| 33:DA:1353:G:H2'  | 33:DA:1354:U:H6    | 1.82                     | 0.44              |
| 33:DA:1415:G:C6   | 33:DA:1486:G:C5    | 3.06                     | 0.44              |
| 33:DA:1415:G:N7   | 33:DA:1486:G:N1    | 2.66                     | 0.44              |
| 33:DA:1431:A:C6   | 33:DA:1432:G:N2    | 2.86                     | 0.44              |
| 33:DA:1438:G:C2   | 33:DA:1464:U:C2    | 3.06                     | 0.44              |
| 35:DC:11:LEU:O    | 35:DC:17:TRP:NE1   | 2.51                     | 0.44              |
| 35:DC:185:THR:CG2 | 35:DC:198:LYS:HG2  | 2.48                     | 0.44              |
| 38:DF:11:HIS:CG   | 38:DF:12:PRO:HD2   | 2.52                     | 0.44              |
| 39:DG:31:VAL:O    | 39:DG:34:LYS:HB2   | 2.18                     | 0.44              |
| 39:DG:70:PRO:CG   | 39:DG:102:TRP:CZ3  | 3.01                     | 0.44              |
| 39:DG:107:ALA:HB1 | 39:DG:119:LEU:HD12 | 2.00                     | 0.44              |
| 41:DI:6:TYR:HE2   | 41:DI:17:ARG:CG    | 2.31                     | 0.44              |
| 42:DJ:33:GLY:HA2  | 42:DJ:80:THR:HG21  | 2.00                     | 0.44              |
| 42:DJ:73:LEU:O    | 42:DJ:74:VAL:HB    | 2.17                     | 0.44              |
| 47:DO:56:LEU:C    | 47:DO:58:MET:N     | 2.71                     | 0.44              |
| 50:DR:31:TYR:H    | 50:DR:31:TYR:HD1   | 1.63                     | 0.44              |
| 4:A3:42:HIS:NE2   | 4:A3:43:LEU:O      | 2.51                     | 0.44              |
| 5:A4:15:LYS:HE2   | 5:A4:16:ILE:C      | 2.38                     | 0.44              |
| 6:A5:156:GLN:C    | 6:A5:158:VAL:N     | 2.71                     | 0.44              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 7:AA:23:G:H5''   | 7:AA:24:G:P     | 2.57                     | 0.44              |
| 8:AB:8:C:N4      | 8:AB:2895:G:H1  | 2.14                     | 0.44              |
| 8:AB:55:G:N1     | 8:AB:56:A:N7    | 2.66                     | 0.44              |
| 8:AB:84:A:N6     | 8:AB:99:U:H4'   | 2.33                     | 0.44              |
| 8:AB:279:A:C8    | 8:AB:279:A:O5'  | 2.70                     | 0.44              |
| 8:AB:319:G:H2'   | 8:AB:320:A:O4'  | 2.18                     | 0.44              |
| 8:AB:379:G:N1    | 8:AB:396:G:O6   | 2.51                     | 0.44              |
| 8:AB:408:G:H2'   | 8:AB:409:G:O5'  | 2.18                     | 0.44              |
| 8:AB:424:G:N2    | 8:AB:425:G:C4   | 2.86                     | 0.44              |
| 8:AB:489:G:C3'   | 8:AB:490:C:H5'' | 2.48                     | 0.44              |
| 8:AB:510:C:H5''  | 8:AB:511:U:P    | 2.57                     | 0.44              |
| 8:AB:657:U:C2    | 8:AB:658:U:C5   | 3.05                     | 0.44              |
| 8:AB:685:A:HO2'  | 8:AB:686:U:P    | 2.41                     | 0.44              |
| 8:AB:687:C:O2'   | 8:AB:688:U:H5'  | 2.18                     | 0.44              |
| 8:AB:819:A:C8    | 8:AB:1189:A:C6  | 3.06                     | 0.44              |
| 8:AB:826:U:C2    | 8:AB:828:U:H1'  | 2.53                     | 0.44              |
| 8:AB:904:G:C2    | 8:AB:905:A:C4   | 3.06                     | 0.44              |
| 8:AB:978:G:H5''  | 8:AB:979:A:OP2  | 2.18                     | 0.44              |
| 8:AB:987:C:H1'   | 8:AB:1000:A:H2  | 1.83                     | 0.44              |
| 8:AB:1003:G:N2   | 8:AB:1153:C:N3  | 2.66                     | 0.44              |
| 8:AB:1014:A:H61  | 8:AB:1148:U:H3  | 1.65                     | 0.44              |
| 8:AB:1152:C:O2'  | 8:AB:1153:C:H5' | 2.18                     | 0.44              |
| 8:AB:1203:U:C4   | 8:AB:1204:A:N6  | 2.86                     | 0.44              |
| 8:AB:1227:G:C4   | 8:AB:1228:G:C8  | 3.06                     | 0.44              |
| 8:AB:1254:A:H5'' | 8:AB:1255:U:H5' | 2.00                     | 0.44              |
| 8:AB:1292:G:C4   | 8:AB:1293:C:C5  | 3.05                     | 0.44              |
| 8:AB:1351:C:HO2' | 8:AB:1571:A:H1' | 1.83                     | 0.44              |
| 8:AB:1479:G:C2'  | 8:AB:1480:C:H5' | 2.48                     | 0.44              |
| 8:AB:1675:C:H42  | 8:AB:1993:U:H1' | 1.83                     | 0.44              |
| 8:AB:1707:G:C8   | 8:AB:1707:G:C5' | 3.01                     | 0.44              |
| 8:AB:1745:A:H8   | 8:AB:1745:A:O5' | 2.00                     | 0.44              |
| 8:AB:1786:A:C6   | 8:AB:1938:A:C2  | 3.06                     | 0.44              |
| 8:AB:1831:G:C4   | 8:AB:1975:G:N2  | 2.86                     | 0.44              |
| 8:AB:2019:A:H8   | 8:AB:2019:A:O5' | 2.01                     | 0.44              |
| 8:AB:2035:G:H5'' | 8:AB:2035:G:H8  | 1.83                     | 0.44              |
| 8:AB:2073:C:H2'  | 8:AB:2074:U:H5' | 1.99                     | 0.44              |
| 8:AB:2097:A:H2'  | 8:AB:2098:U:C6  | 2.53                     | 0.44              |
| 8:AB:2184:A:C2   | 8:AB:2185:U:N3  | 2.86                     | 0.44              |
| 8:AB:2289:G:C4   | 8:AB:2290:G:C8  | 3.06                     | 0.44              |
| 8:AB:2316:G:O5'  | 8:AB:2316:G:H8  | 2.01                     | 0.44              |
| 8:AB:2472:G:H2'  | 8:AB:2529:G:N2  | 2.33                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2488:G:H2'    | 8:AB:2489:U:C6    | 2.52                     | 0.44              |
| 8:AB:2508:G:N1     | 8:AB:2582:G:O6    | 2.50                     | 0.44              |
| 8:AB:2519:U:C5     | 8:AB:2541:A:N6    | 2.86                     | 0.44              |
| 8:AB:2635:A:H2'    | 8:AB:2636:C:O5'   | 2.18                     | 0.44              |
| 8:AB:2655:G:C2     | 8:AB:2664:G:C6    | 3.06                     | 0.44              |
| 8:AB:2739:U:O2'    | 8:AB:2740:A:OP1   | 2.36                     | 0.44              |
| 9:AC:229:HIS:CG    | 9:AC:230:PRO:HD2  | 2.53                     | 0.44              |
| 9:AC:229:HIS:ND1   | 9:AC:231:HIS:HD2  | 2.16                     | 0.44              |
| 10:AD:62:LYS:HE2   | 10:AD:62:LYS:H    | 1.83                     | 0.44              |
| 11:AE:49:ARG:HB2   | 11:AE:49:ARG:NH1  | 2.33                     | 0.44              |
| 11:AE:52:VAL:C     | 11:AE:54:GLY:N    | 2.70                     | 0.44              |
| 11:AE:118:LEU:HD12 | 11:AE:187:VAL:CG1 | 2.48                     | 0.44              |
| 11:AE:154:ASP:O    | 11:AE:155:GLU:C   | 2.56                     | 0.44              |
| 12:AF:146:ASP:O    | 12:AF:147:ARG:HB3 | 2.18                     | 0.44              |
| 14:AH:23:ALA:C     | 14:AH:25:TYR:N    | 2.71                     | 0.44              |
| 17:AK:5:GLN:O      | 17:AK:6:THR:HB    | 2.18                     | 0.44              |
| 17:AK:93:GLN:CD    | 17:AK:94:PRO:HD2  | 2.37                     | 0.44              |
| 19:AM:76:LYS:HA    | 19:AM:77:PRO:HD3  | 1.65                     | 0.44              |
| 23:AQ:17:LEU:O     | 23:AQ:19:GLN:N    | 2.49                     | 0.44              |
| 23:AQ:23:TYR:O     | 23:AQ:24:TYR:HB2  | 2.15                     | 0.44              |
| 23:AQ:40:LYS:HE3   | 23:AQ:43:GLN:HE21 | 1.79                     | 0.44              |
| 24:AR:85:LYS:C     | 24:AR:87:GLN:H    | 2.21                     | 0.44              |
| 25:AS:108:SER:O    | 25:AS:109:ASP:HB3 | 2.17                     | 0.44              |
| 26:AT:60:THR:HA    | 26:AT:83:ALA:HA   | 2.00                     | 0.44              |
| 26:AT:88:LYS:HE3   | 26:AT:88:LYS:HB3  | 1.86                     | 0.44              |
| 27:AU:27:VAL:HG23  | 27:AU:33:VAL:N    | 2.32                     | 0.44              |
| 27:AU:85:ARG:C     | 27:AU:87:GLU:H    | 2.22                     | 0.44              |
| 33:BA:220:G:O2'    | 33:BA:221:C:H5'   | 2.17                     | 0.44              |
| 33:BA:232:G:C2'    | 33:BA:233:C:H5'   | 2.47                     | 0.44              |
| 33:BA:238:A:C2     | 33:BA:239:U:C5    | 3.06                     | 0.44              |
| 33:BA:261:U:C5     | 52:BT:73:ARG:CZ   | 3.01                     | 0.44              |
| 33:BA:335:C:C5     | 33:BA:336:A:N7    | 2.86                     | 0.44              |
| 33:BA:390:U:C2     | 33:BA:391:G:C8    | 3.06                     | 0.44              |
| 33:BA:494:G:N2     | 33:BA:496:A:C5    | 2.85                     | 0.44              |
| 33:BA:734:G:N2     | 50:BR:63:TYR:CE2  | 2.86                     | 0.44              |
| 33:BA:831:A:H2'    | 33:BA:832:G:O5'   | 2.17                     | 0.44              |
| 33:BA:846:G:C2'    | 33:BA:847:G:H8    | 2.22                     | 0.44              |
| 33:BA:948:C:C6     | 33:BA:948:C:H3'   | 2.53                     | 0.44              |
| 33:BA:982:U:H5'    | 46:BN:5:MET:HE1   | 1.99                     | 0.44              |
| 33:BA:1376:U:H2'   | 33:BA:1377:A:N9   | 2.32                     | 0.44              |
| 33:BA:1386:G:N2    | 33:BA:1387:G:C4   | 2.86                     | 0.44              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:BA:1478:U:H2' | 33:BA:1479:C:C5    | 2.53                     | 0.44              |
| 33:BA:1491:G:C2' | 33:BA:1492:A:C8    | 2.95                     | 0.44              |
| 33:BA:1503:A:H5' | 33:BA:1531:A:O4'   | 2.18                     | 0.44              |
| 34:BB:60:ALA:O   | 34:BB:224:ARG:HB3  | 2.18                     | 0.44              |
| 34:BB:139:GLU:HA | 34:BB:142:LYS:HD3  | 2.00                     | 0.44              |
| 36:BD:166:LYS:HA | 36:BD:167:PRO:HD2  | 1.66                     | 0.44              |
| 41:BI:116:GLY:O  | 41:BI:117:LEU:HD23 | 2.17                     | 0.44              |
| 42:BJ:45:ARG:C   | 42:BJ:46:LYS:HD3   | 2.39                     | 0.44              |
| 43:BK:95:THR:CG2 | 43:BK:96:ILE:N     | 2.81                     | 0.44              |
| 44:BL:13:ARG:H   | 44:BL:13:ARG:CD    | 2.29                     | 0.44              |
| 52:BT:24:ARG:NH1 | 52:BT:65:LEU:HD13  | 2.33                     | 0.44              |
| 4:C3:11:LYS:HD3  | 18:CL:64:PHE:CD2   | 2.53                     | 0.44              |
| 4:C3:40:LYS:HB2  | 4:C3:40:LYS:HE3    | 1.66                     | 0.44              |
| 5:C4:23:ILE:H    | 5:C4:23:ILE:HG12   | 1.62                     | 0.44              |
| 7:CA:29:A:O4'    | 7:CA:29:A:OP2      | 2.36                     | 0.44              |
| 7:CA:83:G:H1     | 7:CA:93:C:N4       | 2.15                     | 0.44              |
| 8:CB:27:G:H1'    | 8:CB:513:A:H61     | 1.82                     | 0.44              |
| 8:CB:152:A:O2'   | 8:CB:153:U:H5'     | 2.18                     | 0.44              |
| 8:CB:153:U:H3'   | 8:CB:153:U:H6      | 1.83                     | 0.44              |
| 8:CB:160:A:C5    | 8:CB:167:A:C2      | 3.06                     | 0.44              |
| 8:CB:402:A:N7    | 8:CB:403:U:C6      | 2.86                     | 0.44              |
| 8:CB:499:U:H2'   | 8:CB:499:U:O2      | 2.17                     | 0.44              |
| 8:CB:643:A:N7    | 8:CB:644:A:N7      | 2.66                     | 0.44              |
| 8:CB:838:C:N3    | 8:CB:941:A:C6      | 2.86                     | 0.44              |
| 8:CB:875:G:H2'   | 8:CB:875:G:N3      | 2.33                     | 0.44              |
| 8:CB:904:G:H5'   | 8:CB:905:A:OP2     | 2.18                     | 0.44              |
| 8:CB:925:A:C6    | 8:CB:926:G:C5      | 3.06                     | 0.44              |
| 8:CB:1000:A:N6   | 8:CB:1001:A:C6     | 2.85                     | 0.44              |
| 8:CB:1009:A:H5'  | 23:CQ:58:GLN:CD    | 2.37                     | 0.44              |
| 8:CB:1025:G:O2'  | 8:CB:1026:G:OP1    | 2.31                     | 0.44              |
| 8:CB:1040:A:O2'  | 8:CB:1041:G:H5'    | 2.18                     | 0.44              |
| 8:CB:1201:U:O2   | 8:CB:1245:G:C2     | 2.71                     | 0.44              |
| 8:CB:1417:C:O5'  | 8:CB:1588:G:H1'    | 2.18                     | 0.44              |
| 8:CB:1820:U:O2   | 9:CC:200:MET:O     | 2.36                     | 0.44              |
| 8:CB:1831:G:N2   | 8:CB:1975:G:C4     | 2.86                     | 0.44              |
| 8:CB:2348:U:C6   | 8:CB:2348:U:C3'    | 3.01                     | 0.44              |
| 8:CB:2439:A:H1'  | 8:CB:2587:A:OP1    | 2.18                     | 0.44              |
| 8:CB:2442:C:C6   | 8:CB:2442:C:C3'    | 3.01                     | 0.44              |
| 8:CB:2524:G:N2   | 8:CB:2525:G:H1'    | 2.33                     | 0.44              |
| 8:CB:2543:G:C2   | 8:CB:2765:A:C5     | 3.06                     | 0.44              |
| 8:CB:2645:G:H5'' | 8:CB:2645:G:C8     | 2.52                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2664:G:O5'   | 8:CB:2664:G:C8     | 2.69                     | 0.44              |
| 8:CB:2694:G:N1    | 8:CB:2695:U:O2     | 2.51                     | 0.44              |
| 8:CB:2763:G:C8    | 8:CB:2763:G:C5'    | 2.91                     | 0.44              |
| 8:CB:2816:G:N1    | 8:CB:2817:U:C4     | 2.86                     | 0.44              |
| 8:CB:2885:G:C4    | 8:CB:2886:A:H8     | 2.35                     | 0.44              |
| 9:CC:141:HIS:CE1  | 9:CC:156:SER:OG    | 2.71                     | 0.44              |
| 9:CC:171:VAL:O    | 9:CC:172:THR:OG1   | 2.32                     | 0.44              |
| 10:CD:125:TRP:O   | 10:CD:128:ARG:NE   | 2.51                     | 0.44              |
| 11:CE:122:GLU:OE2 | 11:CE:190:ALA:HA   | 2.18                     | 0.44              |
| 11:CE:152:GLU:O   | 11:CE:153:LEU:CB   | 2.66                     | 0.44              |
| 13:CG:90:GLY:O    | 13:CG:91:VAL:C     | 2.56                     | 0.44              |
| 14:CH:62:LEU:HD23 | 14:CH:66:ASN:OD1   | 2.18                     | 0.44              |
| 16:CJ:26:GLY:O    | 16:CJ:29:ALA:HB3   | 2.18                     | 0.44              |
| 18:CL:33:ARG:HG2  | 24:CR:85:LYS:HZ3   | 1.83                     | 0.44              |
| 18:CL:61:LEU:N    | 18:CL:62:PRO:CD    | 2.81                     | 0.44              |
| 20:CN:75:ILE:O    | 20:CN:75:ILE:HG12  | 2.18                     | 0.44              |
| 20:CN:84:GLY:O    | 20:CN:88:ALA:HB2   | 2.18                     | 0.44              |
| 20:CN:98:LEU:O    | 20:CN:111:ALA:HA   | 2.18                     | 0.44              |
| 22:CP:26:GLU:HA   | 22:CP:47:ILE:N     | 2.33                     | 0.44              |
| 22:CP:43:GLU:CD   | 33:DA:346:G:O5'    | 2.56                     | 0.44              |
| 22:CP:45:VAL:HG21 | 22:CP:73:PHE:CD1   | 2.53                     | 0.44              |
| 22:CP:54:LEU:HD22 | 22:CP:55:HIS:CD2   | 2.53                     | 0.44              |
| 22:CP:71:ARG:NH2  | 22:CP:102:ARG:HA   | 2.32                     | 0.44              |
| 22:CP:100:ARG:CG  | 22:CP:102:ARG:HH21 | 2.29                     | 0.44              |
| 28:CV:72:VAL:HG12 | 28:CV:93:ARG:HA    | 1.99                     | 0.44              |
| 29:CW:7:GLY:O     | 29:CW:8:SER:CB     | 2.65                     | 0.44              |
| 29:CW:27:GLY:CA   | 29:CW:60:ALA:HA    | 2.48                     | 0.44              |
| 31:CY:2:LYS:HB2   | 31:CY:37:ARG:CB    | 2.48                     | 0.44              |
| 33:DA:157:U:O2    | 33:DA:165:G:C2     | 2.70                     | 0.44              |
| 33:DA:157:U:H3'   | 33:DA:157:U:C6     | 2.52                     | 0.44              |
| 33:DA:159:G:N2    | 33:DA:161:A:O5'    | 2.51                     | 0.44              |
| 33:DA:162:A:OP2   | 33:DA:163:C:C5     | 2.71                     | 0.44              |
| 33:DA:303:A:H8    | 33:DA:303:A:O5'    | 2.00                     | 0.44              |
| 33:DA:441:A:H1'   | 33:DA:497:G:N2     | 2.33                     | 0.44              |
| 33:DA:538:G:H5''  | 44:DL:110:LYS:HZ2  | 1.83                     | 0.44              |
| 33:DA:550:G:C8    | 33:DA:551:U:H5     | 2.35                     | 0.44              |
| 33:DA:768:A:H2'   | 33:DA:769:G:C5'    | 2.39                     | 0.44              |
| 33:DA:823:C:N3    | 33:DA:878:A:N1     | 2.65                     | 0.44              |
| 33:DA:855:U:C6    | 33:DA:855:U:H5''   | 2.53                     | 0.44              |
| 33:DA:1130:A:C8   | 33:DA:1130:A:C3'   | 3.01                     | 0.44              |
| 33:DA:1260:G:H2'  | 33:DA:1260:G:N3    | 2.33                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1422:G:C2   | 33:DA:1423:G:N7   | 2.86                     | 0.44              |
| 35:DC:90:VAL:O    | 35:DC:94:ALA:HB3  | 2.17                     | 0.44              |
| 37:DE:80:LEU:HD13 | 37:DE:80:LEU:HA   | 1.60                     | 0.44              |
| 39:DG:102:TRP:CD1 | 39:DG:136:LYS:CB  | 2.98                     | 0.44              |
| 40:DH:6:ILE:HD12  | 40:DH:6:ILE:N     | 2.33                     | 0.44              |
| 41:DI:60:LEU:HD12 | 41:DI:60:LEU:H    | 1.82                     | 0.44              |
| 42:DJ:37:ARG:HG2  | 42:DJ:37:ARG:NH1  | 2.33                     | 0.44              |
| 42:DJ:59:LYS:C    | 42:DJ:61:ALA:H    | 2.22                     | 0.44              |
| 43:DK:46:ALA:C    | 43:DK:48:GLY:H    | 2.19                     | 0.44              |
| 44:DL:65:TYR:H    | 44:DL:95:HIS:HA   | 1.83                     | 0.44              |
| 47:DO:42:PHE:CE2  | 47:DO:52:ARG:HB3  | 2.53                     | 0.44              |
| 48:DP:76:LYS:C    | 48:DP:78:VAL:N    | 2.70                     | 0.44              |
| 49:DQ:61:ARG:HG2  | 49:DQ:62:GLU:O    | 2.18                     | 0.44              |
| 49:DQ:61:ARG:CG   | 49:DQ:62:GLU:N    | 2.80                     | 0.44              |
| 2:A1:7:LYS:HD2    | 8:AB:2284:A:OP2   | 2.18                     | 0.43              |
| 7:AA:9:G:P        | 21:AO:94:ARG:HH12 | 2.41                     | 0.43              |
| 7:AA:39:A:N3      | 7:AA:44:G:N2      | 2.66                     | 0.43              |
| 7:AA:61:G:C5      | 7:AA:62:C:C5      | 3.06                     | 0.43              |
| 8:AB:80:G:H2'     | 8:AB:294:A:N1     | 2.32                     | 0.43              |
| 8:AB:92:U:C6      | 8:AB:92:U:H5''    | 2.53                     | 0.43              |
| 8:AB:347:A:H3'    | 8:AB:347:A:H8     | 1.80                     | 0.43              |
| 8:AB:398:C:OP1    | 32:AZ:49:ARG:HD2  | 2.18                     | 0.43              |
| 8:AB:463:G:C2     | 8:AB:467:G:C5     | 3.05                     | 0.43              |
| 8:AB:491:G:H2'    | 8:AB:492:A:C8     | 2.53                     | 0.43              |
| 8:AB:491:G:C5     | 8:AB:492:A:C5     | 3.06                     | 0.43              |
| 8:AB:496:G:C2'    | 8:AB:497:A:H5'    | 2.48                     | 0.43              |
| 8:AB:601:C:O2     | 8:AB:605:G:C4'    | 2.63                     | 0.43              |
| 8:AB:692:C:H2'    | 8:AB:693:A:C8     | 2.53                     | 0.43              |
| 8:AB:738:G:C4     | 8:AB:759:G:N1     | 2.86                     | 0.43              |
| 8:AB:1108:U:H2'   | 8:AB:1109:C:C6    | 2.46                     | 0.43              |
| 8:AB:1128:G:H5'   | 8:AB:2517:C:C5'   | 2.47                     | 0.43              |
| 8:AB:1350:C:C5    | 8:AB:1351:C:C5    | 3.06                     | 0.43              |
| 8:AB:1443:U:H3'   | 8:AB:1443:U:C6    | 2.49                     | 0.43              |
| 8:AB:1466:U:C6    | 8:AB:1466:U:C3'   | 3.01                     | 0.43              |
| 8:AB:1566:A:C6    | 9:AC:213:ARG:NH1  | 2.86                     | 0.43              |
| 8:AB:1608:A:C5    | 8:AB:1611:C:C5    | 3.06                     | 0.43              |
| 8:AB:1771:C:C4    | 8:AB:1772:A:N7    | 2.86                     | 0.43              |
| 8:AB:1982:U:H6    | 8:AB:1982:U:P     | 2.41                     | 0.43              |
| 8:AB:2045:C:N3    | 8:AB:2624:G:C2    | 2.86                     | 0.43              |
| 8:AB:2180:U:H2'   | 8:AB:2180:U:O2    | 2.18                     | 0.43              |
| 8:AB:2223:G:H2'   | 8:AB:2223:G:N3    | 2.33                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2335:A:C6    | 8:AB:2337:G:C4     | 3.06                     | 0.43              |
| 8:AB:2623:G:C3'   | 8:AB:2624:G:H5'    | 2.46                     | 0.43              |
| 8:AB:2635:A:C2'   | 8:AB:2636:C:O5'    | 2.66                     | 0.43              |
| 8:AB:2674:G:H2'   | 8:AB:2675:A:O4'    | 2.17                     | 0.43              |
| 8:AB:2743:U:C3'   | 8:AB:2744:G:H5''   | 2.47                     | 0.43              |
| 8:AB:2824:C:C4    | 8:AB:2825:G:C5     | 3.06                     | 0.43              |
| 9:AC:188:ARG:O    | 9:AC:189:ALA:CB    | 2.65                     | 0.43              |
| 9:AC:257:ARG:NH2  | 9:AC:260:LYS:O     | 2.44                     | 0.43              |
| 10:AD:49:GLN:HG2  | 10:AD:50:VAL:H     | 1.83                     | 0.43              |
| 14:AH:68:ARG:C    | 14:AH:70:GLU:H     | 2.20                     | 0.43              |
| 17:AK:2:ILE:HG22  | 17:AK:32:TYR:HB3   | 2.00                     | 0.43              |
| 17:AK:12:ASP:CB   | 17:AK:85:VAL:HG22  | 2.47                     | 0.43              |
| 17:AK:98:ARG:HH22 | 33:BA:339:C:P      | 2.40                     | 0.43              |
| 19:AM:5:LYS:HG3   | 19:AM:91:TYR:CB    | 2.48                     | 0.43              |
| 19:AM:71:LYS:N    | 19:AM:71:LYS:CD    | 2.79                     | 0.43              |
| 19:AM:111:GLU:HG2 | 19:AM:111:GLU:O    | 2.18                     | 0.43              |
| 25:AS:4:ILE:HG12  | 25:AS:106:VAL:CG1  | 2.48                     | 0.43              |
| 28:AV:24:ASN:O    | 28:AV:44:HIS:N     | 2.51                     | 0.43              |
| 29:AW:44:PHE:CE2  | 29:AW:79:ILE:O     | 2.71                     | 0.43              |
| 29:AW:54:ARG:HD3  | 29:AW:54:ARG:N     | 2.32                     | 0.43              |
| 32:AZ:12:ILE:HD12 | 32:AZ:13:THR:N     | 2.33                     | 0.43              |
| 32:AZ:48:GLN:C    | 32:AZ:49:ARG:O     | 2.56                     | 0.43              |
| 33:BA:32:A:C2     | 33:BA:33:A:N7      | 2.86                     | 0.43              |
| 33:BA:46:G:N7     | 33:BA:366:A:N6     | 2.66                     | 0.43              |
| 33:BA:157:U:H3'   | 33:BA:157:U:C6     | 2.53                     | 0.43              |
| 33:BA:248:C:C2    | 33:BA:249:U:C5     | 3.05                     | 0.43              |
| 33:BA:261:U:H5    | 52:BT:73:ARG:CZ    | 2.31                     | 0.43              |
| 33:BA:318:G:C5    | 33:BA:319:G:N7     | 2.86                     | 0.43              |
| 33:BA:480:U:H5''  | 33:BA:481:G:OP2    | 2.17                     | 0.43              |
| 33:BA:788:U:C4    | 33:BA:789:U:N3     | 2.79                     | 0.43              |
| 33:BA:844:G:N2    | 33:BA:845:A:H62    | 2.16                     | 0.43              |
| 33:BA:865:A:C5'   | 33:BA:865:A:C8     | 3.00                     | 0.43              |
| 33:BA:936:C:H2'   | 33:BA:937:A:H8     | 1.77                     | 0.43              |
| 33:BA:1035:A:H2'  | 33:BA:1036:A:O4'   | 2.18                     | 0.43              |
| 33:BA:1107:C:P    | 35:BC:171:ARG:HB2  | 2.57                     | 0.43              |
| 33:BA:1129:C:H2'  | 33:BA:1139:G:C5    | 2.49                     | 0.43              |
| 33:BA:1144:G:O2'  | 33:BA:1145:A:C8    | 2.69                     | 0.43              |
| 33:BA:1171:A:C2   | 33:BA:1172:C:C4    | 3.06                     | 0.43              |
| 34:BB:34:ARG:HD2  | 34:BB:35:ASN:HB2   | 1.98                     | 0.43              |
| 34:BB:116:LEU:HB3 | 34:BB:140:LEU:HD21 | 2.00                     | 0.43              |
| 36:BD:176:LYS:C   | 36:BD:177:MET:HG2  | 2.38                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BI:51:LEU:HB3  | 41:BI:56:MET:HG2   | 1.99                     | 0.43              |
| 42:BJ:33:GLY:HA3  | 42:BJ:80:THR:HG21  | 2.00                     | 0.43              |
| 42:BJ:49:PHE:CD2  | 46:BN:73:LEU:HD23  | 2.53                     | 0.43              |
| 43:BK:40:ALA:O    | 43:BK:41:LEU:HG    | 2.18                     | 0.43              |
| 44:BL:109:ARG:HG3 | 44:BL:109:ARG:HH11 | 1.83                     | 0.43              |
| 44:BL:113:ARG:O   | 44:BL:114:SER:C    | 2.55                     | 0.43              |
| 46:BN:5:MET:CE    | 46:BN:62:ARG:NH2   | 2.81                     | 0.43              |
| 48:BP:38:PHE:O    | 48:BP:39:PHE:HB2   | 2.18                     | 0.43              |
| 49:BQ:9:GLY:CA    | 49:BQ:24:ILE:HG13  | 2.47                     | 0.43              |
| 1:C0:35:GLU:O     | 1:C0:36:LYS:O      | 2.36                     | 0.43              |
| 2:C1:40:PRO:HB2   | 2:C1:42:VAL:H      | 1.83                     | 0.43              |
| 3:C2:41:ARG:HD3   | 3:C2:41:ARG:HA     | 1.64                     | 0.43              |
| 8:CB:58:G:C6      | 8:CB:59:U:C4       | 3.06                     | 0.43              |
| 8:CB:215:G:N2     | 8:CB:432:A:C2      | 2.86                     | 0.43              |
| 8:CB:301:G:N3     | 8:CB:317:G:C2      | 2.86                     | 0.43              |
| 8:CB:591:U:C4     | 8:CB:592:A:N7      | 2.85                     | 0.43              |
| 8:CB:663:G:C5'    | 18:CL:27:LEU:HD13  | 2.43                     | 0.43              |
| 8:CB:682:G:N2     | 8:CB:683:U:N3      | 2.65                     | 0.43              |
| 8:CB:773:U:H4'    | 8:CB:774:G:OP2     | 2.17                     | 0.43              |
| 8:CB:808:G:C8     | 8:CB:808:G:H5''    | 2.53                     | 0.43              |
| 8:CB:812:C:H2'    | 8:CB:813:U:O5'     | 2.17                     | 0.43              |
| 8:CB:912:C:H2'    | 8:CB:913:U:C6      | 2.53                     | 0.43              |
| 8:CB:1074:G:C2    | 8:CB:1075:C:C2     | 3.06                     | 0.43              |
| 8:CB:1129:A:C4    | 8:CB:2570:G:H1'    | 2.54                     | 0.43              |
| 8:CB:1193:G:N2    | 8:CB:1194:A:H1'    | 2.33                     | 0.43              |
| 8:CB:1214:A:H61   | 8:CB:1235:G:C2'    | 2.30                     | 0.43              |
| 8:CB:1364:G:C2    | 8:CB:1366:A:OP2    | 2.71                     | 0.43              |
| 8:CB:1558:C:C2    | 8:CB:1560:G:C6     | 3.06                     | 0.43              |
| 8:CB:1629:U:H5''  | 8:CB:1630:A:OP2    | 2.18                     | 0.43              |
| 8:CB:1673:G:H5''  | 8:CB:1674:G:OP2    | 2.17                     | 0.43              |
| 8:CB:1727:C:C4    | 8:CB:1728:C:N4     | 2.86                     | 0.43              |
| 8:CB:1768:C:N4    | 8:CB:1769:U:C4     | 2.86                     | 0.43              |
| 8:CB:1773:A:H5''  | 8:CB:1829:A:OP2    | 2.17                     | 0.43              |
| 8:CB:1776:G:OP2   | 55:CB:5298:HOH:O   | 2.21                     | 0.43              |
| 8:CB:1805:A:H8    | 8:CB:1805:A:O5'    | 2.01                     | 0.43              |
| 8:CB:1836:C:C4    | 8:CB:1837:C:C5     | 3.06                     | 0.43              |
| 8:CB:2009:A:C8    | 8:CB:2009:A:C3'    | 3.01                     | 0.43              |
| 8:CB:2010:G:C2'   | 8:CB:2011:U:H5'    | 2.48                     | 0.43              |
| 8:CB:2236:U:C4    | 8:CB:2237:G:C5     | 3.06                     | 0.43              |
| 8:CB:2268:A:O2'   | 8:CB:2269:G:H5''   | 2.18                     | 0.43              |
| 8:CB:2270:A:H3'   | 8:CB:2270:A:C8     | 2.53                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2345:G:C8    | 8:CB:2345:G:C5'    | 2.94                     | 0.43              |
| 8:CB:2517:C:O2'   | 8:CB:2518:A:P      | 2.76                     | 0.43              |
| 8:CB:2636:C:H4'   | 10:CD:80:TRP:NE1   | 2.33                     | 0.43              |
| 8:CB:2703:C:H2'   | 8:CB:2704:C:H6     | 1.82                     | 0.43              |
| 8:CB:2739:U:C5    | 8:CB:2763:G:C4     | 3.05                     | 0.43              |
| 8:CB:2822:G:P     | 10:CD:115:GLY:HA3  | 2.58                     | 0.43              |
| 9:CC:210:ALA:O    | 9:CC:211:ARG:C     | 2.56                     | 0.43              |
| 10:CD:14:ILE:HD13 | 10:CD:19:GLY:HA2   | 2.00                     | 0.43              |
| 10:CD:34:VAL:HG13 | 10:CD:35:THR:N     | 2.32                     | 0.43              |
| 10:CD:127:PHE:O   | 10:CD:128:ARG:CD   | 2.65                     | 0.43              |
| 11:CE:185:LYS:HA  | 11:CE:185:LYS:HD2  | 1.87                     | 0.43              |
| 12:CF:49:LEU:CD2  | 12:CF:52:ALA:HB2   | 2.48                     | 0.43              |
| 12:CF:174:PHE:N   | 12:CF:175:PRO:CD   | 2.80                     | 0.43              |
| 14:CH:70:GLU:C    | 14:CH:72:ILE:H     | 2.21                     | 0.43              |
| 15:CI:20:SER:HA   | 15:CI:25:PRO:CD    | 2.48                     | 0.43              |
| 16:CJ:24:THR:C    | 16:CJ:25:LEU:HD13  | 2.38                     | 0.43              |
| 16:CJ:99:ARG:O    | 16:CJ:100:VAL:C    | 2.57                     | 0.43              |
| 16:CJ:102:GLU:OE2 | 16:CJ:124:VAL:HG13 | 2.18                     | 0.43              |
| 19:CM:60:GLN:HG2  | 19:CM:105:MET:SD   | 2.58                     | 0.43              |
| 21:CO:94:ARG:NH1  | 21:CO:94:ARG:HB2   | 2.33                     | 0.43              |
| 22:CP:61:ARG:O    | 22:CP:74:GLN:OE1   | 2.35                     | 0.43              |
| 23:CQ:30:VAL:CB   | 23:CQ:33:VAL:HG23  | 2.48                     | 0.43              |
| 23:CQ:40:LYS:NZ   | 23:CQ:40:LYS:CB    | 2.75                     | 0.43              |
| 23:CQ:65:ASN:HA   | 23:CQ:75:TYR:HB2   | 1.99                     | 0.43              |
| 23:CQ:103:VAL:O   | 23:CQ:107:ALA:N    | 2.46                     | 0.43              |
| 26:CT:28:ASN:HB2  | 26:CT:87:LEU:CB    | 2.36                     | 0.43              |
| 33:DA:238:A:C2    | 33:DA:239:U:C5     | 3.06                     | 0.43              |
| 33:DA:370:C:N3    | 33:DA:371:A:N7     | 2.65                     | 0.43              |
| 33:DA:407:U:C1'   | 36:DD:115:GLN:HE22 | 2.31                     | 0.43              |
| 33:DA:460:A:N3    | 33:DA:460:A:H2'    | 2.31                     | 0.43              |
| 33:DA:502:A:H5''  | 44:DL:114:SER:HB3  | 1.99                     | 0.43              |
| 33:DA:533:A:C6    | 33:DA:536:C:N3     | 2.86                     | 0.43              |
| 33:DA:557:G:O2'   | 33:DA:558:G:O5'    | 2.30                     | 0.43              |
| 33:DA:573:A:C3'   | 33:DA:574:A:C8     | 3.00                     | 0.43              |
| 33:DA:587:G:C2    | 33:DA:755:G:C2     | 3.06                     | 0.43              |
| 33:DA:735:C:OP1   | 50:DR:56:ARG:NH1   | 2.51                     | 0.43              |
| 33:DA:857:C:O2    | 33:DA:857:C:C2'    | 2.66                     | 0.43              |
| 33:DA:1053:G:OP1  | 33:DA:1054:C:H2'   | 2.17                     | 0.43              |
| 33:DA:1126:U:C5   | 33:DA:1280:A:H5'   | 2.52                     | 0.43              |
| 33:DA:1395:C:C6   | 33:DA:1395:C:C3'   | 3.01                     | 0.43              |
| 34:DB:95:TRP:CE2  | 34:DB:171:ALA:HB2  | 2.53                     | 0.43              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 34:DB:102:ASN:C    | 34:DB:104:LYS:N  | 2.69                     | 0.43              |
| 35:DC:90:VAL:CG1   | 35:DC:98:ALA:HB2 | 2.48                     | 0.43              |
| 35:DC:127:VAL:HG23 | 35:DC:129:PHE:H  | 1.83                     | 0.43              |
| 38:DF:42:TRP:HB2   | 38:DF:59:TYR:HB2 | 2.00                     | 0.43              |
| 43:DK:16:SER:CB    | 43:DK:77:GLY:O   | 2.45                     | 0.43              |
| 43:DK:26:PHE:CE1   | 43:DK:88:PRO:HB2 | 2.52                     | 0.43              |
| 46:DN:5:MET:CB     | 46:DN:8:ARG:HE   | 2.31                     | 0.43              |
| 47:DO:3:SER:OG     | 47:DO:4:THR:N    | 2.49                     | 0.43              |
| 47:DO:52:ARG:C     | 47:DO:55:LEU:HB3 | 2.38                     | 0.43              |
| 47:DO:86:LEU:HD12  | 47:DO:86:LEU:N   | 2.33                     | 0.43              |
| 48:DP:80:LYS:HB2   | 48:DP:80:LYS:HZ2 | 1.81                     | 0.43              |
| 53:DU:9:GLU:HA     | 53:DU:10:PRO:HD3 | 1.80                     | 0.43              |
| 4:A3:23:HIS:CD2    | 4:A3:47:ALA:CB   | 3.02                     | 0.43              |
| 5:A4:5:ALA:HB3     | 5:A4:7:VAL:HG22  | 2.00                     | 0.43              |
| 7:AA:2:G:O6        | 7:AA:118:C:N4    | 2.52                     | 0.43              |
| 7:AA:11:C:O2'      | 7:AA:12:C:H5'    | 2.19                     | 0.43              |
| 7:AA:29:A:N1       | 7:AA:56:G:C6     | 2.86                     | 0.43              |
| 8:AB:198:C:HO2'    | 8:AB:199:A:P     | 2.41                     | 0.43              |
| 8:AB:256:A:H2'     | 8:AB:257:C:C6    | 2.53                     | 0.43              |
| 8:AB:265:A:H2'     | 8:AB:266:G:O4'   | 2.18                     | 0.43              |
| 8:AB:300:A:H2      | 8:AB:333:G:H2'   | 1.83                     | 0.43              |
| 8:AB:414:C:H3'     | 8:AB:414:C:C6    | 2.52                     | 0.43              |
| 8:AB:463:G:H8      | 8:AB:463:G:O5'   | 2.01                     | 0.43              |
| 8:AB:527:C:H5''    | 8:AB:2779:U:N3   | 2.33                     | 0.43              |
| 8:AB:680:C:C2      | 8:AB:681:G:C8    | 3.06                     | 0.43              |
| 8:AB:782:A:O2'     | 9:AC:223:ALA:O   | 2.36                     | 0.43              |
| 8:AB:1123:C:H6     | 8:AB:1123:C:C5'  | 2.26                     | 0.43              |
| 8:AB:1521:G:C6     | 8:AB:1522:A:N1   | 2.86                     | 0.43              |
| 8:AB:1524:G:C2     | 8:AB:1525:A:H1'  | 2.53                     | 0.43              |
| 8:AB:1652:A:C6     | 8:AB:1653:G:N2   | 2.86                     | 0.43              |
| 8:AB:1704:C:O2     | 8:AB:1705:A:C8   | 2.71                     | 0.43              |
| 8:AB:1847:A:H1'    | 8:AB:1848:A:N7   | 2.33                     | 0.43              |
| 8:AB:2070:A:N3     | 8:AB:2071:A:C8   | 2.87                     | 0.43              |
| 8:AB:2102:G:C6     | 8:AB:2103:C:C4   | 3.05                     | 0.43              |
| 8:AB:2269:G:C2'    | 8:AB:2270:A:H5'  | 2.49                     | 0.43              |
| 8:AB:2282:G:O6     | 8:AB:2425:A:H2   | 1.99                     | 0.43              |
| 8:AB:2583:G:C6     | 8:AB:2584:U:O2   | 2.71                     | 0.43              |
| 8:AB:2708:G:N3     | 8:AB:2709:G:C8   | 2.87                     | 0.43              |
| 8:AB:2744:G:C2     | 8:AB:2761:A:C4   | 3.05                     | 0.43              |
| 8:AB:2763:G:H8     | 8:AB:2763:G:C5'  | 2.20                     | 0.43              |
| 8:AB:2829:A:O2'    | 8:AB:2830:C:H5'  | 2.18                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2834:G:O6     | 8:AB:2879:A:C2'   | 2.65                     | 0.43              |
| 8:AB:2849:U:O4     | 8:AB:2867:G:C5    | 2.71                     | 0.43              |
| 8:AB:2854:G:H2'    | 8:AB:2855:C:O4'   | 2.18                     | 0.43              |
| 9:AC:63:ILE:HD13   | 9:AC:63:ILE:N     | 2.33                     | 0.43              |
| 10:AD:13:ARG:NH2   | 22:AP:12:MET:SD   | 2.90                     | 0.43              |
| 11:AE:124:PHE:C    | 11:AE:126:VAL:N   | 2.71                     | 0.43              |
| 12:AF:78:ILE:HG22  | 12:AF:80:GLN:H    | 1.83                     | 0.43              |
| 14:AH:25:TYR:CD1   | 14:AH:25:TYR:C    | 2.92                     | 0.43              |
| 16:AJ:8:PRO:HG2    | 16:AJ:11:VAL:CG1  | 2.47                     | 0.43              |
| 19:AM:68:PHE:O     | 19:AM:93:VAL:HG21 | 2.17                     | 0.43              |
| 21:AO:21:LEU:HD23  | 29:AW:77:LYS:HA   | 2.00                     | 0.43              |
| 21:AO:30:ARG:O     | 21:AO:31:THR:O    | 2.36                     | 0.43              |
| 21:AO:106:LEU:HD13 | 21:AO:106:LEU:O   | 2.18                     | 0.43              |
| 22:AP:92:ARG:NH2   | 22:AP:111:GLU:O   | 2.51                     | 0.43              |
| 23:AQ:23:TYR:HB2   | 23:AQ:28:SER:HB3  | 2.01                     | 0.43              |
| 23:AQ:97:ILE:C     | 23:AQ:99:VAL:N    | 2.71                     | 0.43              |
| 24:AR:42:ALA:HA    | 24:AR:54:VAL:N    | 2.31                     | 0.43              |
| 24:AR:55:ASP:C     | 24:AR:57:GLY:H    | 2.20                     | 0.43              |
| 26:AT:73:ARG:O     | 26:AT:73:ARG:HG3  | 2.17                     | 0.43              |
| 30:AX:43:LEU:C     | 30:AX:45:GLN:H    | 2.21                     | 0.43              |
| 33:BA:179:A:H2'    | 33:BA:180:U:C6    | 2.53                     | 0.43              |
| 33:BA:239:U:C4'    | 33:BA:240:G:OP2   | 2.66                     | 0.43              |
| 33:BA:292:G:N7     | 33:BA:293:G:C1'   | 2.81                     | 0.43              |
| 33:BA:406:G:C6     | 33:BA:407:U:H5    | 2.36                     | 0.43              |
| 33:BA:446:G:N2     | 33:BA:489:C:C2    | 2.87                     | 0.43              |
| 33:BA:502:A:C5     | 33:BA:503:C:C6    | 3.06                     | 0.43              |
| 33:BA:509:A:N7     | 33:BA:510:A:C4    | 2.85                     | 0.43              |
| 33:BA:707:U:H5'    | 43:BK:32:THR:HG21 | 1.99                     | 0.43              |
| 33:BA:741:G:H3'    | 33:BA:741:G:C8    | 2.53                     | 0.43              |
| 33:BA:978:A:HO2'   | 33:BA:979:C:H5'   | 1.83                     | 0.43              |
| 33:BA:1008:U:C4    | 33:BA:1009:U:C6   | 3.06                     | 0.43              |
| 33:BA:1206:G:H8    | 55:BA:5231:HOH:O  | 2.01                     | 0.43              |
| 33:BA:1301:U:O2    | 33:BA:1301:U:C2'  | 2.67                     | 0.43              |
| 33:BA:1378:C:O2    | 33:BA:1379:G:O4'  | 2.35                     | 0.43              |
| 33:BA:1464:U:O2'   | 33:BA:1465:A:H5'  | 2.18                     | 0.43              |
| 34:BB:81:ASP:O     | 34:BB:85:SER:HB2  | 2.17                     | 0.43              |
| 35:BC:114:LEU:HD23 | 35:BC:114:LEU:HA  | 1.65                     | 0.43              |
| 37:BE:42:ASN:HB3   | 37:BE:44:ARG:NH1  | 2.33                     | 0.43              |
| 37:BE:84:VAL:CG1   | 37:BE:85:LYS:N    | 2.81                     | 0.43              |
| 39:BG:30:MET:SD    | 39:BG:33:GLY:HA2  | 2.58                     | 0.43              |
| 41:BI:80:HIS:HE1   | 41:BI:103:VAL:O   | 2.01                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BJ:52:LEU:HD13 | 46:BN:80:ARG:HD3  | 1.99                     | 0.43              |
| 42:BJ:99:GLN:HG3  | 42:BJ:101:SER:HB3 | 2.01                     | 0.43              |
| 46:BN:4:SER:C     | 46:BN:6:LYS:H     | 2.21                     | 0.43              |
| 46:BN:5:MET:CE    | 46:BN:62:ARG:HH22 | 2.30                     | 0.43              |
| 47:BO:59:VAL:O    | 47:BO:60:SER:C    | 2.56                     | 0.43              |
| 51:BS:20:LYS:O    | 51:BS:20:LYS:HD2  | 2.19                     | 0.43              |
| 2:C1:24:LYS:NZ    | 8:CB:2285:C:H41   | 2.16                     | 0.43              |
| 5:C4:16:ILE:CD1   | 8:CB:1033:U:H6    | 2.31                     | 0.43              |
| 7:CA:53:A:C6      | 7:CA:54:G:C6      | 3.06                     | 0.43              |
| 8:CB:34:U:H6      | 8:CB:34:U:H2'     | 1.52                     | 0.43              |
| 8:CB:64:A:N3      | 8:CB:65:U:N3      | 2.66                     | 0.43              |
| 8:CB:77:G:C6      | 8:CB:78:U:N3      | 2.86                     | 0.43              |
| 8:CB:95:A:H4'     | 30:CX:41:HIS:HA   | 2.00                     | 0.43              |
| 8:CB:197:A:C6     | 8:CB:198:C:N3     | 2.87                     | 0.43              |
| 8:CB:309:A:C2     | 8:CB:330:A:C5     | 3.06                     | 0.43              |
| 8:CB:584:C:P      | 23:CQ:5:ARG:HD3   | 2.57                     | 0.43              |
| 8:CB:617:G:OP1    | 11:CE:102:ARG:HG2 | 2.18                     | 0.43              |
| 8:CB:733:G:C8     | 8:CB:733:G:C3'    | 3.01                     | 0.43              |
| 8:CB:773:U:H2'    | 8:CB:778:G:O2'    | 2.19                     | 0.43              |
| 8:CB:783:A:H2'    | 8:CB:784:G:O5'    | 2.18                     | 0.43              |
| 8:CB:838:C:C4     | 8:CB:941:A:N6     | 2.87                     | 0.43              |
| 8:CB:849:A:C4     | 8:CB:850:U:C5     | 3.06                     | 0.43              |
| 8:CB:970:U:O2     | 8:CB:971:G:C8     | 2.71                     | 0.43              |
| 8:CB:973:A:H5'    | 8:CB:1188:U:H1'   | 1.99                     | 0.43              |
| 8:CB:991:C:H5'    | 8:CB:991:C:C6     | 2.45                     | 0.43              |
| 8:CB:1003:G:C2'   | 8:CB:1010:A:N1    | 2.81                     | 0.43              |
| 8:CB:1022:G:H22   | 8:CB:1142:A:H2    | 1.40                     | 0.43              |
| 8:CB:1137:G:N2    | 16:CJ:107:GLY:O   | 2.51                     | 0.43              |
| 8:CB:1276:A:C6    | 8:CB:1295:C:C2    | 3.06                     | 0.43              |
| 8:CB:1293:C:H2'   | 8:CB:1294:U:C6    | 2.54                     | 0.43              |
| 8:CB:1340:U:H4'   | 8:CB:1341:G:OP2   | 2.18                     | 0.43              |
| 8:CB:1341:G:C6    | 26:CT:84:TYR:CE2  | 3.06                     | 0.43              |
| 8:CB:1445:G:H2'   | 8:CB:1446:C:O4'   | 2.18                     | 0.43              |
| 8:CB:1451:C:H5''  | 8:CB:1451:C:C6    | 2.47                     | 0.43              |
| 8:CB:1454:C:C4'   | 8:CB:1455:G:OP1   | 2.65                     | 0.43              |
| 8:CB:1557:C:H3'   | 8:CB:1557:C:C6    | 2.53                     | 0.43              |
| 8:CB:1702:G:C4    | 8:CB:1703:G:C8    | 3.06                     | 0.43              |
| 8:CB:1786:A:C6    | 8:CB:1938:A:C2    | 3.06                     | 0.43              |
| 8:CB:1878:G:C6    | 8:CB:1879:C:N3    | 2.85                     | 0.43              |
| 8:CB:1926:U:H2'   | 8:CB:1928:A:N7    | 2.33                     | 0.43              |
| 8:CB:2230:G:C5    | 8:CB:2231:U:C5    | 3.06                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:2360:G:H3'    | 8:CB:2360:G:C8    | 2.53                     | 0.43              |
| 8:CB:2453:A:H2     | 8:CB:2504:U:O2    | 2.01                     | 0.43              |
| 8:CB:2673:G:O2'    | 8:CB:2674:G:H5'   | 2.18                     | 0.43              |
| 8:CB:2683:C:O2'    | 8:CB:2684:U:H5'   | 2.18                     | 0.43              |
| 8:CB:2711:A:P      | 55:CB:5479:HOH:O  | 2.75                     | 0.43              |
| 8:CB:2762:C:C2'    | 8:CB:2763:G:H5''  | 2.43                     | 0.43              |
| 8:CB:2881:U:H2'    | 8:CB:2882:A:O4'   | 2.17                     | 0.43              |
| 9:CC:241:LYS:O     | 9:CC:243:PRO:CD   | 2.66                     | 0.43              |
| 10:CD:69:ALA:C     | 10:CD:70:LYS:HG2  | 2.38                     | 0.43              |
| 11:CE:10:SER:O     | 11:CE:12:LEU:N    | 2.46                     | 0.43              |
| 12:CF:38:GLY:O     | 12:CF:39:VAL:C    | 2.56                     | 0.43              |
| 16:CJ:122:LEU:HD23 | 16:CJ:122:LEU:HA  | 1.70                     | 0.43              |
| 16:CJ:135:GLN:O    | 16:CJ:135:GLN:CG  | 2.66                     | 0.43              |
| 19:CM:50:ARG:HH22  | 19:CM:53:MET:CE   | 2.31                     | 0.43              |
| 20:CN:97:ILE:O     | 20:CN:98:LEU:HD23 | 2.18                     | 0.43              |
| 21:CO:47:VAL:O     | 21:CO:47:VAL:HG22 | 2.18                     | 0.43              |
| 29:CW:81:ILE:HG12  | 29:CW:82:GLU:N    | 2.29                     | 0.43              |
| 30:CX:11:VAL:HG13  | 30:CX:14:LEU:H    | 1.83                     | 0.43              |
| 32:CZ:3:LYS:HB2    | 32:CZ:8:LYS:O     | 2.17                     | 0.43              |
| 33:DA:55:A:C2      | 33:DA:56:U:C2     | 3.06                     | 0.43              |
| 33:DA:65:A:C2      | 33:DA:381:C:N3    | 2.86                     | 0.43              |
| 33:DA:135:C:H3'    | 33:DA:135:C:C6    | 2.53                     | 0.43              |
| 33:DA:219:U:N3     | 33:DA:220:G:N7    | 2.65                     | 0.43              |
| 33:DA:320:A:H2'    | 33:DA:321:A:O4'   | 2.17                     | 0.43              |
| 33:DA:410:G:H5''   | 33:DA:411:A:OP2   | 2.18                     | 0.43              |
| 33:DA:477:C:C2'    | 33:DA:478:A:H5'   | 2.48                     | 0.43              |
| 33:DA:478:A:N6     | 33:DA:479:U:H3    | 2.16                     | 0.43              |
| 33:DA:556:C:H2'    | 33:DA:557:G:O5'   | 2.18                     | 0.43              |
| 33:DA:579:A:C4     | 33:DA:580:C:C5    | 3.06                     | 0.43              |
| 33:DA:673:A:C4'    | 38:DF:86:ARG:HD2  | 2.44                     | 0.43              |
| 33:DA:775:G:C2'    | 33:DA:776:G:H5'   | 2.48                     | 0.43              |
| 33:DA:783:C:O5'    | 33:DA:783:C:H6    | 2.02                     | 0.43              |
| 33:DA:973:G:H1'    | 42:DJ:56:HIS:HA   | 2.00                     | 0.43              |
| 33:DA:989:U:H1'    | 33:DA:1016:A:H2   | 1.81                     | 0.43              |
| 33:DA:1021:A:C2    | 33:DA:1022:A:C5   | 3.06                     | 0.43              |
| 33:DA:1079:G:C4    | 33:DA:1080:A:N1   | 2.86                     | 0.43              |
| 33:DA:1083:U:H5    | 33:DA:1084:G:C6   | 2.36                     | 0.43              |
| 33:DA:1428:A:C2    | 33:DA:1473:G:N3   | 2.85                     | 0.43              |
| 34:DB:16:GLY:HA3   | 34:DB:39:ILE:HA   | 2.00                     | 0.43              |
| 37:DE:65:LYS:HB3   | 37:DE:65:LYS:NZ   | 2.32                     | 0.43              |
| 38:DF:99:ALA:HA    | 50:DR:23:LYS:NZ   | 2.33                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:DH:110:MET:HB3 | 40:DH:111:THR:H   | 1.65                     | 0.43              |
| 42:DJ:37:ARG:HB3  | 42:DJ:38:GLY:H    | 1.62                     | 0.43              |
| 47:DO:87:ARG:O    | 47:DO:87:ARG:HG3  | 2.18                     | 0.43              |
| 48:DP:36:VAL:O    | 48:DP:36:VAL:HG13 | 2.18                     | 0.43              |
| 49:DQ:57:VAL:O    | 49:DQ:77:VAL:HG13 | 2.17                     | 0.43              |
| 51:DS:7:GLY:N     | 51:DS:8:PRO:HD3   | 2.24                     | 0.43              |
| 3:A2:24:THR:HB    | 3:A2:27:GLY:H     | 1.82                     | 0.43              |
| 3:A2:41:ARG:HD3   | 3:A2:41:ARG:HA    | 1.59                     | 0.43              |
| 5:A4:37:GLN:HE22  | 8:AB:1124:G:C1'   | 2.31                     | 0.43              |
| 8:AB:118:A:C8     | 8:AB:119:A:H8     | 2.31                     | 0.43              |
| 8:AB:149:A:H2'    | 8:AB:150:U:H5'    | 1.99                     | 0.43              |
| 8:AB:280:U:H3'    | 8:AB:281:C:H5     | 1.82                     | 0.43              |
| 8:AB:311:A:C4     | 8:AB:332:A:N7     | 2.86                     | 0.43              |
| 8:AB:343:C:H5'    | 8:AB:344:A:OP2    | 2.19                     | 0.43              |
| 8:AB:381:G:C5     | 8:AB:382:A:C8     | 3.06                     | 0.43              |
| 8:AB:587:C:C2     | 8:AB:671:C:C6     | 3.06                     | 0.43              |
| 8:AB:604:G:O6     | 8:AB:625:G:C6     | 2.70                     | 0.43              |
| 8:AB:604:G:C6     | 8:AB:625:G:C2     | 3.06                     | 0.43              |
| 8:AB:608:A:C5     | 8:AB:621:A:C5     | 3.06                     | 0.43              |
| 8:AB:672:C:H5'    | 8:AB:673:C:OP2    | 2.18                     | 0.43              |
| 8:AB:729:G:C2     | 8:AB:1775:U:C2    | 3.06                     | 0.43              |
| 8:AB:751:A:N7     | 8:AB:789:A:N1     | 2.66                     | 0.43              |
| 8:AB:769:U:C6     | 8:AB:770:G:N7     | 2.86                     | 0.43              |
| 8:AB:841:G:N1     | 8:AB:938:G:C6     | 2.86                     | 0.43              |
| 8:AB:978:G:H2'    | 8:AB:979:A:H8     | 1.83                     | 0.43              |
| 8:AB:1001:A:H61   | 8:AB:1154:G:C2'   | 2.31                     | 0.43              |
| 8:AB:1019:U:HO2'  | 8:AB:1021:A:H2    | 1.64                     | 0.43              |
| 8:AB:1202:G:N7    | 8:AB:1203:U:C2    | 2.86                     | 0.43              |
| 8:AB:1258:U:H4'   | 11:AE:79:ARG:HD3  | 2.00                     | 0.43              |
| 8:AB:1277:G:O2'   | 20:AN:24:MET:HB2  | 2.19                     | 0.43              |
| 8:AB:1622:G:O2'   | 8:AB:1623:G:H5'   | 2.18                     | 0.43              |
| 8:AB:1629:U:H5''  | 8:AB:1630:A:OP2   | 2.19                     | 0.43              |
| 8:AB:1675:C:O5'   | 8:AB:1675:C:H6    | 2.01                     | 0.43              |
| 8:AB:1808:A:C3'   | 8:AB:1809:A:H8    | 2.28                     | 0.43              |
| 8:AB:1945:G:C2    | 8:AB:1946:U:C5    | 3.06                     | 0.43              |
| 8:AB:2027:G:N1    | 8:AB:2028:U:C4    | 2.86                     | 0.43              |
| 8:AB:2530:A:P     | 8:AB:2535:G:H22   | 2.42                     | 0.43              |
| 8:AB:2597:G:OP1   | 9:AC:239:PHE:CD2  | 2.71                     | 0.43              |
| 8:AB:2611:C:O2    | 8:AB:2611:C:H2'   | 2.18                     | 0.43              |
| 8:AB:2770:G:C4    | 8:AB:2771:C:H5    | 2.37                     | 0.43              |
| 8:AB:2875:C:OP1   | 20:AN:4:ARG:NH2   | 2.51                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2876:G:C5    | 8:AB:2877:G:N7     | 2.87                     | 0.43              |
| 9:AC:58:LYS:HB2   | 9:AC:58:LYS:HZ2    | 1.83                     | 0.43              |
| 9:AC:161:VAL:O    | 9:AC:162:GLN:O     | 2.35                     | 0.43              |
| 10:AD:33:ARG:NH1  | 10:AD:94:GLN:O     | 2.51                     | 0.43              |
| 10:AD:145:SER:O   | 10:AD:146:ILE:HG13 | 2.18                     | 0.43              |
| 11:AE:6:LYS:HG2   | 11:AE:11:ALA:O     | 2.18                     | 0.43              |
| 11:AE:17:THR:OG1  | 11:AE:20:GLY:HA2   | 2.18                     | 0.43              |
| 11:AE:111:GLU:O   | 11:AE:113:VAL:HG12 | 2.18                     | 0.43              |
| 15:AI:6:ALA:O     | 15:AI:7:TYR:HB3    | 2.18                     | 0.43              |
| 15:AI:20:SER:H    | 15:AI:21:PRO:HD3   | 1.80                     | 0.43              |
| 16:AJ:34:ARG:HG3  | 16:AJ:39:LYS:CE    | 2.37                     | 0.43              |
| 18:AL:124:GLY:C   | 18:AL:125:LEU:CG   | 2.84                     | 0.43              |
| 19:AM:33:LEU:HD22 | 19:AM:124:LEU:HB2  | 2.01                     | 0.43              |
| 21:AO:13:ARG:O    | 21:AO:16:ARG:HD2   | 2.19                     | 0.43              |
| 22:AP:59:THR:HG23 | 22:AP:76:HIS:CD2   | 2.53                     | 0.43              |
| 23:AQ:16:ILE:H    | 23:AQ:16:ILE:HG12  | 1.66                     | 0.43              |
| 23:AQ:46:TYR:HE1  | 23:AQ:50:ARG:HE    | 1.65                     | 0.43              |
| 26:AT:60:THR:HB   | 26:AT:81:LYS:CE    | 2.49                     | 0.43              |
| 29:AW:31:LEU:HB3  | 29:AW:32:ALA:H     | 1.48                     | 0.43              |
| 32:AZ:3:LYS:O     | 32:AZ:4:ASP:C      | 2.57                     | 0.43              |
| 33:BA:57:G:H8     | 33:BA:57:G:C5'     | 2.31                     | 0.43              |
| 33:BA:229:U:H2'   | 33:BA:230:G:C8     | 2.52                     | 0.43              |
| 33:BA:266:G:H22   | 33:BA:270:A:N6     | 2.14                     | 0.43              |
| 33:BA:303:A:C6    | 33:BA:304:U:C6     | 3.06                     | 0.43              |
| 33:BA:468:A:H8    | 33:BA:469:C:C6     | 2.36                     | 0.43              |
| 33:BA:509:A:O5'   | 33:BA:510:A:P      | 2.76                     | 0.43              |
| 33:BA:528:C:C4    | 33:BA:529:G:N7     | 2.85                     | 0.43              |
| 33:BA:766:A:H2'   | 33:BA:767:A:O4'    | 2.17                     | 0.43              |
| 33:BA:803:G:C5    | 33:BA:804:U:C4     | 3.06                     | 0.43              |
| 33:BA:940:C:H2'   | 33:BA:941:G:C8     | 2.54                     | 0.43              |
| 33:BA:953:G:H2'   | 33:BA:954:G:H5''   | 2.00                     | 0.43              |
| 33:BA:1006:G:N2   | 33:BA:1007:U:O2    | 2.51                     | 0.43              |
| 33:BA:1014:A:C1'  | 51:BS:33:TRP:HB2   | 2.48                     | 0.43              |
| 33:BA:1195:C:N3   | 33:BA:1197:A:N7    | 2.66                     | 0.43              |
| 33:BA:1402:C:C5   | 33:BA:1403:C:O2    | 2.71                     | 0.43              |
| 33:BA:1515:G:C2   | 33:BA:1521:C:N3    | 2.85                     | 0.43              |
| 35:BC:178:ARG:HB3 | 35:BC:206:ILE:HA   | 1.99                     | 0.43              |
| 36:BD:136:VAL:O   | 36:BD:137:SER:C    | 2.57                     | 0.43              |
| 37:BE:91:SER:HB3  | 37:BE:135:VAL:HG12 | 1.98                     | 0.43              |
| 37:BE:110:MET:CE  | 37:BE:110:MET:N    | 2.80                     | 0.43              |
| 39:BG:95:ARG:O    | 39:BG:96:ASN:C     | 2.56                     | 0.43              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 40:BH:37:ASN:C   | 40:BH:37:ASN:HD22 | 2.19                     | 0.43              |
| 41:BI:36:GLN:O   | 41:BI:36:GLN:HG2  | 2.18                     | 0.43              |
| 45:BM:10:ASP:HA  | 45:BM:44:ILE:CD1  | 2.39                     | 0.43              |
| 45:BM:94:LEU:N   | 45:BM:108:ARG:HE  | 2.17                     | 0.43              |
| 46:BN:12:ARG:HA  | 46:BN:15:LEU:CD1  | 2.42                     | 0.43              |
| 48:BP:52:LEU:O   | 48:BP:53:ASP:HB3  | 2.18                     | 0.43              |
| 5:C4:32:LYS:HE3  | 5:C4:32:LYS:HB3   | 1.80                     | 0.43              |
| 7:CA:29:A:P      | 7:CA:29:A:C8      | 3.11                     | 0.43              |
| 7:CA:99:A:H2'    | 7:CA:100:G:H8     | 1.83                     | 0.43              |
| 8:CB:55:G:N2     | 8:CB:116:C:C2     | 2.86                     | 0.43              |
| 8:CB:134:G:C2    | 8:CB:146:A:C2     | 3.05                     | 0.43              |
| 8:CB:201:C:C4    | 8:CB:202:U:C5     | 3.06                     | 0.43              |
| 8:CB:245:G:C6    | 8:CB:246:C:C5     | 3.06                     | 0.43              |
| 8:CB:298:G:H22   | 8:CB:339:U:H5     | 1.65                     | 0.43              |
| 8:CB:397:U:OP1   | 32:CZ:29:GLY:CA   | 2.52                     | 0.43              |
| 8:CB:415:A:C2'   | 8:CB:416:U:H5'    | 2.49                     | 0.43              |
| 8:CB:467:G:C6    | 8:CB:468:G:N7     | 2.86                     | 0.43              |
| 8:CB:482:A:N7    | 8:CB:506:G:C5     | 2.86                     | 0.43              |
| 8:CB:685:A:HO2'  | 8:CB:686:U:P      | 2.41                     | 0.43              |
| 8:CB:849:A:C6    | 8:CB:850:U:C4     | 3.05                     | 0.43              |
| 8:CB:974:G:C2    | 8:CB:1186:G:C6    | 3.06                     | 0.43              |
| 8:CB:974:G:P     | 8:CB:1186:G:N2    | 2.92                     | 0.43              |
| 8:CB:978:G:N2    | 8:CB:986:C:H1'    | 2.32                     | 0.43              |
| 8:CB:1088:A:O3'  | 8:CB:1089:A:H8    | 2.01                     | 0.43              |
| 8:CB:1202:G:N7   | 8:CB:1203:U:C2    | 2.87                     | 0.43              |
| 8:CB:1276:A:H5'' | 8:CB:1276:A:C8    | 2.53                     | 0.43              |
| 8:CB:1417:C:H42  | 8:CB:1581:G:H1    | 1.65                     | 0.43              |
| 8:CB:1451:C:H1'  | 8:CB:1452:G:N7    | 2.33                     | 0.43              |
| 8:CB:1523:U:H3'  | 8:CB:1524:G:H5'   | 2.00                     | 0.43              |
| 8:CB:1558:C:H1'  | 8:CB:1560:G:N7    | 2.33                     | 0.43              |
| 8:CB:1707:G:C8   | 8:CB:1707:G:C5'   | 3.01                     | 0.43              |
| 8:CB:1745:A:H3'  | 8:CB:1746:A:H8    | 1.82                     | 0.43              |
| 8:CB:1815:A:N7   | 8:CB:1817:G:C4    | 2.87                     | 0.43              |
| 8:CB:2000:C:H2'  | 8:CB:2001:C:H6    | 1.83                     | 0.43              |
| 8:CB:2016:U:O2'  | 8:CB:2017:U:OP1   | 2.30                     | 0.43              |
| 8:CB:2024:G:H5'' | 10:CD:154:LYS:HZ2 | 1.81                     | 0.43              |
| 8:CB:2027:G:C2   | 8:CB:2028:U:C6    | 3.06                     | 0.43              |
| 8:CB:2153:C:H2'  | 8:CB:2154:A:C8    | 2.53                     | 0.43              |
| 8:CB:2205:A:C4   | 8:CB:2206:C:C5    | 3.06                     | 0.43              |
| 8:CB:2604:U:H2'  | 8:CB:2605:U:H6    | 1.84                     | 0.43              |
| 8:CB:2647:U:HO2' | 8:CB:2648:G:H8    | 1.66                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2760:C:H2'   | 8:CB:2761:A:H5''   | 2.00                     | 0.43              |
| 8:CB:2831:G:H5'   | 8:CB:2834:G:O2'    | 2.18                     | 0.43              |
| 9:CC:20:ASN:HA    | 9:CC:21:PRO:HD3    | 1.47                     | 0.43              |
| 9:CC:32:LEU:N     | 9:CC:32:LEU:CD1    | 2.82                     | 0.43              |
| 9:CC:70:LYS:HB2   | 9:CC:101:ARG:NH2   | 2.33                     | 0.43              |
| 9:CC:92:LEU:HD21  | 9:CC:100:ARG:HD3   | 2.00                     | 0.43              |
| 9:CC:204:LEU:HB3  | 9:CC:210:ALA:HB2   | 2.01                     | 0.43              |
| 9:CC:250:GLN:OE1  | 9:CC:250:GLN:N     | 2.51                     | 0.43              |
| 10:CD:6:GLY:HA3   | 10:CD:199:SER:O    | 2.17                     | 0.43              |
| 11:CE:120:VAL:CA  | 11:CE:189:THR:HG21 | 2.48                     | 0.43              |
| 13:CG:145:ALA:O   | 13:CG:146:ASP:C    | 2.57                     | 0.43              |
| 15:CI:19:PRO:O    | 15:CI:24:GLY:HA3   | 2.18                     | 0.43              |
| 16:CJ:39:LYS:HA   | 16:CJ:39:LYS:HD3   | 1.74                     | 0.43              |
| 17:CK:31:ARG:C    | 17:CK:32:TYR:HD1   | 2.21                     | 0.43              |
| 18:CL:79:LEU:HD11 | 18:CL:112:LEU:HD22 | 2.01                     | 0.43              |
| 18:CL:126:ARG:NH1 | 18:CL:127:VAL:CA   | 2.81                     | 0.43              |
| 19:CM:11:LYS:HG3  | 19:CM:12:MET:H     | 1.83                     | 0.43              |
| 19:CM:42:THR:CG2  | 19:CM:45:GLN:NE2   | 2.81                     | 0.43              |
| 20:CN:52:ILE:HD13 | 20:CN:52:ILE:HA    | 1.76                     | 0.43              |
| 20:CN:108:ALA:HA  | 20:CN:109:PRO:HD2  | 1.79                     | 0.43              |
| 22:CP:54:LEU:N    | 22:CP:58:PHE:CE1   | 2.87                     | 0.43              |
| 23:CQ:94:LEU:HD12 | 23:CQ:94:LEU:C     | 2.38                     | 0.43              |
| 24:CR:25:LEU:C    | 24:CR:27:ILE:H     | 2.19                     | 0.43              |
| 25:CS:22:ASP:C    | 25:CS:24:ILE:H     | 2.21                     | 0.43              |
| 25:CS:23:LEU:HA   | 25:CS:23:LEU:HD22  | 1.76                     | 0.43              |
| 28:CV:23:ALA:O    | 28:CV:24:ASN:HB2   | 2.17                     | 0.43              |
| 29:CW:67:LYS:HB2  | 29:CW:67:LYS:HE2   | 1.84                     | 0.43              |
| 33:DA:137:U:C2    | 33:DA:227:G:C2     | 3.07                     | 0.43              |
| 33:DA:243:A:C2    | 33:DA:246:A:C8     | 3.06                     | 0.43              |
| 33:DA:402:G:N1    | 33:DA:403:C:N4     | 2.66                     | 0.43              |
| 33:DA:520:A:N7    | 33:DA:521:G:N7     | 2.66                     | 0.43              |
| 33:DA:592:G:N2    | 33:DA:648:A:H1'    | 2.34                     | 0.43              |
| 33:DA:613:C:N3    | 33:DA:627:G:O6     | 2.52                     | 0.43              |
| 33:DA:723:U:C6    | 33:DA:723:U:H3'    | 2.53                     | 0.43              |
| 33:DA:786:G:C6    | 33:DA:787:A:N7     | 2.86                     | 0.43              |
| 33:DA:799:G:O6    | 33:DA:800:G:N1     | 2.51                     | 0.43              |
| 33:DA:818:G:C3'   | 33:DA:819:A:H5''   | 2.48                     | 0.43              |
| 33:DA:878:A:OP1   | 40:DH:79:ARG:HB2   | 2.18                     | 0.43              |
| 33:DA:946:A:H8    | 33:DA:946:A:O5'    | 2.01                     | 0.43              |
| 33:DA:986:U:C5    | 33:DA:987:G:N7     | 2.86                     | 0.43              |
| 33:DA:1004:A:C6   | 33:DA:1026:G:C8    | 3.06                     | 0.43              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:DA:1013:G:N2  | 33:DA:1015:G:H3'  | 2.32                     | 0.43              |
| 33:DA:1065:U:O4' | 33:DA:1190:G:N2   | 2.52                     | 0.43              |
| 33:DA:1080:A:H2' | 33:DA:1081:A:O4'  | 2.18                     | 0.43              |
| 33:DA:1187:G:C4  | 33:DA:1188:A:N7   | 2.86                     | 0.43              |
| 33:DA:1266:G:C5  | 33:DA:1268:G:OP2  | 2.71                     | 0.43              |
| 33:DA:1422:G:H2' | 33:DA:1423:G:C5'  | 2.47                     | 0.43              |
| 36:DD:40:HIS:O   | 36:DD:43:ARG:HB2  | 2.18                     | 0.43              |
| 36:DD:131:ILE:O  | 36:DD:132:ALA:C   | 2.56                     | 0.43              |
| 37:DE:53:ARG:HB3 | 37:DE:53:ARG:CZ   | 2.44                     | 0.43              |
| 38:DF:43:GLY:O   | 38:DF:58:HIS:HA   | 2.18                     | 0.43              |
| 49:DQ:4:ILE:CD1  | 49:DQ:6:THR:HG23  | 2.48                     | 0.43              |
| 52:DT:8:LYS:C    | 52:DT:10:ALA:N    | 2.71                     | 0.43              |
| 1:A0:6:LYS:HA    | 1:A0:7:PRO:HD2    | 1.93                     | 0.43              |
| 2:A1:40:PRO:HB2  | 2:A1:43:ARG:NH1   | 2.34                     | 0.43              |
| 8:AB:157:C:H2'   | 8:AB:158:U:O4'    | 2.18                     | 0.43              |
| 8:AB:161:A:C6    | 8:AB:162:U:C5     | 3.06                     | 0.43              |
| 8:AB:523:C:C6    | 8:AB:523:C:C3'    | 3.01                     | 0.43              |
| 8:AB:529:A:N7    | 8:AB:2023:C:C4    | 2.86                     | 0.43              |
| 8:AB:744:U:OP1   | 10:AD:136:ASN:HB3 | 2.18                     | 0.43              |
| 8:AB:841:G:C2    | 8:AB:938:G:C2     | 3.06                     | 0.43              |
| 8:AB:925:A:C6    | 8:AB:926:G:C5     | 3.07                     | 0.43              |
| 8:AB:974:G:H8    | 8:AB:990:A:H62    | 1.65                     | 0.43              |
| 8:AB:986:C:H2'   | 8:AB:986:C:O2     | 2.18                     | 0.43              |
| 8:AB:1030:C:C6   | 8:AB:1030:C:C3'   | 3.01                     | 0.43              |
| 8:AB:1150:C:C2'  | 8:AB:1151:A:H5'   | 2.48                     | 0.43              |
| 8:AB:1724:G:H2'  | 8:AB:1725:U:O4'   | 2.18                     | 0.43              |
| 8:AB:1835:G:C6   | 8:AB:1836:C:N4    | 2.86                     | 0.43              |
| 8:AB:1839:G:C6   | 8:AB:1927:A:C2    | 3.06                     | 0.43              |
| 8:AB:1891:G:O2'  | 8:AB:2235:G:O2'   | 2.35                     | 0.43              |
| 8:AB:1911:U:H6   | 8:AB:1911:U:O5'   | 2.02                     | 0.43              |
| 8:AB:1987:A:N6   | 8:AB:1988:G:O6    | 2.51                     | 0.43              |
| 8:AB:2074:U:C2   | 8:AB:2436:G:N2    | 2.86                     | 0.43              |
| 8:AB:2101:A:C2   | 8:AB:2189:U:O2    | 2.72                     | 0.43              |
| 8:AB:2155:U:H3'  | 8:AB:2156:G:C8    | 2.54                     | 0.43              |
| 8:AB:2259:U:O2   | 8:AB:2260:C:C6    | 2.72                     | 0.43              |
| 8:AB:2278:A:C2   | 8:AB:2279:G:C4    | 3.06                     | 0.43              |
| 8:AB:2331:G:C2'  | 29:AW:69:GLU:HG3  | 2.47                     | 0.43              |
| 8:AB:2337:G:C2   | 8:AB:2338:C:C6    | 3.06                     | 0.43              |
| 8:AB:2387:U:O4'  | 29:AW:37:VAL:HG11 | 2.18                     | 0.43              |
| 8:AB:2405:G:N2   | 8:AB:2413:G:O6    | 2.51                     | 0.43              |
| 8:AB:2575:C:C5'  | 8:AB:2576:G:OP2   | 2.67                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2685:G:C2     | 8:AB:2725:A:C2    | 3.06                     | 0.43              |
| 8:AB:2747:G:N2     | 8:AB:2757:A:N6    | 2.67                     | 0.43              |
| 9:AC:62:ARG:O      | 9:AC:62:ARG:CD    | 2.65                     | 0.43              |
| 9:AC:141:HIS:CE1   | 9:AC:156:SER:OG   | 2.71                     | 0.43              |
| 9:AC:163:ILE:O     | 9:AC:164:VAL:HG22 | 2.18                     | 0.43              |
| 10:AD:26:VAL:O     | 10:AD:26:VAL:HG22 | 2.18                     | 0.43              |
| 10:AD:48:ILE:HG22  | 10:AD:49:GLN:N    | 2.33                     | 0.43              |
| 11:AE:164:LEU:CG   | 11:AE:165:HIS:N   | 2.81                     | 0.43              |
| 11:AE:193:VAL:HG22 | 11:AE:199:MET:HA  | 2.00                     | 0.43              |
| 12:AF:63:LYS:HA    | 12:AF:64:PRO:HD3  | 1.76                     | 0.43              |
| 13:AG:22:VAL:CG2   | 13:AG:23:ILE:N    | 2.82                     | 0.43              |
| 14:AH:6:LEU:HA     | 14:AH:15:LEU:CA   | 2.48                     | 0.43              |
| 15:AI:70:THR:CG2   | 15:AI:71:LYS:N    | 2.82                     | 0.43              |
| 16:AJ:19:ASP:OD2   | 16:AJ:20:ALA:N    | 2.50                     | 0.43              |
| 16:AJ:98:GLU:HG3   | 16:AJ:99:ARG:N    | 2.33                     | 0.43              |
| 17:AK:43:ILE:HG22  | 17:AK:43:ILE:O    | 2.17                     | 0.43              |
| 17:AK:68:GLY:HA3   | 17:AK:78:ARG:HB3  | 2.00                     | 0.43              |
| 18:AL:126:ARG:NH1  | 18:AL:127:VAL:HA  | 2.33                     | 0.43              |
| 19:AM:42:THR:HG23  | 19:AM:45:GLN:NE2  | 2.33                     | 0.43              |
| 19:AM:45:GLN:O     | 19:AM:48:ALA:HB3  | 2.18                     | 0.43              |
| 20:AN:65:LEU:HG    | 20:AN:69:ARG:HG2  | 2.00                     | 0.43              |
| 21:AO:95:SER:O     | 21:AO:96:GLY:C    | 2.57                     | 0.43              |
| 22:AP:24:THR:O     | 22:AP:26:GLU:N    | 2.51                     | 0.43              |
| 27:AU:38:ILE:O     | 27:AU:39:ASN:CB   | 2.56                     | 0.43              |
| 31:AY:18:LYS:O     | 31:AY:21:ALA:N    | 2.49                     | 0.43              |
| 32:AZ:8:LYS:HG3    | 32:AZ:9:TYR:O     | 2.18                     | 0.43              |
| 32:AZ:48:GLN:NE2   | 32:AZ:49:ARG:N    | 2.66                     | 0.43              |
| 33:BA:15:G:O6      | 33:BA:921:U:N3    | 2.51                     | 0.43              |
| 33:BA:33:A:O5'     | 33:BA:33:A:C8     | 2.63                     | 0.43              |
| 33:BA:93:U:O5'     | 33:BA:93:U:H6     | 2.01                     | 0.43              |
| 33:BA:162:A:OP2    | 33:BA:163:C:C5    | 2.71                     | 0.43              |
| 33:BA:490:C:O2'    | 33:BA:491:G:H5'   | 2.18                     | 0.43              |
| 33:BA:547:A:H4'    | 33:BA:548:G:O5'   | 2.19                     | 0.43              |
| 33:BA:604:G:H2'    | 33:BA:605:U:O4'   | 2.18                     | 0.43              |
| 33:BA:763:G:C5     | 33:BA:764:C:C5    | 3.05                     | 0.43              |
| 33:BA:784:A:N6     | 33:BA:799:G:N1    | 2.67                     | 0.43              |
| 33:BA:959:A:N7     | 33:BA:960:U:C6    | 2.87                     | 0.43              |
| 33:BA:1440:U:O2    | 33:BA:1440:U:H2'  | 2.19                     | 0.43              |
| 33:BA:1515:G:N2    | 33:BA:1521:C:C2   | 2.87                     | 0.43              |
| 34:BB:18:GLN:HG2   | 34:BB:189:ASN:OD1 | 2.19                     | 0.43              |
| 34:BB:153:MET:SD   | 34:BB:155:GLY:O   | 2.76                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BC:6:PRO:HG2    | 35:BC:183:TYR:CB  | 2.48                     | 0.43              |
| 35:BC:135:ARG:C    | 35:BC:137:VAL:N   | 2.72                     | 0.43              |
| 36:BD:58:GLN:HB2   | 36:BD:62:ARG:NE   | 2.34                     | 0.43              |
| 37:BE:76:ASN:CG    | 37:BE:77:ASN:N    | 2.69                     | 0.43              |
| 38:BF:25:TYR:HD2   | 38:BF:25:TYR:HA   | 1.72                     | 0.43              |
| 39:BG:6:ILE:CG1    | 39:BG:7:GLY:H     | 2.28                     | 0.43              |
| 39:BG:91:ARG:O     | 39:BG:94:ARG:HG3  | 2.18                     | 0.43              |
| 39:BG:99:ALA:O     | 39:BG:100:MET:C   | 2.55                     | 0.43              |
| 40:BH:113:ARG:HH21 | 40:BH:114:ALA:HB2 | 1.83                     | 0.43              |
| 41:BI:44:ARG:NH1   | 41:BI:44:ARG:N    | 2.65                     | 0.43              |
| 41:BI:82:ILE:O     | 41:BI:86:LEU:HB2  | 2.18                     | 0.43              |
| 43:BK:113:THR:HG22 | 43:BK:114:PRO:CD  | 2.46                     | 0.43              |
| 44:BL:19:ASN:N     | 44:BL:19:ASN:OD1  | 2.50                     | 0.43              |
| 44:BL:42:LYS:HE2   | 44:BL:90:PRO:CG   | 2.48                     | 0.43              |
| 44:BL:80:LEU:HD12  | 44:BL:80:LEU:HA   | 1.88                     | 0.43              |
| 46:BN:33:VAL:C     | 46:BN:35:ALA:H    | 2.22                     | 0.43              |
| 47:BO:26:VAL:O     | 47:BO:29:ALA:N    | 2.51                     | 0.43              |
| 49:BQ:45:VAL:HG22  | 49:BQ:72:TRP:HB2  | 2.01                     | 0.43              |
| 52:BT:24:ARG:NH1   | 52:BT:65:LEU:HD22 | 2.32                     | 0.43              |
| 53:BU:38:GLU:C     | 53:BU:40:PRO:HD2  | 2.39                     | 0.43              |
| 1:C0:40:HIS:HB2    | 20:CN:99:LYS:O    | 2.19                     | 0.43              |
| 4:C3:54:LEU:H      | 4:C3:54:LEU:HG    | 1.62                     | 0.43              |
| 5:C4:11:CYS:O      | 5:C4:12:ARG:HD2   | 2.17                     | 0.43              |
| 7:CA:10:G:HO2'     | 7:CA:11:C:H5'     | 1.82                     | 0.43              |
| 7:CA:49:C:O2'      | 7:CA:50:A:H5'     | 2.18                     | 0.43              |
| 8:CB:123:G:C2      | 8:CB:124:G:N7     | 2.86                     | 0.43              |
| 8:CB:123:G:C4      | 8:CB:124:G:C8     | 3.07                     | 0.43              |
| 8:CB:131:A:C6      | 8:CB:132:G:O6     | 2.71                     | 0.43              |
| 8:CB:197:A:C2      | 8:CB:198:C:C2     | 3.06                     | 0.43              |
| 8:CB:202:U:O2      | 8:CB:202:U:C2'    | 2.63                     | 0.43              |
| 8:CB:335:C:H5'     | 8:CB:335:C:H6     | 1.82                     | 0.43              |
| 8:CB:400:G:H3'     | 8:CB:400:G:H8     | 1.81                     | 0.43              |
| 8:CB:464:U:O4'     | 8:CB:686:U:H5     | 2.01                     | 0.43              |
| 8:CB:564:C:H5''    | 8:CB:565:C:OP2    | 2.17                     | 0.43              |
| 8:CB:608:A:C5      | 8:CB:621:A:C5     | 3.06                     | 0.43              |
| 8:CB:727:A:C2      | 9:CC:15:VAL:HG11  | 2.46                     | 0.43              |
| 8:CB:741:U:C2      | 8:CB:757:G:C2     | 3.06                     | 0.43              |
| 8:CB:861:A:H1'     | 8:CB:917:A:N6     | 2.33                     | 0.43              |
| 8:CB:949:G:N3      | 8:CB:949:G:H2'    | 2.34                     | 0.43              |
| 8:CB:994:C:P       | 23:CQ:49:ARG:HD2  | 2.58                     | 0.43              |
| 8:CB:1022:G:C4     | 8:CB:1140:C:N4    | 2.86                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1254:A:H5'   | 8:CB:1255:U:H5'   | 2.00                     | 0.43              |
| 8:CB:1668:A:C8    | 8:CB:1674:G:O6    | 2.71                     | 0.43              |
| 8:CB:1759:A:O2'   | 8:CB:1760:C:H5'   | 2.19                     | 0.43              |
| 8:CB:1823:G:C6    | 8:CB:1824:G:C5    | 3.06                     | 0.43              |
| 8:CB:1957:C:O2'   | 8:CB:1985:C:H1'   | 2.18                     | 0.43              |
| 8:CB:1989:G:C8    | 8:CB:1990:C:C5    | 3.06                     | 0.43              |
| 8:CB:2184:A:H2'   | 8:CB:2185:U:H6    | 1.83                     | 0.43              |
| 8:CB:2296:U:C2    | 8:CB:2333:A:C2    | 3.06                     | 0.43              |
| 8:CB:2299:U:H3'   | 8:CB:2299:U:C6    | 2.53                     | 0.43              |
| 8:CB:2307:G:H2'   | 55:CB:5403:HOH:O  | 2.19                     | 0.43              |
| 8:CB:2316:G:N3    | 8:CB:2317:A:C8    | 2.86                     | 0.43              |
| 8:CB:2375:G:C2    | 8:CB:2379:G:C6    | 3.06                     | 0.43              |
| 8:CB:2547:A:C6    | 8:CB:2548:U:O4    | 2.70                     | 0.43              |
| 8:CB:2850:A:C2    | 8:CB:2851:A:C8    | 3.06                     | 0.43              |
| 8:CB:2851:A:H2'   | 8:CB:2852:G:H8    | 1.83                     | 0.43              |
| 8:CB:2900:A:H2'   | 8:CB:2901:C:O5'   | 2.18                     | 0.43              |
| 9:CC:44:ASN:OD1   | 9:CC:48:ILE:O     | 2.36                     | 0.43              |
| 9:CC:206:LYS:O    | 9:CC:207:ALA:O    | 2.35                     | 0.43              |
| 10:CD:14:ILE:HG22 | 22:CP:79:VAL:HA   | 2.00                     | 0.43              |
| 11:CE:21:ARG:O    | 11:CE:110:SER:HB3 | 2.19                     | 0.43              |
| 12:CF:177:ARG:HG2 | 12:CF:178:LYS:H   | 1.82                     | 0.43              |
| 13:CG:71:LEU:O    | 13:CG:74:MET:N    | 2.51                     | 0.43              |
| 13:CG:84:LYS:HD3  | 13:CG:85:LYS:NZ   | 2.34                     | 0.43              |
| 13:CG:165:ASP:O   | 13:CG:166:GLU:O   | 2.36                     | 0.43              |
| 14:CH:101:ASP:HA  | 14:CH:104:THR:CB  | 2.20                     | 0.43              |
| 15:CI:52:LEU:CD2  | 15:CI:53:PRO:HD2  | 2.32                     | 0.43              |
| 16:CJ:101:ILE:O   | 16:CJ:104:ALA:N   | 2.52                     | 0.43              |
| 16:CJ:135:GLN:O   | 16:CJ:137:PRO:N   | 2.51                     | 0.43              |
| 17:CK:43:ILE:HG21 | 17:CK:53:LYS:C    | 2.39                     | 0.43              |
| 18:CL:39:LYS:O    | 18:CL:40:SER:O    | 2.37                     | 0.43              |
| 20:CN:2:ARG:O     | 20:CN:2:ARG:NH1   | 2.51                     | 0.43              |
| 21:CO:37:ALA:CB   | 21:CO:50:ALA:HB1  | 2.49                     | 0.43              |
| 23:CQ:67:ALA:C    | 23:CQ:69:ARG:H    | 2.22                     | 0.43              |
| 24:CR:6:GLN:O     | 24:CR:7:SER:HB3   | 2.18                     | 0.43              |
| 24:CR:12:HIS:NE2  | 24:CR:14:VAL:O    | 2.51                     | 0.43              |
| 27:CU:40:LEU:HD21 | 27:CU:59:GLU:HA   | 2.00                     | 0.43              |
| 28:CV:30:ILE:HG22 | 28:CV:93:ARG:HH21 | 1.83                     | 0.43              |
| 30:CX:6:LEU:H     | 30:CX:6:LEU:CD2   | 2.19                     | 0.43              |
| 30:CX:44:LYS:O    | 30:CX:45:GLN:C    | 2.56                     | 0.43              |
| 32:CZ:48:GLN:CD   | 32:CZ:49:ARG:O    | 2.56                     | 0.43              |
| 33:DA:18:C:C5     | 33:DA:19:A:N7     | 2.87                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:25:C:N4      | 33:DA:558:G:C2     | 2.87                     | 0.43              |
| 33:DA:106:C:N4     | 52:DT:9:ARG:HH12   | 2.16                     | 0.43              |
| 33:DA:435:A:N1     | 33:DA:436:C:N1     | 2.67                     | 0.43              |
| 33:DA:459:A:H2'    | 33:DA:459:A:N3     | 2.33                     | 0.43              |
| 33:DA:499:A:N6     | 33:DA:547:A:C8     | 2.87                     | 0.43              |
| 33:DA:532:A:C8     | 35:DC:192:TYR:OH   | 2.71                     | 0.43              |
| 33:DA:754:C:P      | 47:DO:71:ARG:HH22  | 2.41                     | 0.43              |
| 33:DA:814:A:N7     | 33:DA:816:A:N3     | 2.67                     | 0.43              |
| 33:DA:885:G:H2'    | 33:DA:886:G:C5'    | 2.49                     | 0.43              |
| 33:DA:886:G:C6     | 33:DA:912:C:N3     | 2.86                     | 0.43              |
| 33:DA:931:C:H2'    | 33:DA:932:C:H6     | 1.83                     | 0.43              |
| 33:DA:958:A:N6     | 33:DA:959:A:N1     | 2.66                     | 0.43              |
| 33:DA:1072:G:C6    | 33:DA:1073:U:C4    | 3.06                     | 0.43              |
| 33:DA:1193:G:H2'   | 33:DA:1194:U:H5'   | 2.00                     | 0.43              |
| 33:DA:1256:A:O4'   | 33:DA:1258:G:C4    | 2.72                     | 0.43              |
| 33:DA:1412:C:C2    | 33:DA:1413:A:N7    | 2.87                     | 0.43              |
| 33:DA:1465:A:O5'   | 33:DA:1465:A:H8    | 2.01                     | 0.43              |
| 34:DB:102:ASN:O    | 34:DB:103:TRP:C    | 2.57                     | 0.43              |
| 34:DB:128:LEU:HD11 | 34:DB:132:GLU:CB   | 2.47                     | 0.43              |
| 34:DB:135:MET:HB2  | 34:DB:136:ARG:HH11 | 1.83                     | 0.43              |
| 36:DD:40:HIS:O     | 36:DD:41:GLY:C     | 2.55                     | 0.43              |
| 36:DD:50:TYR:OH    | 36:DD:54:LEU:HD23  | 2.18                     | 0.43              |
| 36:DD:89:LEU:HD12  | 36:DD:89:LEU:HA    | 1.73                     | 0.43              |
| 36:DD:146:GLU:CD   | 36:DD:146:GLU:N    | 2.72                     | 0.43              |
| 39:DG:18:GLY:O     | 39:DG:19:SER:CB    | 2.65                     | 0.43              |
| 39:DG:97:ALA:O     | 39:DG:100:MET:HG3  | 2.18                     | 0.43              |
| 40:DH:38:VAL:O     | 40:DH:38:VAL:CG2   | 2.64                     | 0.43              |
| 40:DH:110:MET:HB3  | 40:DH:114:ALA:CB   | 2.48                     | 0.43              |
| 42:DJ:101:SER:HB2  | 42:DJ:102:LEU:H    | 1.56                     | 0.43              |
| 43:DK:33:ILE:CG1   | 43:DK:69:CYS:SG    | 3.07                     | 0.43              |
| 44:DL:81:ILE:HD12  | 44:DL:94:TYR:HB2   | 2.00                     | 0.43              |
| 1:A0:20:ALA:O      | 1:A0:21:LEU:O      | 2.35                     | 0.43              |
| 3:A2:8:SER:O       | 3:A2:12:ARG:HG3    | 2.17                     | 0.43              |
| 4:A3:12:ARG:O      | 4:A3:12:ARG:HD3    | 2.18                     | 0.43              |
| 7:AA:117:G:N3      | 7:AA:117:G:H2'     | 2.33                     | 0.43              |
| 8:AB:18:U:O2'      | 8:AB:554:U:OP1     | 2.33                     | 0.43              |
| 8:AB:27:G:O2'      | 8:AB:28:A:P        | 2.76                     | 0.43              |
| 8:AB:66:C:C2       | 8:AB:67:U:C6       | 3.06                     | 0.43              |
| 8:AB:86:G:OP1      | 27:AU:29:SER:CB    | 2.65                     | 0.43              |
| 8:AB:100:U:H1'     | 8:AB:101:A:C2      | 2.53                     | 0.43              |
| 8:AB:123:G:N2      | 8:AB:129:C:C4      | 2.86                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:191:A:H2'    | 8:AB:192:C:O4'    | 2.18                     | 0.43              |
| 8:AB:313:G:O2'    | 8:AB:314:C:H5'    | 2.19                     | 0.43              |
| 8:AB:349:U:C2'    | 8:AB:350:G:C5'    | 2.95                     | 0.43              |
| 8:AB:362:A:C4     | 8:AB:363:G:C8     | 3.06                     | 0.43              |
| 8:AB:378:C:C3'    | 8:AB:379:G:H5'    | 2.48                     | 0.43              |
| 8:AB:684:G:C2     | 8:AB:774:G:N1     | 2.87                     | 0.43              |
| 8:AB:684:G:C6     | 8:AB:774:G:C5     | 3.07                     | 0.43              |
| 8:AB:692:C:N4     | 8:AB:770:G:H1     | 2.15                     | 0.43              |
| 8:AB:813:U:H4'    | 8:AB:1226:A:O4'   | 2.18                     | 0.43              |
| 8:AB:837:C:O5'    | 8:AB:837:C:C6     | 2.71                     | 0.43              |
| 8:AB:970:U:O5'    | 8:AB:970:U:C6     | 2.69                     | 0.43              |
| 8:AB:994:C:O2     | 8:AB:994:C:H2'    | 2.19                     | 0.43              |
| 8:AB:1020:A:H4'   | 8:AB:1021:A:H5''  | 1.96                     | 0.43              |
| 8:AB:1110:G:O5'   | 8:AB:1110:G:H2'   | 2.18                     | 0.43              |
| 8:AB:1156:A:N7    | 23:AQ:47:ARG:NH1  | 2.66                     | 0.43              |
| 8:AB:1255:U:H6    | 8:AB:2502:G:H21   | 1.61                     | 0.43              |
| 8:AB:1262:A:C5    | 8:AB:1263:U:C5    | 3.06                     | 0.43              |
| 8:AB:1353:A:C8    | 8:AB:1378:A:C6    | 3.06                     | 0.43              |
| 8:AB:1372:U:O4'   | 8:AB:2214:C:C6    | 2.71                     | 0.43              |
| 8:AB:1488:C:H2'   | 8:AB:1489:C:H6    | 1.82                     | 0.43              |
| 8:AB:1563:U:O2'   | 8:AB:1564:C:H5'   | 2.18                     | 0.43              |
| 8:AB:1663:G:H5'   | 8:AB:1663:G:C8    | 2.42                     | 0.43              |
| 8:AB:1807:G:N2    | 8:AB:1811:G:O6    | 2.52                     | 0.43              |
| 8:AB:1943:U:O2    | 8:AB:1943:U:O5'   | 2.36                     | 0.43              |
| 8:AB:2048:G:H1    | 8:AB:2620:C:H42   | 1.66                     | 0.43              |
| 8:AB:2090:A:N1    | 8:AB:2091:C:C4    | 2.86                     | 0.43              |
| 8:AB:2285:C:C6    | 8:AB:2285:C:C3'   | 3.01                     | 0.43              |
| 8:AB:2306:C:P     | 8:AB:2307:G:N7    | 2.92                     | 0.43              |
| 8:AB:2351:G:O2'   | 8:AB:2352:A:C5'   | 2.66                     | 0.43              |
| 8:AB:2495:G:C6    | 8:AB:2496:C:N3    | 2.87                     | 0.43              |
| 8:AB:2543:G:H8    | 8:AB:2543:G:C5'   | 2.31                     | 0.43              |
| 8:AB:2717:C:HO2'  | 8:AB:2718:G:P     | 2.40                     | 0.43              |
| 8:AB:2817:U:C2'   | 8:AB:2818:U:O5'   | 2.67                     | 0.43              |
| 8:AB:2886:A:H2    | 8:AB:2887:A:C5    | 2.35                     | 0.43              |
| 9:AC:135:PRO:C    | 9:AC:137:GLY:H    | 2.22                     | 0.43              |
| 9:AC:161:VAL:HG12 | 9:AC:173:LEU:HD21 | 2.00                     | 0.43              |
| 9:AC:231:HIS:CE1  | 9:AC:242:HIS:ND1  | 2.87                     | 0.43              |
| 10:AD:165:MET:HB3 | 10:AD:166:GLY:H   | 1.66                     | 0.43              |
| 11:AE:179:SER:O   | 11:AE:183:PHE:HD2 | 2.00                     | 0.43              |
| 12:AF:144:LYS:HG3 | 12:AF:145:VAL:N   | 2.34                     | 0.43              |
| 13:AG:84:LYS:HE2  | 13:AG:164:ALA:HB3 | 2.00                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 15:AI:24:GLY:HA3   | 15:AI:25:PRO:HD3  | 1.86                     | 0.43              |
| 18:AL:78:ARG:CZ    | 18:AL:82:LEU:HG   | 2.48                     | 0.43              |
| 19:AM:136:MET:HG3  | 28:AV:76:ASP:CB   | 2.49                     | 0.43              |
| 22:AP:31:VAL:HG22  | 22:AP:81:ASP:OD2  | 2.18                     | 0.43              |
| 22:AP:36:LYS:C     | 22:AP:38:ARG:N    | 2.71                     | 0.43              |
| 22:AP:47:ILE:HA    | 22:AP:63:ILE:HG23 | 1.99                     | 0.43              |
| 27:AU:23:LYS:O     | 27:AU:25:LYS:N    | 2.52                     | 0.43              |
| 27:AU:62:ALA:O     | 27:AU:64:ILE:N    | 2.51                     | 0.43              |
| 29:AW:27:GLY:CA    | 29:AW:60:ALA:HA   | 2.48                     | 0.43              |
| 29:AW:35:ILE:HG21  | 29:AW:71:LYS:H    | 1.83                     | 0.43              |
| 32:AZ:59:ARG:HB2   | 32:AZ:61:ASN:H    | 1.83                     | 0.43              |
| 32:AZ:63:ARG:O     | 32:AZ:67:PRO:HD2  | 2.17                     | 0.43              |
| 33:BA:23:C:C2'     | 33:BA:24:U:H5'    | 2.48                     | 0.43              |
| 33:BA:38:G:N1      | 33:BA:397:A:C2    | 2.87                     | 0.43              |
| 33:BA:198:G:O5'    | 33:BA:198:G:H8    | 2.01                     | 0.43              |
| 33:BA:261:U:C5     | 52:BT:73:ARG:NH1  | 2.87                     | 0.43              |
| 33:BA:363:A:N3     | 44:BL:27:PRO:HG3  | 2.33                     | 0.43              |
| 33:BA:424:G:C8     | 33:BA:424:G:C5'   | 3.02                     | 0.43              |
| 33:BA:453:G:H2'    | 33:BA:454:G:O4'   | 2.18                     | 0.43              |
| 33:BA:552:U:C5'    | 44:BL:82:ARG:NE   | 2.80                     | 0.43              |
| 33:BA:656:G:N2     | 33:BA:751:U:C2    | 2.87                     | 0.43              |
| 33:BA:700:G:O4'    | 33:BA:704:A:H1'   | 2.18                     | 0.43              |
| 33:BA:719:C:H2'    | 50:BR:38:ILE:HG22 | 2.01                     | 0.43              |
| 33:BA:763:G:C4     | 33:BA:764:C:H5    | 2.36                     | 0.43              |
| 33:BA:784:A:C2     | 33:BA:785:G:C4    | 3.06                     | 0.43              |
| 33:BA:908:A:C8     | 33:BA:908:A:C3'   | 3.02                     | 0.43              |
| 33:BA:960:U:O2     | 33:BA:960:U:H2'   | 2.17                     | 0.43              |
| 33:BA:1248:A:C2    | 41:BI:71:ILE:HD11 | 2.53                     | 0.43              |
| 33:BA:1320:C:C6    | 33:BA:1320:C:H5'' | 2.53                     | 0.43              |
| 33:BA:1519:A:C8    | 33:BA:1520:C:O4'  | 2.71                     | 0.43              |
| 34:BB:35:ASN:ND2   | 34:BB:36:LYS:NZ   | 2.67                     | 0.43              |
| 36:BD:170:LEU:HD12 | 36:BD:170:LEU:C   | 2.39                     | 0.43              |
| 38:BF:46:GLN:HE21  | 38:BF:46:GLN:HB2  | 1.58                     | 0.43              |
| 38:BF:75:GLU:OE1   | 38:BF:75:GLU:HA   | 2.18                     | 0.43              |
| 44:BL:52:CYS:SG    | 44:BL:54:VAL:HG13 | 2.58                     | 0.43              |
| 50:BR:27:THR:CG2   | 50:BR:28:LEU:HD12 | 2.47                     | 0.43              |
| 51:BS:64:GLU:O     | 51:BS:66:VAL:HG23 | 2.17                     | 0.43              |
| 53:BU:20:ARG:CA    | 53:BU:24:LYS:HG3  | 2.43                     | 0.43              |
| 53:BU:36:PHE:C     | 53:BU:37:TYR:CG   | 2.91                     | 0.43              |
| 1:C0:27:LEU:HD11   | 8:CB:2886:A:C4    | 2.54                     | 0.43              |
| 4:C3:14:LYS:O      | 4:C3:21:PHE:HA    | 2.19                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 4:C3:41:ARG:HH11 | 4:C3:41:ARG:HG2  | 1.83                     | 0.43              |
| 4:C3:63:TYR:HB3  | 4:C3:64:ALA:H    | 1.49                     | 0.43              |
| 8:CB:40:U:H2'    | 8:CB:41:C:C6     | 2.53                     | 0.43              |
| 8:CB:194:G:C6    | 8:CB:195:A:N6    | 2.87                     | 0.43              |
| 8:CB:300:A:H1'   | 8:CB:319:G:C1'   | 2.48                     | 0.43              |
| 8:CB:579:G:H5'   | 8:CB:2017:U:H3'  | 2.01                     | 0.43              |
| 8:CB:728:G:O2'   | 9:CC:16:VAL:HG21 | 2.19                     | 0.43              |
| 8:CB:798:G:C6    | 8:CB:799:G:N7    | 2.86                     | 0.43              |
| 8:CB:806:C:O2    | 8:CB:2444:G:O2'  | 2.34                     | 0.43              |
| 8:CB:806:C:H2'   | 8:CB:807:U:H5'   | 1.98                     | 0.43              |
| 8:CB:838:C:O2'   | 8:CB:839:U:H5'   | 2.18                     | 0.43              |
| 8:CB:849:A:C6    | 8:CB:850:U:O4    | 2.71                     | 0.43              |
| 8:CB:862:G:H2'   | 8:CB:863:A:O5'   | 2.18                     | 0.43              |
| 8:CB:864:G:O6    | 8:CB:912:C:N3    | 2.51                     | 0.43              |
| 8:CB:982:C:C6    | 8:CB:2029:G:OP1  | 2.70                     | 0.43              |
| 8:CB:995:C:C4    | 23:CQ:56:PHE:HE2 | 2.36                     | 0.43              |
| 8:CB:1101:U:C4   | 8:CB:1102:C:C5   | 3.07                     | 0.43              |
| 8:CB:1150:C:H2'  | 8:CB:1151:A:H5'  | 2.00                     | 0.43              |
| 8:CB:1173:U:H2'  | 8:CB:1174:U:O4'  | 2.17                     | 0.43              |
| 8:CB:1191:G:C8   | 8:CB:1191:G:C3'  | 3.02                     | 0.43              |
| 8:CB:1197:G:N2   | 8:CB:1198:U:C2   | 2.86                     | 0.43              |
| 8:CB:1218:G:C5   | 8:CB:1232:G:O6   | 2.72                     | 0.43              |
| 8:CB:1253:A:H4'  | 8:CB:1254:A:OP2  | 2.18                     | 0.43              |
| 8:CB:1274:A:C8   | 8:CB:1274:A:C3'  | 3.01                     | 0.43              |
| 8:CB:1370:C:O4'  | 8:CB:1810:A:H2   | 2.01                     | 0.43              |
| 8:CB:1389:G:H2'  | 8:CB:1390:U:O4'  | 2.18                     | 0.43              |
| 8:CB:1408:G:C6   | 8:CB:1595:C:O2   | 2.71                     | 0.43              |
| 8:CB:1452:G:H8   | 8:CB:1452:G:O5'  | 2.02                     | 0.43              |
| 8:CB:1525:A:C5   | 8:CB:1526:C:C5   | 3.06                     | 0.43              |
| 8:CB:1601:G:N3   | 8:CB:1601:G:H2'  | 2.32                     | 0.43              |
| 8:CB:1603:A:C6   | 8:CB:1604:C:C2   | 3.06                     | 0.43              |
| 8:CB:1638:C:O2'  | 8:CB:2709:G:N2   | 2.51                     | 0.43              |
| 8:CB:1657:U:OP1  | 10:CD:140:HIS:O  | 2.37                     | 0.43              |
| 8:CB:1668:A:C2   | 8:CB:1670:C:N3   | 2.86                     | 0.43              |
| 8:CB:1791:A:H3'  | 8:CB:1791:A:C8   | 2.54                     | 0.43              |
| 8:CB:1797:G:H5'  | 9:CC:251:THR:HA  | 2.00                     | 0.43              |
| 8:CB:1805:A:H1'  | 9:CC:50:THR:OG1  | 2.18                     | 0.43              |
| 8:CB:1862:G:C2   | 8:CB:1881:C:N3   | 2.86                     | 0.43              |
| 8:CB:1889:A:C8   | 8:CB:1889:A:C3'  | 3.02                     | 0.43              |
| 8:CB:2061:G:N3   | 8:CB:2063:C:N4   | 2.67                     | 0.43              |
| 8:CB:2062:A:C2'  | 8:CB:2063:C:H5'  | 2.40                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2290:G:N1     | 8:CB:2343:U:O2     | 2.52                     | 0.43              |
| 8:CB:2306:C:P      | 8:CB:2307:G:N7     | 2.91                     | 0.43              |
| 8:CB:2351:G:O2'    | 8:CB:2352:A:C5'    | 2.66                     | 0.43              |
| 8:CB:2355:G:N1     | 8:CB:2356:U:C2     | 2.87                     | 0.43              |
| 8:CB:2648:G:C2     | 8:CB:2673:G:N3     | 2.86                     | 0.43              |
| 8:CB:2665:A:O2'    | 8:CB:2666:C:H5'    | 2.19                     | 0.43              |
| 8:CB:2789:C:O2     | 8:CB:2892:G:H4'    | 2.19                     | 0.43              |
| 9:CC:66:PHE:O      | 9:CC:67:LYS:HG3    | 2.19                     | 0.43              |
| 9:CC:113:ASP:N     | 9:CC:113:ASP:OD1   | 2.51                     | 0.43              |
| 9:CC:141:HIS:CD2   | 9:CC:190:THR:HB    | 2.54                     | 0.43              |
| 10:CD:59:ARG:HB3   | 10:CD:74:GLU:OE2   | 2.19                     | 0.43              |
| 10:CD:122:VAL:O    | 10:CD:128:ARG:NH2  | 2.43                     | 0.43              |
| 12:CF:92:GLY:O     | 12:CF:95:MET:HB3   | 2.18                     | 0.43              |
| 12:CF:107:VAL:HG12 | 12:CF:113:PHE:CZ   | 2.53                     | 0.43              |
| 13:CG:73:SER:O     | 13:CG:74:MET:HG3   | 2.18                     | 0.43              |
| 14:CH:36:ALA:C     | 14:CH:37:VAL:CG2   | 2.87                     | 0.43              |
| 14:CH:95:GLY:O     | 14:CH:99:ILE:HG12  | 2.18                     | 0.43              |
| 14:CH:108:VAL:HG12 | 14:CH:110:VAL:HG12 | 2.01                     | 0.43              |
| 15:CI:2:LYS:HB3    | 15:CI:2:LYS:NZ     | 2.33                     | 0.43              |
| 15:CI:110:GLN:HA   | 15:CI:113:ALA:HB2  | 2.00                     | 0.43              |
| 16:CJ:12:LYS:HE3   | 16:CJ:12:LYS:HB3   | 1.78                     | 0.43              |
| 17:CK:98:ARG:NH1   | 33:DA:339:C:OP2    | 2.51                     | 0.43              |
| 18:CL:79:LEU:HD11  | 18:CL:112:LEU:HD23 | 2.00                     | 0.43              |
| 19:CM:24:THR:HG23  | 19:CM:24:THR:O     | 2.17                     | 0.43              |
| 22:CP:13:LYS:HE2   | 22:CP:77:SER:HB3   | 1.99                     | 0.43              |
| 22:CP:92:ARG:HE    | 22:CP:111:GLU:N    | 2.15                     | 0.43              |
| 22:CP:99:LEU:HG    | 22:CP:99:LEU:O     | 2.19                     | 0.43              |
| 23:CQ:10:ARG:O     | 23:CQ:14:LYS:N     | 2.50                     | 0.43              |
| 24:CR:33:VAL:O     | 24:CR:35:PHE:CE2   | 2.72                     | 0.43              |
| 24:CR:42:ALA:HB1   | 24:CR:53:PHE:CG    | 2.53                     | 0.43              |
| 25:CS:24:ILE:O     | 25:CS:71:VAL:HG11  | 2.18                     | 0.43              |
| 25:CS:51:LEU:HA    | 25:CS:51:LEU:HD22  | 1.35                     | 0.43              |
| 25:CS:89:ALA:O     | 25:CS:90:LYS:CB    | 2.66                     | 0.43              |
| 26:CT:70:HIS:O     | 26:CT:71:GLY:O     | 2.36                     | 0.43              |
| 27:CU:78:LYS:HA    | 27:CU:78:LYS:HD3   | 1.83                     | 0.43              |
| 28:CV:24:ASN:O     | 28:CV:44:HIS:N     | 2.52                     | 0.43              |
| 29:CW:79:ILE:HD12  | 29:CW:79:ILE:O     | 2.18                     | 0.43              |
| 31:CY:7:THR:CA     | 31:CY:34:THR:HB    | 2.46                     | 0.43              |
| 33:DA:35:G:N1      | 33:DA:550:G:C6     | 2.86                     | 0.43              |
| 33:DA:46:G:N7      | 33:DA:366:A:N6     | 2.66                     | 0.43              |
| 33:DA:56:U:H2'     | 33:DA:57:G:H8      | 1.81                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:176:C:O4'   | 33:DA:1447:A:C2    | 2.71                     | 0.43              |
| 33:DA:352:C:H42   | 33:DA:357:G:N2     | 2.17                     | 0.43              |
| 33:DA:552:U:O2'   | 33:DA:553:A:H5'    | 2.18                     | 0.43              |
| 33:DA:590:U:H3    | 33:DA:649:A:H61    | 1.65                     | 0.43              |
| 33:DA:674:G:H22   | 33:DA:717:U:H1'    | 1.83                     | 0.43              |
| 33:DA:681:A:C2    | 33:DA:710:G:C2     | 3.07                     | 0.43              |
| 33:DA:721:G:O5'   | 33:DA:721:G:C2'    | 2.66                     | 0.43              |
| 33:DA:736:C:H2'   | 33:DA:737:C:C6     | 2.53                     | 0.43              |
| 33:DA:847:G:N2    | 33:DA:848:C:C2     | 2.86                     | 0.43              |
| 33:DA:977:A:P     | 46:DN:60:ARG:HH22  | 2.41                     | 0.43              |
| 33:DA:1152:A:H5'' | 33:DA:1152:A:C8    | 2.39                     | 0.43              |
| 33:DA:1300:G:H3'  | 33:DA:1300:G:H8    | 1.83                     | 0.43              |
| 33:DA:1359:C:H5'  | 55:DN:5002:HOH:O   | 2.18                     | 0.43              |
| 35:DC:40:GLN:HA   | 35:DC:43:THR:OG1   | 2.18                     | 0.43              |
| 36:DD:18:LEU:O    | 36:DD:20:LEU:N     | 2.51                     | 0.43              |
| 36:DD:62:ARG:C    | 36:DD:64:TYR:H     | 2.22                     | 0.43              |
| 36:DD:195:ASN:O   | 36:DD:198:LEU:HD22 | 2.19                     | 0.43              |
| 37:DE:66:ALA:O    | 37:DE:68:ARG:O     | 2.37                     | 0.43              |
| 40:DH:17:GLN:HE22 | 40:DH:69:ALA:HB1   | 1.82                     | 0.43              |
| 41:DI:64:ILE:HG22 | 41:DI:65:THR:N     | 2.33                     | 0.43              |
| 44:DL:12:ALA:O    | 44:DL:13:ARG:C     | 2.56                     | 0.43              |
| 44:DL:54:VAL:O    | 44:DL:54:VAL:HG23  | 2.18                     | 0.43              |
| 47:DO:32:THR:HG21 | 47:DO:86:LEU:HD11  | 2.00                     | 0.43              |
| 50:DR:24:ASP:C    | 50:DR:26:ALA:N     | 2.71                     | 0.43              |
| 50:DR:55:ALA:HA   | 50:DR:58:ILE:CD1   | 2.47                     | 0.43              |
| 2:A1:42:VAL:O     | 2:A1:43:ARG:CB     | 2.66                     | 0.43              |
| 4:A3:6:VAL:CG2    | 8:AB:253:C:N4      | 2.82                     | 0.43              |
| 4:A3:30:HIS:HD1   | 8:AB:2419:U:H5     | 1.58                     | 0.43              |
| 7:AA:17:C:H2'     | 7:AA:18:G:C8       | 2.46                     | 0.43              |
| 7:AA:26:C:H2'     | 7:AA:27:C:C6       | 2.54                     | 0.43              |
| 7:AA:78:A:C8      | 7:AA:99:A:N6       | 2.86                     | 0.43              |
| 7:AA:99:A:C6      | 7:AA:100:G:C5      | 3.07                     | 0.43              |
| 8:AB:200:U:C2'    | 8:AB:201:C:H5'     | 2.48                     | 0.43              |
| 8:AB:227:A:C4     | 8:AB:2407:A:H1'    | 2.52                     | 0.43              |
| 8:AB:303:G:C6     | 8:AB:304:U:N3      | 2.87                     | 0.43              |
| 8:AB:367:G:H2'    | 8:AB:368:A:O4'     | 2.19                     | 0.43              |
| 8:AB:517:C:C2'    | 8:AB:518:G:O5'     | 2.66                     | 0.43              |
| 8:AB:531:C:C6     | 8:AB:2035:G:C2     | 3.07                     | 0.43              |
| 8:AB:533:G:H5''   | 8:AB:533:G:C8      | 2.54                     | 0.43              |
| 8:AB:568:U:O5'    | 8:AB:945:A:N6      | 2.52                     | 0.43              |
| 8:AB:591:U:C4     | 8:AB:592:A:N7      | 2.86                     | 0.43              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 8:AB:712:G:C2     | 8:AB:720:U:O2    | 2.71                     | 0.43              |
| 8:AB:769:U:O2     | 8:AB:1379:U:H1'  | 2.18                     | 0.43              |
| 8:AB:792:A:N6     | 8:AB:2440:C:C6   | 2.86                     | 0.43              |
| 8:AB:871:U:P      | 19:AM:8:LYS:HA   | 2.58                     | 0.43              |
| 8:AB:994:C:O2'    | 8:AB:995:C:H3'   | 2.19                     | 0.43              |
| 8:AB:1030:C:OP1   | 19:AM:117:PHE:HZ | 2.01                     | 0.43              |
| 8:AB:1031:G:N3    | 8:AB:1124:G:C2   | 2.86                     | 0.43              |
| 8:AB:1105:U:O2'   | 8:AB:1106:G:H5'  | 2.18                     | 0.43              |
| 8:AB:1267:U:O2    | 8:AB:1267:U:H2'  | 2.17                     | 0.43              |
| 8:AB:1296:G:H2'   | 8:AB:1297:C:O5'  | 2.18                     | 0.43              |
| 8:AB:1322:A:C5    | 8:AB:1323:C:C5   | 3.06                     | 0.43              |
| 8:AB:1398:C:H2'   | 8:AB:1399:C:C6   | 2.54                     | 0.43              |
| 8:AB:1435:G:C4    | 8:AB:1436:G:C8   | 3.05                     | 0.43              |
| 8:AB:1549:A:C6    | 8:AB:1550:C:C4   | 3.06                     | 0.43              |
| 8:AB:1562:U:H2'   | 8:AB:1563:U:O4'  | 2.19                     | 0.43              |
| 8:AB:1606:C:H3'   | 8:AB:1606:C:C6   | 2.54                     | 0.43              |
| 8:AB:1641:A:N6    | 8:AB:1642:G:N3   | 2.67                     | 0.43              |
| 8:AB:1644:C:O2'   | 8:AB:1645:G:H5'  | 2.18                     | 0.43              |
| 8:AB:1652:A:H2'   | 8:AB:1653:G:H5'  | 1.99                     | 0.43              |
| 8:AB:1702:G:C8    | 8:AB:1702:G:C3'  | 3.01                     | 0.43              |
| 8:AB:1773:A:H4'   | 8:AB:1773:A:OP2  | 2.17                     | 0.43              |
| 8:AB:1829:A:N7    | 8:AB:1830:C:C6   | 2.86                     | 0.43              |
| 8:AB:1862:G:N1    | 8:AB:1881:C:N4   | 2.67                     | 0.43              |
| 8:AB:1944:U:O5'   | 8:AB:1944:U:H2'  | 2.18                     | 0.43              |
| 8:AB:1960:A:C8    | 8:AB:1961:C:C5   | 3.07                     | 0.43              |
| 8:AB:2384:U:O2    | 8:AB:2384:U:C2'  | 2.66                     | 0.43              |
| 8:AB:2524:G:O2'   | 8:AB:2741:A:H2   | 2.00                     | 0.43              |
| 8:AB:2635:A:O2'   | 10:AD:80:TRP:NE1 | 2.50                     | 0.43              |
| 8:AB:2694:G:N1    | 8:AB:2695:U:O2   | 2.51                     | 0.43              |
| 8:AB:2780:G:H4'   | 8:AB:2781:A:OP2  | 2.18                     | 0.43              |
| 8:AB:2813:A:C6    | 8:AB:2814:A:C6   | 3.06                     | 0.43              |
| 8:AB:2876:G:C6    | 8:AB:2877:G:C5   | 3.07                     | 0.43              |
| 9:AC:102:TYR:O    | 9:AC:103:ILE:CG2 | 2.63                     | 0.43              |
| 9:AC:104:LEU:C    | 9:AC:106:PRO:HD3 | 2.38                     | 0.43              |
| 9:AC:143:VAL:HG23 | 9:AC:152:GLN:CG  | 2.46                     | 0.43              |
| 9:AC:210:ALA:O    | 9:AC:211:ARG:C   | 2.56                     | 0.43              |
| 9:AC:251:THR:HB   | 9:AC:252:LYS:H   | 1.62                     | 0.43              |
| 11:AE:131:THR:O   | 11:AE:132:LYS:C  | 2.57                     | 0.43              |
| 14:AH:30:LEU:HD13 | 14:AH:30:LEU:O   | 2.18                     | 0.43              |
| 16:AJ:3:THR:HG21  | 23:AQ:93:ILE:CD1 | 2.47                     | 0.43              |
| 16:AJ:43:GLU:C    | 23:AQ:63:ARG:NH2 | 2.72                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 16:AJ:122:LEU:HD23 | 16:AJ:122:LEU:HA  | 1.73                     | 0.43              |
| 17:AK:18:ARG:H     | 17:AK:18:ARG:HG2  | 1.67                     | 0.43              |
| 18:AL:37:GLY:HA3   | 18:AL:41:ARG:HG3  | 2.01                     | 0.43              |
| 19:AM:11:LYS:O     | 19:AM:12:MET:HB2  | 2.18                     | 0.43              |
| 19:AM:117:PHE:CD1  | 19:AM:124:LEU:CD2 | 2.95                     | 0.43              |
| 21:AO:6:ALA:O      | 21:AO:10:ARG:HG2  | 2.18                     | 0.43              |
| 22:AP:52:ARG:HB3   | 22:AP:60:VAL:HG12 | 2.01                     | 0.43              |
| 25:AS:108:SER:O    | 25:AS:109:ASP:CB  | 2.66                     | 0.43              |
| 33:BA:35:G:H2'     | 33:BA:36:C:H6     | 1.82                     | 0.43              |
| 33:BA:142:G:H2'    | 33:BA:143:A:C8    | 2.53                     | 0.43              |
| 33:BA:254:G:N3     | 33:BA:255:G:C8    | 2.86                     | 0.43              |
| 33:BA:318:G:C6     | 33:BA:336:A:C6    | 3.06                     | 0.43              |
| 33:BA:323:U:C6     | 33:BA:323:U:C3'   | 3.02                     | 0.43              |
| 33:BA:408:A:C8     | 33:BA:408:A:C5'   | 3.01                     | 0.43              |
| 33:BA:555:U:C4     | 33:BA:556:C:C5    | 3.07                     | 0.43              |
| 33:BA:581:G:H2'    | 33:BA:758:C:H41   | 1.82                     | 0.43              |
| 33:BA:725:G:N2     | 33:BA:726:C:H1'   | 2.34                     | 0.43              |
| 33:BA:729:A:H2'    | 33:BA:730:G:C8    | 2.54                     | 0.43              |
| 33:BA:828:U:C5     | 33:BA:859:G:C4    | 3.06                     | 0.43              |
| 33:BA:891:U:H5     | 33:BA:906:A:N1    | 2.14                     | 0.43              |
| 33:BA:1102:A:C8    | 33:BA:1102:A:C5'  | 2.95                     | 0.43              |
| 33:BA:1116:U:C2'   | 33:BA:1117:A:H5'  | 2.49                     | 0.43              |
| 33:BA:1187:G:H21   | 46:BN:99:SER:HB2  | 1.83                     | 0.43              |
| 33:BA:1189:U:H5''  | 33:BA:1190:G:OP2  | 2.18                     | 0.43              |
| 33:BA:1363:A:C8    | 33:BA:1365:G:C4   | 3.06                     | 0.43              |
| 33:BA:1439:G:C5    | 33:BA:1440:U:C5   | 3.07                     | 0.43              |
| 34:BB:30:ILE:HD13  | 34:BB:38:HIS:HB2  | 2.00                     | 0.43              |
| 36:BD:55:ARG:HE    | 36:BD:55:ARG:HA   | 1.84                     | 0.43              |
| 36:BD:72:ARG:O     | 36:BD:75:TYR:N    | 2.51                     | 0.43              |
| 36:BD:74:TYR:O     | 36:BD:77:GLU:HB3  | 2.19                     | 0.43              |
| 36:BD:202:LEU:C    | 36:BD:203:TYR:CD2 | 2.89                     | 0.43              |
| 36:BD:204:SER:O    | 36:BD:205:LYS:HD3 | 2.18                     | 0.43              |
| 38:BF:14:GLN:NE2   | 38:BF:83:ALA:HB2  | 2.32                     | 0.43              |
| 39:BG:73:GLU:O     | 39:BG:88:VAL:N    | 2.47                     | 0.43              |
| 49:BQ:7:LEU:O      | 49:BQ:60:ILE:HD13 | 2.18                     | 0.43              |
| 51:BS:32:THR:HG22  | 51:BS:49:ALA:O    | 2.19                     | 0.43              |
| 53:BU:8:ASN:O      | 53:BU:9:GLU:HB3   | 2.18                     | 0.43              |
| 53:BU:24:LYS:C     | 53:BU:26:GLY:N    | 2.71                     | 0.43              |
| 53:BU:36:PHE:C     | 53:BU:37:TYR:CD1  | 2.91                     | 0.43              |
| 4:C3:3:ILE:HD12    | 8:CB:253:C:OP2    | 2.18                     | 0.43              |
| 4:C3:49:VAL:HG22   | 4:C3:50:SER:H     | 1.82                     | 0.43              |

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| Atom-1          | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 7:CA:46:A:C5    | 7:CA:47:C:C5    | 3.07                     | 0.43              |
| 7:CA:52:A:C2    | 7:CA:53:A:H1'   | 2.53                     | 0.43              |
| 8:CB:76:C:H5'   | 30:CX:48:ARG:CG | 2.48                     | 0.43              |
| 8:CB:136:G:H1'  | 26:CT:1:MET:CA  | 2.48                     | 0.43              |
| 8:CB:190:A:OP2  | 8:CB:205:G:N2   | 2.50                     | 0.43              |
| 8:CB:190:A:C4   | 8:CB:207:A:C2   | 3.07                     | 0.43              |
| 8:CB:252:G:H2'  | 8:CB:253:C:O5'  | 2.19                     | 0.43              |
| 8:CB:300:A:N6   | 8:CB:334:C:C5'  | 2.80                     | 0.43              |
| 8:CB:338:G:C5   | 8:CB:339:U:C4   | 3.07                     | 0.43              |
| 8:CB:379:G:N2   | 8:CB:396:G:C4   | 2.87                     | 0.43              |
| 8:CB:380:G:O2'  | 32:CZ:13:THR:HB | 2.18                     | 0.43              |
| 8:CB:408:G:C2   | 8:CB:409:G:C4   | 3.07                     | 0.43              |
| 8:CB:578:G:H5'  | 8:CB:1254:A:OP1 | 2.18                     | 0.43              |
| 8:CB:671:C:C2   | 8:CB:672:C:C6   | 3.07                     | 0.43              |
| 8:CB:672:C:C2   | 8:CB:809:G:N2   | 2.87                     | 0.43              |
| 8:CB:690:G:C8   | 8:CB:690:G:C5'  | 3.01                     | 0.43              |
| 8:CB:843:G:C6   | 8:CB:844:A:C6   | 3.07                     | 0.43              |
| 8:CB:976:G:H4'  | 8:CB:1156:A:H62 | 1.83                     | 0.43              |
| 8:CB:999:U:H5   | 8:CB:1154:G:N7  | 2.17                     | 0.43              |
| 8:CB:1005:C:O2' | 8:CB:1006:C:H5' | 2.18                     | 0.43              |
| 8:CB:1026:G:C2  | 8:CB:1027:A:N7  | 2.86                     | 0.43              |
| 8:CB:1056:G:H21 | 8:CB:1103:A:N6  | 2.16                     | 0.43              |
| 8:CB:1358:G:N2  | 8:CB:1374:G:O6  | 2.51                     | 0.43              |
| 8:CB:1361:G:N1  | 8:CB:1371:G:N2  | 2.67                     | 0.43              |
| 8:CB:1425:G:C2  | 8:CB:1426:G:C2  | 3.07                     | 0.43              |
| 8:CB:1615:C:C4  | 8:CB:1617:C:C6  | 3.06                     | 0.43              |
| 8:CB:1663:G:N2  | 8:CB:1997:C:C2  | 2.86                     | 0.43              |
| 8:CB:1727:C:N4  | 8:CB:1728:C:N4  | 2.67                     | 0.43              |
| 8:CB:1937:A:C6  | 8:CB:1939:U:O2  | 2.71                     | 0.43              |
| 8:CB:2090:A:C6  | 8:CB:2091:C:N3  | 2.87                     | 0.43              |
| 8:CB:2253:G:O2' | 8:CB:2254:C:H5' | 2.19                     | 0.43              |
| 8:CB:2268:A:H3' | 8:CB:2268:A:C8  | 2.54                     | 0.43              |
| 8:CB:2363:G:H2' | 8:CB:2364:C:C6  | 2.51                     | 0.43              |
| 8:CB:2567:G:C5  | 8:CB:2568:U:C5  | 3.07                     | 0.43              |
| 8:CB:2616:C:C4  | 8:CB:2617:U:C5  | 3.06                     | 0.43              |
| 8:CB:2624:G:C8  | 8:CB:2624:G:H3' | 2.53                     | 0.43              |
| 8:CB:2645:G:C5' | 8:CB:2645:G:C8  | 3.00                     | 0.43              |
| 8:CB:2720:U:C2  | 8:CB:2721:A:N7  | 2.87                     | 0.43              |
| 8:CB:2852:G:C6  | 8:CB:2853:C:C4  | 3.07                     | 0.43              |
| 8:CB:2876:G:N7  | 8:CB:2877:G:N7  | 2.67                     | 0.43              |
| 9:CC:74:PRO:O   | 9:CC:95:TYR:CD1 | 2.72                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:CE:60:TRP:CD1  | 11:CE:70:SER:HB2  | 2.53                     | 0.43              |
| 11:CE:138:LEU:C   | 11:CE:140:ASP:N   | 2.69                     | 0.43              |
| 11:CE:142:ALA:O   | 11:CE:185:LYS:HG2 | 2.18                     | 0.43              |
| 13:CG:29:ASN:HB3  | 13:CG:78:VAL:HA   | 2.01                     | 0.43              |
| 14:CH:47:PHE:CD2  | 14:CH:48:GLU:N    | 2.86                     | 0.43              |
| 18:CL:126:ARG:NH1 | 18:CL:127:VAL:HA  | 2.33                     | 0.43              |
| 19:CM:57:VAL:O    | 19:CM:58:LYS:C    | 2.57                     | 0.43              |
| 20:CN:4:ARG:CZ    | 20:CN:4:ARG:H     | 2.31                     | 0.43              |
| 20:CN:67:PHE:CD1  | 20:CN:67:PHE:C    | 2.91                     | 0.43              |
| 22:CP:25:VAL:HG13 | 22:CP:88:ARG:N    | 2.28                     | 0.43              |
| 24:CR:32:THR:HG22 | 24:CR:66:HIS:HD2  | 1.83                     | 0.43              |
| 24:CR:80:ARG:CD   | 24:CR:85:LYS:HA   | 2.48                     | 0.43              |
| 24:CR:82:HIS:CE1  | 24:CR:84:ARG:HE   | 2.36                     | 0.43              |
| 28:CV:68:LYS:HE2  | 28:CV:68:LYS:HB3  | 1.86                     | 0.43              |
| 29:CW:39:GLN:HA   | 29:CW:67:LYS:O    | 2.18                     | 0.43              |
| 29:CW:42:THR:CG2  | 29:CW:66:VAL:C    | 2.87                     | 0.43              |
| 30:CX:47:ARG:O    | 30:CX:49:ASP:N    | 2.51                     | 0.43              |
| 30:CX:58:ASN:C    | 30:CX:60:LYS:H    | 2.21                     | 0.43              |
| 32:CZ:63:ARG:O    | 32:CZ:67:PRO:CD   | 2.67                     | 0.43              |
| 33:DA:15:G:C2     | 33:DA:16:A:N7     | 2.87                     | 0.43              |
| 33:DA:96:U:H2'    | 33:DA:97:G:H8     | 1.82                     | 0.43              |
| 33:DA:143:A:O5'   | 33:DA:143:A:C8    | 2.64                     | 0.43              |
| 33:DA:155:A:H2'   | 33:DA:156:C:H6    | 1.82                     | 0.43              |
| 33:DA:158:G:N3    | 33:DA:159:G:C8    | 2.87                     | 0.43              |
| 33:DA:172:A:C8    | 33:DA:172:A:H3'   | 2.54                     | 0.43              |
| 33:DA:248:C:N3    | 33:DA:276:G:N2    | 2.63                     | 0.43              |
| 33:DA:332:G:H2'   | 33:DA:333:U:H6    | 1.83                     | 0.43              |
| 33:DA:402:G:H5'   | 33:DA:621:A:HI'   | 2.00                     | 0.43              |
| 33:DA:518:C:O3'   | 44:DL:46:SER:HB2  | 2.18                     | 0.43              |
| 33:DA:551:U:C2    | 33:DA:552:U:C4    | 3.07                     | 0.43              |
| 33:DA:614:C:H2'   | 33:DA:615:G:O5'   | 2.18                     | 0.43              |
| 33:DA:704:A:C8    | 33:DA:705:G:C8    | 3.06                     | 0.43              |
| 33:DA:735:C:O2    | 33:DA:735:C:H2'   | 2.19                     | 0.43              |
| 33:DA:939:G:O6    | 33:DA:1343:G:O6   | 2.37                     | 0.43              |
| 33:DA:1133:G:H2'  | 33:DA:1134:G:O4'  | 2.18                     | 0.43              |
| 33:DA:1140:C:H2'  | 33:DA:1141:C:C5   | 2.53                     | 0.43              |
| 33:DA:1185:G:H2'  | 33:DA:1186:G:H5'' | 2.01                     | 0.43              |
| 33:DA:1203:C:OP1  | 46:DN:1:ALA:HB2   | 2.19                     | 0.43              |
| 33:DA:1317:C:OP1  | 46:DN:56:PRO:HD2  | 2.18                     | 0.43              |
| 33:DA:1408:A:C8   | 33:DA:1408:A:C3'  | 3.02                     | 0.43              |
| 33:DA:1419:G:O2'  | 33:DA:1420:U:H5'  | 2.18                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1465:A:C4   | 33:DA:1466:C:C5   | 3.06                     | 0.43              |
| 33:DA:1504:G:P    | 33:DA:1507:A:H4'  | 2.58                     | 0.43              |
| 35:DC:33:ASP:OD1  | 46:DN:64:ARG:HD2  | 2.18                     | 0.43              |
| 35:DC:39:ARG:HE   | 35:DC:56:ILE:CD1  | 2.28                     | 0.43              |
| 35:DC:174:LEU:O   | 35:DC:174:LEU:CD2 | 2.67                     | 0.43              |
| 39:DG:92:PRO:O    | 39:DG:96:ASN:ND2  | 2.51                     | 0.43              |
| 39:DG:96:ASN:O    | 39:DG:100:MET:HG3 | 2.18                     | 0.43              |
| 45:DM:80:MET:HA   | 45:DM:87:GLY:HA2  | 2.00                     | 0.43              |
| 48:DP:59:HIS:CE1  | 48:DP:63:GLN:CG   | 3.01                     | 0.43              |
| 49:DQ:10:ARG:NH2  | 49:DQ:56:ASP:N    | 2.67                     | 0.43              |
| 51:DS:18:VAL:HG21 | 51:DS:43:MET:CG   | 2.46                     | 0.43              |
| 1:A0:5:ASN:HD22   | 8:AB:2019:A:N6    | 2.08                     | 0.43              |
| 4:A3:6:VAL:O      | 4:A3:10:ALA:HB2   | 2.18                     | 0.43              |
| 4:A3:63:TYR:CE1   | 8:AB:243:U:H4'    | 2.54                     | 0.43              |
| 7:AA:75:G:C2'     | 7:AA:76:G:H5'     | 2.49                     | 0.43              |
| 7:AA:107:G:O2'    | 7:AA:108:A:P      | 2.76                     | 0.43              |
| 8:AB:33:C:O5'     | 8:AB:33:C:C2'     | 2.67                     | 0.43              |
| 8:AB:108:G:C5     | 8:AB:109:C:C5     | 3.07                     | 0.43              |
| 8:AB:201:C:C4     | 8:AB:202:U:C5     | 3.07                     | 0.43              |
| 8:AB:247:G:C2'    | 8:AB:248:G:O5'    | 2.66                     | 0.43              |
| 8:AB:297:G:C5     | 8:AB:342:A:C2     | 3.06                     | 0.43              |
| 8:AB:468:G:C2'    | 8:AB:469:G:O5'    | 2.66                     | 0.43              |
| 8:AB:484:C:OP1    | 27:AU:46:LYS:HE3  | 2.19                     | 0.43              |
| 8:AB:585:G:C5     | 8:AB:1251:C:C5    | 3.07                     | 0.43              |
| 8:AB:837:C:H2'    | 8:AB:838:C:H5'    | 2.01                     | 0.43              |
| 8:AB:970:U:O2     | 8:AB:971:G:C8     | 2.72                     | 0.43              |
| 8:AB:993:G:C2'    | 8:AB:994:C:H5'    | 2.49                     | 0.43              |
| 8:AB:1048:A:C2    | 8:AB:1112:G:N3    | 2.85                     | 0.43              |
| 8:AB:1425:G:N1    | 8:AB:1426:G:C2    | 2.87                     | 0.43              |
| 8:AB:1455:G:C6    | 8:AB:1456:G:C5    | 3.06                     | 0.43              |
| 8:AB:1621:U:H6    | 8:AB:1621:U:H3'   | 1.83                     | 0.43              |
| 8:AB:1622:G:N1    | 8:AB:1623:G:N7    | 2.66                     | 0.43              |
| 8:AB:1629:U:O2    | 8:AB:2698:U:H5''  | 2.19                     | 0.43              |
| 8:AB:1803:A:N6    | 8:AB:1814:G:H1'   | 2.34                     | 0.43              |
| 8:AB:1885:A:H2'   | 8:AB:1886:U:O4'   | 2.18                     | 0.43              |
| 8:AB:1933:G:N2    | 8:AB:1967:C:N3    | 2.61                     | 0.43              |
| 8:AB:1942:C:H3'   | 8:AB:1942:C:H6    | 1.83                     | 0.43              |
| 8:AB:1973:G:C2    | 8:AB:1974:C:O2    | 2.71                     | 0.43              |
| 8:AB:2020:A:C2    | 8:AB:2035:G:C6    | 3.06                     | 0.43              |
| 8:AB:2050:C:C4    | 8:AB:2051:A:C6    | 3.06                     | 0.43              |
| 8:AB:2346:A:O2'   | 8:AB:2347:C:OP1   | 2.34                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:2521:C:C5     | 8:AB:2522:U:C4    | 3.07                     | 0.43              |
| 8:AB:2800:A:H2'    | 8:AB:2801:G:O4'   | 2.18                     | 0.43              |
| 8:AB:2810:A:H2'    | 8:AB:2811:G:O4'   | 2.17                     | 0.43              |
| 9:AC:46:GLY:O      | 9:AC:47:ARG:CB    | 2.66                     | 0.43              |
| 9:AC:116:GLN:C     | 9:AC:127:ASN:HB3  | 2.39                     | 0.43              |
| 9:AC:245:THR:O     | 9:AC:247:TRP:N    | 2.52                     | 0.43              |
| 11:AE:105:LEU:HD23 | 11:AE:105:LEU:N   | 2.32                     | 0.43              |
| 11:AE:172:ALA:O    | 11:AE:201:ALA:HA  | 2.18                     | 0.43              |
| 12:AF:76:PHE:O     | 12:AF:77:LYS:HB3  | 2.19                     | 0.43              |
| 15:AI:31:GLY:O     | 15:AI:64:ARG:HA   | 2.19                     | 0.43              |
| 16:AJ:79:GLY:C     | 16:AJ:81:ILE:N    | 2.71                     | 0.43              |
| 16:AJ:139:VAL:HG23 | 16:AJ:140:LEU:N   | 2.32                     | 0.43              |
| 18:AL:18:ARG:O     | 18:AL:19:LEU:HB2  | 2.19                     | 0.43              |
| 20:AN:8:ARG:CD     | 20:AN:46:ARG:HD3  | 2.42                     | 0.43              |
| 22:AP:23:ASP:OD1   | 22:AP:93:LYS:NZ   | 2.46                     | 0.43              |
| 23:AQ:49:ARG:C     | 23:AQ:51:GLN:N    | 2.71                     | 0.43              |
| 23:AQ:90:ASP:CG    | 23:AQ:91:ARG:N    | 2.72                     | 0.43              |
| 24:AR:71:LYS:HA    | 24:AR:71:LYS:HD2  | 1.55                     | 0.43              |
| 26:AT:10:VAL:HG22  | 26:AT:11:LEU:HD12 | 1.99                     | 0.43              |
| 27:AU:46:LYS:O     | 27:AU:53:GLN:OE1  | 2.36                     | 0.43              |
| 27:AU:69:VAL:HG13  | 27:AU:77:GLY:HA2  | 1.99                     | 0.43              |
| 29:AW:45:HIS:CB    | 29:AW:57:THR:HG21 | 2.48                     | 0.43              |
| 29:AW:67:LYS:HG2   | 29:AW:72:GLY:O    | 2.18                     | 0.43              |
| 31:AY:8:GLN:O      | 31:AY:8:GLN:HG2   | 2.18                     | 0.43              |
| 33:BA:19:A:C5      | 33:BA:20:U:C5     | 3.07                     | 0.43              |
| 33:BA:96:U:H2'     | 33:BA:97:G:H8     | 1.83                     | 0.43              |
| 33:BA:404:G:N2     | 33:BA:405:U:O2    | 2.49                     | 0.43              |
| 33:BA:410:G:H1'    | 33:BA:433:G:N2    | 2.33                     | 0.43              |
| 33:BA:428:G:N9     | 33:BA:430:A:C8    | 2.86                     | 0.43              |
| 33:BA:575:G:C8     | 33:BA:821:G:OP2   | 2.72                     | 0.43              |
| 33:BA:712:A:O2'    | 33:BA:713:G:H5'   | 2.18                     | 0.43              |
| 33:BA:728:A:C5     | 47:BO:53:ARG:HD2  | 2.53                     | 0.43              |
| 33:BA:822:U:C6     | 33:BA:823:C:H5    | 2.37                     | 0.43              |
| 33:BA:885:G:H2'    | 33:BA:886:G:H8    | 1.84                     | 0.43              |
| 33:BA:1065:U:O4    | 33:BA:1190:G:O4'  | 2.36                     | 0.43              |
| 33:BA:1155:A:C5'   | 33:BA:1155:A:C8   | 3.02                     | 0.43              |
| 33:BA:1372:U:C6    | 33:BA:1373:G:N7   | 2.87                     | 0.43              |
| 33:BA:1379:G:C2    | 33:BA:1380:U:C5   | 3.07                     | 0.43              |
| 33:BA:1381:U:C2    | 33:BA:1382:C:H6   | 2.36                     | 0.43              |
| 33:BA:1420:U:H2'   | 33:BA:1421:G:O4'  | 2.18                     | 0.43              |
| 33:BA:1431:A:N7    | 33:BA:1432:G:C6   | 2.87                     | 0.43              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:BA:1463:U:H2' | 33:BA:1464:U:O4'   | 2.18                     | 0.43              |
| 33:BA:1477:U:N3  | 33:BA:1478:U:C5    | 2.86                     | 0.43              |
| 33:BA:1526:G:O6  | 33:BA:1527:U:C4    | 2.70                     | 0.43              |
| 34:BB:26:MET:HE3 | 34:BB:26:MET:HB3   | 1.89                     | 0.43              |
| 35:BC:10:ARG:NH2 | 35:BC:179:ALA:HB2  | 2.34                     | 0.43              |
| 35:BC:188:ALA:O  | 35:BC:190:THR:N    | 2.51                     | 0.43              |
| 36:BD:8:LEU:O    | 36:BD:11:SER:N     | 2.52                     | 0.43              |
| 36:BD:105:GLY:CA | 36:BD:158:LEU:HD23 | 2.49                     | 0.43              |
| 37:BE:14:LEU:CG  | 37:BE:59:ILE:HD11  | 2.47                     | 0.43              |
| 37:BE:151:MET:CB | 37:BE:155:LYS:HB2  | 2.47                     | 0.43              |
| 38:BF:7:VAL:CG1  | 50:BR:64:LEU:HD21  | 2.48                     | 0.43              |
| 41:BI:26:LYS:H   | 41:BI:26:LYS:NZ    | 2.16                     | 0.43              |
| 42:BJ:52:LEU:HA  | 42:BJ:62:ARG:HG2   | 1.99                     | 0.43              |
| 44:BL:65:TYR:CD2 | 44:BL:86:VAL:HG21  | 2.54                     | 0.43              |
| 49:BQ:8:GLN:HA   | 49:BQ:58:VAL:O     | 2.19                     | 0.43              |
| 2:C1:8:ILE:HG21  | 2:C1:27:ARG:HE     | 1.83                     | 0.43              |
| 3:C2:13:ASN:HB3  | 3:C2:46:LYS:HB3    | 2.00                     | 0.43              |
| 8:CB:14:A:C6     | 8:CB:526:A:N1      | 2.87                     | 0.43              |
| 8:CB:19:A:C5     | 8:CB:20:C:C5       | 3.07                     | 0.43              |
| 8:CB:160:A:C2    | 8:CB:161:A:C4      | 3.07                     | 0.43              |
| 8:CB:166:U:H2'   | 8:CB:167:A:H5'     | 2.00                     | 0.43              |
| 8:CB:289:G:N1    | 8:CB:290:U:C2      | 2.87                     | 0.43              |
| 8:CB:375:G:C2'   | 8:CB:376:G:H5'     | 2.48                     | 0.43              |
| 8:CB:379:G:C6    | 8:CB:396:G:O6      | 2.72                     | 0.43              |
| 8:CB:466:A:C5'   | 8:CB:466:A:H8      | 2.32                     | 0.43              |
| 8:CB:538:A:N9    | 8:CB:556:A:N6      | 2.66                     | 0.43              |
| 8:CB:554:U:C5    | 8:CB:555:G:N7      | 2.87                     | 0.43              |
| 8:CB:571:U:C4    | 8:CB:575:A:N6      | 2.87                     | 0.43              |
| 8:CB:599:A:C2    | 8:CB:659:G:C6      | 3.07                     | 0.43              |
| 8:CB:650:C:N4    | 55:CB:5114:HOH:O   | 2.51                     | 0.43              |
| 8:CB:826:U:N3    | 8:CB:828:U:H1'     | 2.33                     | 0.43              |
| 8:CB:850:U:H2'   | 8:CB:851:C:H6      | 1.77                     | 0.43              |
| 8:CB:969:G:C5    | 8:CB:970:U:C4      | 3.07                     | 0.43              |
| 8:CB:977:G:C2    | 8:CB:978:G:C8      | 3.06                     | 0.43              |
| 8:CB:1034:G:H2'  | 8:CB:1034:G:N3     | 2.34                     | 0.43              |
| 8:CB:1177:G:H2'  | 8:CB:1178:C:O4'    | 2.18                     | 0.43              |
| 8:CB:1305:C:N4   | 8:CB:1306:C:H5     | 2.16                     | 0.43              |
| 8:CB:1332:G:N7   | 8:CB:1609:A:C4     | 2.86                     | 0.43              |
| 8:CB:1710:G:C2   | 8:CB:1749:A:C2     | 3.07                     | 0.43              |
| 8:CB:1717:A:H1'  | 8:CB:1744:A:N6     | 2.34                     | 0.43              |
| 8:CB:1836:C:C2'  | 8:CB:1837:C:H5'    | 2.49                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1965:C:C4     | 8:CB:1966:A:C6     | 3.06                     | 0.43              |
| 8:CB:2093:G:C8     | 8:CB:2093:G:C3'    | 3.00                     | 0.43              |
| 8:CB:2276:G:H2'    | 8:CB:2277:G:H5'    | 2.00                     | 0.43              |
| 8:CB:2504:U:H5''   | 8:CB:2505:G:OP2    | 2.19                     | 0.43              |
| 8:CB:2513:A:C5     | 8:CB:2514:U:C5     | 3.06                     | 0.43              |
| 8:CB:2615:U:O2     | 8:CB:2616:C:C6     | 2.72                     | 0.43              |
| 8:CB:2674:G:H2'    | 8:CB:2675:A:O5'    | 2.18                     | 0.43              |
| 8:CB:2682:A:HO2'   | 8:CB:2683:C:P      | 2.42                     | 0.43              |
| 8:CB:2682:A:N1     | 8:CB:2683:C:N3     | 2.66                     | 0.43              |
| 8:CB:2761:A:C6     | 8:CB:2762:C:C5     | 3.06                     | 0.43              |
| 8:CB:2798:U:H1'    | 8:CB:2800:A:C6     | 2.53                     | 0.43              |
| 8:CB:2819:G:O2'    | 8:CB:2820:A:C5'    | 2.67                     | 0.43              |
| 8:CB:2822:G:OP2    | 10:CD:115:GLY:O    | 2.37                     | 0.43              |
| 8:CB:2839:G:C6     | 8:CB:2840:C:C4     | 3.07                     | 0.43              |
| 9:CC:116:GLN:C     | 9:CC:127:ASN:HB3   | 2.39                     | 0.43              |
| 9:CC:183:VAL:O     | 9:CC:184:GLU:C     | 2.57                     | 0.43              |
| 9:CC:243:PRO:HB2   | 9:CC:248:GLY:H     | 1.82                     | 0.43              |
| 10:CD:42:ASN:ND2   | 10:CD:43:ASP:N     | 2.61                     | 0.43              |
| 10:CD:107:VAL:HA   | 10:CD:205:PRO:O    | 2.18                     | 0.43              |
| 11:CE:120:VAL:H    | 11:CE:189:THR:HG21 | 1.79                     | 0.43              |
| 12:CF:36:ASN:HA    | 12:CF:87:LYS:H     | 1.84                     | 0.43              |
| 12:CF:63:LYS:HD2   | 12:CF:64:PRO:HD2   | 1.99                     | 0.43              |
| 13:CG:90:GLY:O     | 13:CG:93:TYR:CD1   | 2.72                     | 0.43              |
| 15:CI:44:LYS:NZ    | 15:CI:68:PHE:HD2   | 2.17                     | 0.43              |
| 15:CI:126:ARG:HA   | 15:CI:129:GLU:CG   | 2.48                     | 0.43              |
| 18:CL:111:ILE:HA   | 18:CL:128:THR:HG21 | 2.01                     | 0.43              |
| 19:CM:135:VAL:HG12 | 19:CM:136:MET:N    | 2.32                     | 0.43              |
| 20:CN:2:ARG:O      | 20:CN:2:ARG:HD3    | 2.19                     | 0.43              |
| 20:CN:69:ARG:HA    | 20:CN:69:ARG:HD2   | 1.48                     | 0.43              |
| 22:CP:31:VAL:HG12  | 22:CP:33:GLU:N     | 2.34                     | 0.43              |
| 22:CP:47:ILE:HA    | 22:CP:63:ILE:HG23  | 1.99                     | 0.43              |
| 22:CP:76:HIS:C     | 22:CP:77:SER:HG    | 2.13                     | 0.43              |
| 23:CQ:46:TYR:CZ    | 24:CR:89:HIS:NE2   | 2.86                     | 0.43              |
| 25:CS:41:LYS:HB3   | 25:CS:41:LYS:HE2   | 1.86                     | 0.43              |
| 25:CS:103:ILE:HD13 | 25:CS:103:ILE:HA   | 1.76                     | 0.43              |
| 27:CU:48:VAL:C     | 27:CU:50:ALA:H     | 2.22                     | 0.43              |
| 28:CV:76:ASP:O     | 28:CV:90:ASP:N     | 2.44                     | 0.43              |
| 33:DA:24:U:H3'     | 33:DA:24:U:H6      | 1.82                     | 0.43              |
| 33:DA:227:G:C5     | 33:DA:228:A:N7     | 2.87                     | 0.43              |
| 33:DA:229:U:H2'    | 33:DA:230:G:H8     | 1.83                     | 0.43              |
| 33:DA:335:C:H2'    | 33:DA:336:A:H8     | 1.82                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:347:G:N3    | 33:DA:348:G:C8    | 2.87                     | 0.43              |
| 33:DA:435:A:C6    | 33:DA:436:C:C4    | 3.07                     | 0.43              |
| 33:DA:503:C:OP1   | 44:DL:115:LYS:NZ  | 2.40                     | 0.43              |
| 33:DA:560:A:P     | 55:DA:5126:HOH:O  | 2.77                     | 0.43              |
| 33:DA:564:C:O2    | 33:DA:564:C:C2'   | 2.66                     | 0.43              |
| 33:DA:572:A:P     | 33:DA:573:A:OP2   | 2.77                     | 0.43              |
| 33:DA:575:G:C4'   | 33:DA:576:C:H5''  | 2.48                     | 0.43              |
| 33:DA:627:G:H2'   | 33:DA:628:G:C8    | 2.53                     | 0.43              |
| 33:DA:763:G:C2    | 33:DA:764:C:C6    | 3.06                     | 0.43              |
| 33:DA:795:C:H5'   | 33:DA:1522:U:C5'  | 2.48                     | 0.43              |
| 33:DA:831:A:H2'   | 33:DA:832:G:C5'   | 2.49                     | 0.43              |
| 33:DA:1057:G:O2'  | 35:DC:196:GLY:HA3 | 2.19                     | 0.43              |
| 33:DA:1149:C:H2'  | 33:DA:1150:A:C8   | 2.53                     | 0.43              |
| 33:DA:1204:A:H2'  | 33:DA:1205:U:C6   | 2.54                     | 0.43              |
| 33:DA:1228:C:H5   | 45:DM:103:THR:CG2 | 2.32                     | 0.43              |
| 33:DA:1237:C:H2'  | 33:DA:1335:U:H4'  | 2.00                     | 0.43              |
| 33:DA:1519:A:H3'  | 33:DA:1520:C:C5'  | 2.49                     | 0.43              |
| 33:DA:1520:C:C6   | 33:DA:1520:C:C3'  | 3.01                     | 0.43              |
| 33:DA:1526:G:H2'  | 33:DA:1527:U:O5'  | 2.18                     | 0.43              |
| 35:DC:40:GLN:O    | 35:DC:44:LYS:HB2  | 2.19                     | 0.43              |
| 38:DF:17:GLN:HG2  | 38:DF:21:MET:HG3  | 2.01                     | 0.43              |
| 39:DG:103:ILE:O   | 39:DG:107:ALA:HB2 | 2.18                     | 0.43              |
| 39:DG:115:MET:HE1 | 39:DG:119:LEU:CD1 | 2.47                     | 0.43              |
| 47:DO:28:VAL:O    | 47:DO:30:LEU:N    | 2.51                     | 0.43              |
| 48:DP:23:ASP:O    | 48:DP:24:SER:C    | 2.57                     | 0.43              |
| 49:DQ:8:GLN:HA    | 49:DQ:58:VAL:O    | 2.18                     | 0.43              |
| 50:DR:57:ALA:O    | 50:DR:60:ARG:N    | 2.52                     | 0.43              |
| 50:DR:61:ALA:C    | 50:DR:63:TYR:H    | 2.21                     | 0.43              |
| 1:A0:53:VAL:HG12  | 1:A0:54:ILE:N     | 2.34                     | 0.43              |
| 3:A2:5:PHE:HE1    | 8:AB:464:U:C5'    | 2.32                     | 0.43              |
| 4:A3:12:ARG:HB2   | 4:A3:24:LYS:CG    | 2.45                     | 0.43              |
| 7:AA:83:G:C6      | 7:AA:84:G:C8      | 3.06                     | 0.43              |
| 8:AB:45:G:C5'     | 8:AB:46:G:H5'     | 2.48                     | 0.43              |
| 8:AB:215:G:N2     | 8:AB:432:A:C2     | 2.87                     | 0.43              |
| 8:AB:221:A:C2     | 8:AB:233:A:N9     | 2.86                     | 0.43              |
| 8:AB:222:A:N7     | 8:AB:224:U:C5     | 2.86                     | 0.43              |
| 8:AB:292:U:N3     | 8:AB:293:U:C4     | 2.85                     | 0.43              |
| 8:AB:309:A:C4     | 8:AB:330:A:C2     | 3.07                     | 0.43              |
| 8:AB:332:A:C6     | 8:AB:335:C:N3     | 2.87                     | 0.43              |
| 8:AB:570:G:N9     | 8:AB:2030:A:N7    | 2.67                     | 0.43              |
| 8:AB:596:U:C6     | 8:AB:596:U:C3'    | 3.02                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:672:C:C2      | 8:AB:809:G:N2      | 2.86                     | 0.43              |
| 8:AB:738:G:C2      | 8:AB:759:G:C5      | 3.07                     | 0.43              |
| 8:AB:802:A:C4      | 8:AB:803:U:C4      | 3.07                     | 0.43              |
| 8:AB:812:C:C4      | 8:AB:1250:G:O6     | 2.72                     | 0.43              |
| 8:AB:834:G:O2'     | 8:AB:835:C:H5'     | 2.19                     | 0.43              |
| 8:AB:849:A:C6      | 8:AB:850:U:C4      | 3.07                     | 0.43              |
| 8:AB:965:C:H6      | 8:AB:965:C:C5'     | 2.32                     | 0.43              |
| 8:AB:1282:U:H3'    | 8:AB:1282:U:C6     | 2.54                     | 0.43              |
| 8:AB:1300:G:C1'    | 8:AB:1626:A:C2     | 3.01                     | 0.43              |
| 8:AB:1340:U:HO2'   | 8:AB:1341:G:P      | 2.34                     | 0.43              |
| 8:AB:1427:A:C4     | 8:AB:1428:C:C5     | 3.07                     | 0.43              |
| 8:AB:1786:A:N1     | 8:AB:1938:A:C4     | 2.86                     | 0.43              |
| 8:AB:1848:A:N1     | 33:BA:702:A:N6     | 2.66                     | 0.43              |
| 8:AB:1945:G:C6     | 8:AB:1946:U:C4     | 3.06                     | 0.43              |
| 8:AB:1977:A:C6     | 8:AB:1978:A:C4     | 3.07                     | 0.43              |
| 8:AB:2019:A:H2'    | 8:AB:2020:A:O5'    | 2.19                     | 0.43              |
| 8:AB:2027:G:C6     | 8:AB:2028:U:C5     | 3.07                     | 0.43              |
| 8:AB:2099:U:O2     | 8:AB:2100:G:C8     | 2.72                     | 0.43              |
| 8:AB:2103:C:C6     | 8:AB:2103:C:O5'    | 2.72                     | 0.43              |
| 8:AB:2265:U:C5     | 8:AB:2266:A:C6     | 3.07                     | 0.43              |
| 8:AB:2297:A:N1     | 8:AB:2320:U:O4'    | 2.51                     | 0.43              |
| 8:AB:2403:C:O2'    | 8:AB:2404:U:H5'    | 2.19                     | 0.43              |
| 8:AB:2560:A:N1     | 8:AB:2561:U:C2     | 2.87                     | 0.43              |
| 8:AB:2747:G:C2     | 8:AB:2757:A:N6     | 2.87                     | 0.43              |
| 8:AB:2761:A:H8     | 8:AB:2761:A:H5'    | 1.84                     | 0.43              |
| 8:AB:2773:C:H2'    | 8:AB:2774:C:C6     | 2.53                     | 0.43              |
| 8:AB:2808:G:N3     | 8:AB:2891:U:O2     | 2.52                     | 0.43              |
| 8:AB:2850:A:H2'    | 8:AB:2851:A:O4'    | 2.19                     | 0.43              |
| 8:AB:2881:U:H5'    | 20:AN:93:GLY:O     | 2.18                     | 0.43              |
| 9:AC:12:ARG:HB2    | 9:AC:21:PRO:HD3    | 2.00                     | 0.43              |
| 9:AC:124:LYS:HZ3   | 9:AC:126:GLY:H     | 1.67                     | 0.43              |
| 10:AD:7:LYS:CG     | 10:AD:201:LEU:HD11 | 2.49                     | 0.43              |
| 11:AE:193:VAL:HG11 | 11:AE:201:ALA:CB   | 2.48                     | 0.43              |
| 13:AG:3:VAL:HB     | 13:AG:4:ALA:H      | 1.50                     | 0.43              |
| 13:AG:10:VAL:HG21  | 13:AG:16:VAL:HG23  | 2.01                     | 0.43              |
| 16:AJ:64:VAL:O     | 16:AJ:65:THR:C     | 2.56                     | 0.43              |
| 16:AJ:120:ARG:CZ   | 16:AJ:123:LYS:HZ2  | 2.31                     | 0.43              |
| 17:AK:49:ARG:HB3   | 17:AK:50:GLY:H     | 1.52                     | 0.43              |
| 17:AK:78:ARG:CZ    | 22:AP:102:ARG:HH12 | 2.32                     | 0.43              |
| 18:AL:78:ARG:CD    | 18:AL:81:ASP:H     | 2.31                     | 0.43              |
| 18:AL:111:ILE:HA   | 18:AL:128:THR:HG21 | 2.00                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 19:AM:96:ILE:HG22 | 19:AM:97:GLN:OE1   | 2.19                     | 0.43              |
| 20:AN:34:ILE:HD13 | 20:AN:34:ILE:N     | 2.33                     | 0.43              |
| 23:AQ:88:GLU:HA   | 24:AR:53:PHE:CD1   | 2.53                     | 0.43              |
| 23:AQ:98:ALA:O    | 23:AQ:102:LYS:HE3  | 2.19                     | 0.43              |
| 24:AR:28:ALA:HB1  | 24:AR:69:GLY:HA3   | 2.01                     | 0.43              |
| 24:AR:34:GLU:HA   | 24:AR:64:VAL:HG21  | 2.01                     | 0.43              |
| 24:AR:34:GLU:HA   | 24:AR:64:VAL:HG22  | 1.99                     | 0.43              |
| 25:AS:7:HIS:HB3   | 25:AS:8:ARG:H      | 1.60                     | 0.43              |
| 25:AS:71:VAL:CG2  | 25:AS:107:VAL:HG12 | 2.49                     | 0.43              |
| 29:AW:39:GLN:HA   | 29:AW:68:PHE:HB2   | 2.00                     | 0.43              |
| 33:BA:8:A:O4'     | 37:BE:106:ALA:HA   | 2.18                     | 0.43              |
| 33:BA:24:U:H6     | 33:BA:24:U:H3'     | 1.83                     | 0.43              |
| 33:BA:50:A:N3     | 33:BA:52:C:H1'     | 2.33                     | 0.43              |
| 33:BA:88:U:N3     | 33:BA:89:U:C4      | 2.87                     | 0.43              |
| 33:BA:120:A:N6    | 33:BA:122:G:C2     | 2.87                     | 0.43              |
| 33:BA:172:A:C5    | 33:BA:174:A:N7     | 2.86                     | 0.43              |
| 33:BA:357:G:C4    | 33:BA:358:U:H5     | 2.36                     | 0.43              |
| 33:BA:392:C:C2    | 33:BA:393:A:C8     | 3.07                     | 0.43              |
| 33:BA:497:G:C2    | 33:BA:498:A:C5     | 3.06                     | 0.43              |
| 33:BA:552:U:C2    | 33:BA:553:A:N7     | 2.86                     | 0.43              |
| 33:BA:570:G:O4'   | 33:BA:820:U:C6     | 2.71                     | 0.43              |
| 33:BA:803:G:C2'   | 33:BA:804:U:O5'    | 2.67                     | 0.43              |
| 33:BA:910:C:O2    | 33:BA:911:U:O4'    | 2.36                     | 0.43              |
| 33:BA:1005:A:H8   | 33:BA:1006:G:C8    | 2.26                     | 0.43              |
| 33:BA:1073:U:C2'  | 33:BA:1074:G:O5'   | 2.67                     | 0.43              |
| 33:BA:1146:A:C2   | 33:BA:1147:C:C2    | 3.07                     | 0.43              |
| 33:BA:1181:G:N1   | 33:BA:1182:G:C2    | 2.86                     | 0.43              |
| 33:BA:1360:A:C5   | 46:BN:57:SER:HB3   | 2.54                     | 0.43              |
| 33:BA:1360:A:C2   | 33:BA:1361:G:H1'   | 2.53                     | 0.43              |
| 33:BA:1375:A:OP1  | 39:BG:27:ASN:ND2   | 2.52                     | 0.43              |
| 33:BA:1399:C:N4   | 33:BA:1502:A:C2    | 2.87                     | 0.43              |
| 34:BB:217:ALA:O   | 34:BB:221:ARG:HG3  | 2.18                     | 0.43              |
| 39:BG:134:VAL:O   | 39:BG:137:ARG:HB3  | 2.18                     | 0.43              |
| 42:BJ:80:THR:HB   | 42:BJ:84:VAL:HG13  | 2.01                     | 0.43              |
| 48:BP:3:THR:C     | 48:BP:4:ILE:HG13   | 2.39                     | 0.43              |
| 2:C1:54:LYS:HG3   | 2:C1:54:LYS:OXT    | 2.18                     | 0.43              |
| 3:C2:24:THR:HB    | 3:C2:27:GLY:H      | 1.84                     | 0.43              |
| 4:C3:12:ARG:O     | 4:C3:13:PHE:CB     | 2.66                     | 0.43              |
| 5:C4:26:ILE:HD12  | 5:C4:35:GLN:CD     | 2.38                     | 0.43              |
| 7:CA:51:G:P       | 21:CO:67:ASN:HD22  | 2.41                     | 0.43              |
| 7:CA:53:A:O5'     | 7:CA:53:A:C8       | 2.57                     | 0.43              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 8:CB:20:C:O2     | 8:CB:21:A:C8      | 2.72                     | 0.43              |
| 8:CB:81:G:C2'    | 8:CB:82:U:H5'     | 2.49                     | 0.43              |
| 8:CB:114:U:O5'   | 8:CB:114:U:H6     | 2.02                     | 0.43              |
| 8:CB:237:C:C6    | 8:CB:238:C:H5     | 2.36                     | 0.43              |
| 8:CB:301:G:C6    | 8:CB:317:G:O6     | 2.72                     | 0.43              |
| 8:CB:309:A:N1    | 8:CB:330:A:C8     | 2.86                     | 0.43              |
| 8:CB:448:U:H3'   | 8:CB:449:A:C5'    | 2.48                     | 0.43              |
| 8:CB:588:U:H5'   | 18:CL:29:LYS:HD2  | 1.99                     | 0.43              |
| 8:CB:602:A:C1'   | 8:CB:604:G:O2'    | 2.67                     | 0.43              |
| 8:CB:827:U:P     | 8:CB:828:U:C5     | 3.11                     | 0.43              |
| 8:CB:870:U:C3'   | 8:CB:871:U:H5'    | 2.49                     | 0.43              |
| 8:CB:993:G:N1    | 8:CB:994:C:H5     | 2.14                     | 0.43              |
| 8:CB:1101:U:H2'  | 8:CB:1102:C:O4'   | 2.19                     | 0.43              |
| 8:CB:1115:G:H2'  | 8:CB:1116:G:C8    | 2.53                     | 0.43              |
| 8:CB:1125:G:C6   | 8:CB:1126:A:N6    | 2.86                     | 0.43              |
| 8:CB:1150:C:N4   | 8:CB:1151:A:H62   | 2.17                     | 0.43              |
| 8:CB:1195:G:C4   | 8:CB:1196:C:C5    | 3.07                     | 0.43              |
| 8:CB:1262:A:C5   | 8:CB:1263:U:C5    | 3.06                     | 0.43              |
| 8:CB:1275:A:N3   | 8:CB:1275:A:H5''  | 2.34                     | 0.43              |
| 8:CB:1323:C:OP1  | 25:CS:84:ARG:CZ   | 2.65                     | 0.43              |
| 8:CB:1407:G:C2   | 8:CB:1596:A:N3    | 2.87                     | 0.43              |
| 8:CB:1593:A:C6   | 8:CB:1594:U:C4    | 3.07                     | 0.43              |
| 8:CB:1618:A:O2'  | 8:CB:1619:G:H5'   | 2.18                     | 0.43              |
| 8:CB:1710:G:N2   | 8:CB:1749:A:H1'   | 2.33                     | 0.43              |
| 8:CB:1734:G:O5'  | 8:CB:1734:G:C8    | 2.72                     | 0.43              |
| 8:CB:1748:C:H5'' | 8:CB:1748:C:C6    | 2.48                     | 0.43              |
| 8:CB:1858:A:N6   | 8:CB:1884:G:H1'   | 2.34                     | 0.43              |
| 8:CB:1863:G:H22  | 8:CB:1880:U:H1'   | 1.83                     | 0.43              |
| 8:CB:2200:C:C6   | 8:CB:2200:C:C3'   | 3.02                     | 0.43              |
| 8:CB:2256:G:N2   | 8:CB:2257:U:H1'   | 2.34                     | 0.43              |
| 8:CB:2305:U:H2'  | 8:CB:2306:C:O4'   | 2.19                     | 0.43              |
| 8:CB:2454:G:C4   | 8:CB:2455:G:C8    | 3.07                     | 0.43              |
| 8:CB:2562:U:C5   | 8:CB:2563:U:C5    | 3.07                     | 0.43              |
| 8:CB:2640:G:C3'  | 8:CB:2641:G:H5''  | 2.48                     | 0.43              |
| 8:CB:2800:A:H2'  | 8:CB:2801:G:C4'   | 2.49                     | 0.43              |
| 9:CC:84:PRO:C    | 9:CC:86:ARG:N     | 2.68                     | 0.43              |
| 10:CD:4:LEU:N    | 10:CD:4:LEU:CD2   | 2.81                     | 0.43              |
| 10:CD:13:ARG:NE  | 10:CD:13:ARG:CA   | 2.74                     | 0.43              |
| 10:CD:101:PHE:O  | 10:CD:102:ALA:C   | 2.54                     | 0.43              |
| 14:CH:27:ARG:CA  | 14:CH:31:VAL:HG23 | 2.48                     | 0.43              |
| 14:CH:48:GLU:HG3 | 14:CH:48:GLU:O    | 2.19                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:CI:105:LEU:HD23 | 15:CI:105:LEU:HA   | 1.79                     | 0.43              |
| 16:CJ:34:ARG:HG3   | 16:CJ:39:LYS:NZ    | 2.34                     | 0.43              |
| 16:CJ:73:VAL:CG2   | 16:CJ:74:TYR:H     | 2.32                     | 0.43              |
| 18:CL:54:GLN:CD    | 18:CL:54:GLN:C     | 2.77                     | 0.43              |
| 18:CL:103:ILE:HG12 | 18:CL:104:GLN:N    | 2.34                     | 0.43              |
| 18:CL:131:ALA:O    | 18:CL:135:ILE:HG13 | 2.18                     | 0.43              |
| 20:CN:24:MET:HE3   | 20:CN:44:LEU:HD13  | 2.01                     | 0.43              |
| 21:CO:26:LEU:HB3   | 21:CO:27:VAL:H     | 1.74                     | 0.43              |
| 21:CO:100:HIS:H    | 21:CO:103:VAL:CG2  | 2.32                     | 0.43              |
| 24:CR:10:LYS:O     | 24:CR:11:GLN:CB    | 2.62                     | 0.43              |
| 24:CR:80:ARG:O     | 24:CR:81:LYS:C     | 2.57                     | 0.43              |
| 25:CS:103:ILE:O    | 25:CS:104:THR:O    | 2.36                     | 0.43              |
| 26:CT:12:ARG:HB3   | 26:CT:13:ALA:H     | 1.55                     | 0.43              |
| 27:CU:42:LYS:H     | 27:CU:57:ILE:HG13  | 1.84                     | 0.43              |
| 29:CW:17:ALA:O     | 29:CW:18:LYS:HG2   | 2.18                     | 0.43              |
| 31:CY:38:GLU:O     | 31:CY:40:THR:N     | 2.51                     | 0.43              |
| 33:DA:27:G:C5      | 33:DA:557:G:C2     | 3.06                     | 0.43              |
| 33:DA:53:A:H2'     | 33:DA:54:C:O5'     | 2.19                     | 0.43              |
| 33:DA:119:A:C8     | 33:DA:240:G:C6     | 3.07                     | 0.43              |
| 33:DA:404:G:C2'    | 33:DA:405:U:H5'    | 2.49                     | 0.43              |
| 33:DA:435:A:N1     | 33:DA:436:C:C2     | 2.87                     | 0.43              |
| 33:DA:550:G:C8     | 33:DA:551:U:C5     | 3.07                     | 0.43              |
| 33:DA:559:A:H5'    | 33:DA:560:A:H3'    | 2.00                     | 0.43              |
| 33:DA:640:A:N1     | 33:DA:641:U:C4     | 2.86                     | 0.43              |
| 33:DA:794:A:C4     | 33:DA:795:C:C5     | 3.07                     | 0.43              |
| 33:DA:995:C:C2'    | 33:DA:996:A:H5'    | 2.49                     | 0.43              |
| 33:DA:1077:G:C8    | 33:DA:1077:G:C3'   | 3.02                     | 0.43              |
| 33:DA:1102:A:H5''  | 33:DA:1102:A:H8    | 1.84                     | 0.43              |
| 33:DA:1114:C:C2    | 33:DA:1115:U:C5    | 3.07                     | 0.43              |
| 33:DA:1130:A:N6    | 33:DA:1144:G:N2    | 2.66                     | 0.43              |
| 33:DA:1157:A:H4'   | 33:DA:1158:C:O5'   | 2.19                     | 0.43              |
| 33:DA:1173:U:O5'   | 33:DA:1173:U:H6    | 2.02                     | 0.43              |
| 33:DA:1316:G:O6    | 33:DA:1319:A:OP2   | 2.36                     | 0.43              |
| 33:DA:1513:A:N1    | 33:DA:1514:G:C5    | 2.87                     | 0.43              |
| 33:DA:1517:G:H2'   | 33:DA:1518:A:O4'   | 2.19                     | 0.43              |
| 34:DB:100:LEU:HB2  | 34:DB:174:GLU:HG2  | 2.01                     | 0.43              |
| 35:DC:32:LEU:HD22  | 35:DC:36:PHE:CE1   | 2.53                     | 0.43              |
| 35:DC:138:GLN:HA   | 35:DC:138:GLN:NE2  | 2.33                     | 0.43              |
| 38:DF:17:GLN:HG2   | 38:DF:17:GLN:O     | 2.19                     | 0.43              |
| 40:DH:76:ARG:HA    | 40:DH:126:CYS:HB3  | 2.01                     | 0.43              |
| 41:DI:56:MET:O     | 41:DI:57:VAL:CB    | 2.67                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 42:DJ:51:VAL:HG22 | 46:DN:80:ARG:HB2   | 2.01                     | 0.43              |
| 43:DK:78:ILE:HD13 | 43:DK:78:ILE:N     | 2.33                     | 0.43              |
| 50:DR:43:ILE:O    | 50:DR:43:ILE:HG22  | 2.17                     | 0.43              |
| 7:AA:55:U:O2'     | 7:AA:57:A:N7       | 2.51                     | 0.43              |
| 8:AB:160:A:C2     | 8:AB:161:A:C4      | 3.07                     | 0.43              |
| 8:AB:320:A:C3'    | 11:AE:131:THR:HG23 | 2.49                     | 0.43              |
| 8:AB:346:A:N1     | 8:AB:347:A:C4      | 2.87                     | 0.43              |
| 8:AB:452:G:OP1    | 11:AE:52:VAL:HG22  | 2.18                     | 0.43              |
| 8:AB:465:G:C5     | 8:AB:466:A:N6      | 2.87                     | 0.43              |
| 8:AB:482:A:N7     | 8:AB:506:G:C6      | 2.87                     | 0.43              |
| 8:AB:587:C:O2     | 18:AL:38:GLN:CD    | 2.57                     | 0.43              |
| 8:AB:611:C:O2'    | 8:AB:612:G:H5'     | 2.19                     | 0.43              |
| 8:AB:617:G:H2'    | 8:AB:618:G:C8      | 2.52                     | 0.43              |
| 8:AB:681:G:N3     | 8:AB:682:G:C8      | 2.87                     | 0.43              |
| 8:AB:725:G:H8     | 8:AB:725:G:O5'     | 2.00                     | 0.43              |
| 8:AB:791:C:N4     | 8:AB:794:A:H1'     | 2.33                     | 0.43              |
| 8:AB:923:G:H5'    | 29:AW:25:PHE:CE2   | 2.54                     | 0.43              |
| 8:AB:983:A:H2'    | 8:AB:983:A:N3      | 2.33                     | 0.43              |
| 8:AB:993:G:O5'    | 8:AB:993:G:H8      | 2.02                     | 0.43              |
| 8:AB:1050:A:C2    | 8:AB:2751:G:C4     | 3.07                     | 0.43              |
| 8:AB:1361:G:N1    | 8:AB:1371:G:N2     | 2.67                     | 0.43              |
| 8:AB:1373:A:N3    | 8:AB:1373:A:H2'    | 2.34                     | 0.43              |
| 8:AB:1557:C:H3'   | 8:AB:1557:C:C6     | 2.54                     | 0.43              |
| 8:AB:1606:C:H4'   | 8:AB:1608:A:C2     | 2.54                     | 0.43              |
| 8:AB:1719:G:H2'   | 8:AB:1720:U:O4'    | 2.19                     | 0.43              |
| 8:AB:1755:A:N6    | 8:AB:2694:G:C2'    | 2.81                     | 0.43              |
| 8:AB:1948:G:C5    | 8:AB:1949:G:N7     | 2.87                     | 0.43              |
| 8:AB:1977:A:N6    | 8:AB:1978:A:N1     | 2.67                     | 0.43              |
| 8:AB:2086:U:H2'   | 8:AB:2087:G:C8     | 2.54                     | 0.43              |
| 8:AB:2088:A:H2'   | 8:AB:2089:C:C6     | 2.54                     | 0.43              |
| 8:AB:2300:C:H2'   | 8:AB:2301:C:H5'    | 2.00                     | 0.43              |
| 8:AB:2524:G:HO2'  | 8:AB:2741:A:H2     | 1.58                     | 0.43              |
| 8:AB:2584:U:H2'   | 8:AB:2585:U:H5'    | 2.01                     | 0.43              |
| 8:AB:2620:C:C5    | 8:AB:2621:G:N7     | 2.87                     | 0.43              |
| 8:AB:2636:C:O5'   | 10:AD:80:TRP:CD1   | 2.71                     | 0.43              |
| 8:AB:2664:G:H8    | 8:AB:2664:G:O5'    | 2.01                     | 0.43              |
| 8:AB:2672:U:C3'   | 8:AB:2673:G:H5''   | 2.49                     | 0.43              |
| 8:AB:2706:A:O5'   | 8:AB:2706:A:C8     | 2.70                     | 0.43              |
| 8:AB:2847:U:OP2   | 22:AP:98:TYR:CE1   | 2.72                     | 0.43              |
| 9:AC:36:ASN:HB3   | 9:AC:63:ILE:N      | 2.26                     | 0.43              |
| 9:AC:193:GLU:C    | 9:AC:194:VAL:HG22  | 2.38                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:AC:235:GLU:HG3   | 9:AC:236:GLY:N    | 2.33                     | 0.43              |
| 10:AD:15:PHE:CG    | 10:AD:16:THR:N    | 2.86                     | 0.43              |
| 10:AD:69:ALA:O     | 10:AD:70:LYS:O    | 2.37                     | 0.43              |
| 10:AD:112:THR:O    | 10:AD:113:SER:O   | 2.36                     | 0.43              |
| 10:AD:207:VAL:HG23 | 10:AD:208:LYS:N   | 2.34                     | 0.43              |
| 11:AE:16:GLU:O     | 11:AE:17:THR:C    | 2.58                     | 0.43              |
| 11:AE:105:LEU:HD22 | 11:AE:105:LEU:HA  | 1.87                     | 0.43              |
| 14:AH:89:LYS:HE3   | 14:AH:123:ARG:HD3 | 2.00                     | 0.43              |
| 15:AI:33:ASN:HD21  | 15:AI:64:ARG:CG   | 2.32                     | 0.43              |
| 15:AI:56:VAL:CG2   | 15:AI:57:VAL:N    | 2.81                     | 0.43              |
| 16:AJ:68:LYS:HD3   | 16:AJ:72:LYS:HB2  | 2.00                     | 0.43              |
| 20:AN:47:VAL:O     | 20:AN:51:LEU:HD22 | 2.18                     | 0.43              |
| 20:AN:51:LEU:O     | 20:AN:79:LEU:HD22 | 2.19                     | 0.43              |
| 23:AQ:110:GLU:OE1  | 23:AQ:110:GLU:HA  | 2.19                     | 0.43              |
| 25:AS:9:HIS:H      | 25:AS:102:HIS:HD2 | 1.67                     | 0.43              |
| 27:AU:78:LYS:HD2   | 27:AU:97:SER:O    | 2.19                     | 0.43              |
| 28:AV:14:LYS:O     | 28:AV:15:GLY:C    | 2.57                     | 0.43              |
| 28:AV:63:ILE:HB    | 28:AV:70:ILE:HG21 | 2.00                     | 0.43              |
| 29:AW:74:LYS:O     | 29:AW:75:ASN:CB   | 2.67                     | 0.43              |
| 31:AY:32:GLY:O     | 31:AY:33:HIS:C    | 2.57                     | 0.43              |
| 33:BA:391:G:C2     | 33:BA:392:C:C2    | 3.07                     | 0.43              |
| 33:BA:400:C:H2'    | 33:BA:401:C:H5'   | 2.01                     | 0.43              |
| 33:BA:447:G:H8     | 33:BA:447:G:O5'   | 2.01                     | 0.43              |
| 33:BA:522:C:N4     | 33:BA:528:C:N4    | 2.66                     | 0.43              |
| 33:BA:658:C:H1'    | 47:BO:21:THR:CG2  | 2.49                     | 0.43              |
| 33:BA:688:G:C6     | 33:BA:700:G:N1    | 2.87                     | 0.43              |
| 33:BA:928:G:N2     | 33:BA:1390:U:C2   | 2.87                     | 0.43              |
| 33:BA:962:C:C2     | 33:BA:963:G:C8    | 3.07                     | 0.43              |
| 33:BA:1000:A:O5'   | 33:BA:1000:A:H8   | 2.01                     | 0.43              |
| 33:BA:1270:G:N3    | 33:BA:1271:A:N7   | 2.66                     | 0.43              |
| 33:BA:1313:U:C3'   | 33:BA:1314:C:H5'  | 2.48                     | 0.43              |
| 33:BA:1342:C:H2'   | 33:BA:1343:G:C8   | 2.53                     | 0.43              |
| 33:BA:1360:A:C6    | 33:BA:1361:G:N3   | 2.87                     | 0.43              |
| 33:BA:1399:C:C4    | 33:BA:1502:A:N1   | 2.87                     | 0.43              |
| 33:BA:1418:A:C6    | 33:BA:1483:A:N1   | 2.87                     | 0.43              |
| 33:BA:1422:G:C2'   | 33:BA:1423:G:H5'  | 2.48                     | 0.43              |
| 33:BA:1428:A:N1    | 33:BA:1473:G:C5   | 2.87                     | 0.43              |
| 33:BA:1459:G:H2'   | 33:BA:1460:C:H6   | 1.83                     | 0.43              |
| 34:BB:17:HIS:HD2   | 34:BB:18:GLN:OE1  | 2.01                     | 0.43              |
| 34:BB:44:LYS:O     | 34:BB:48:MET:HG2  | 2.19                     | 0.43              |
| 36:BD:13:ARG:HD2   | 36:BD:55:ARG:HH12 | 1.84                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BD:57:LYS:HZ2  | 36:BD:58:GLN:HE21  | 1.63                     | 0.43              |
| 36:BD:97:LEU:HD23 | 36:BD:129:VAL:HG11 | 2.00                     | 0.43              |
| 36:BD:159:GLU:HG3 | 36:BD:160:LEU:H    | 1.82                     | 0.43              |
| 39:BG:38:ALA:C    | 39:BG:40:SER:N     | 2.72                     | 0.43              |
| 39:BG:110:ARG:NH2 | 39:BG:130:LYS:NZ   | 2.66                     | 0.43              |
| 42:BJ:73:LEU:HB3  | 42:BJ:74:VAL:H     | 1.71                     | 0.43              |
| 43:BK:127:ARG:HG3 | 53:BU:33:ARG:HH22  | 1.84                     | 0.43              |
| 47:BO:52:ARG:CA   | 47:BO:55:LEU:HB3   | 2.48                     | 0.43              |
| 48:BP:14:ARG:HA   | 48:BP:15:PRO:HD2   | 1.72                     | 0.43              |
| 1:C0:47:TYR:CD2   | 1:C0:51:ARG:CG     | 3.00                     | 0.43              |
| 4:C3:46:LYS:CD    | 4:C3:47:ALA:N      | 2.82                     | 0.43              |
| 7:CA:34:A:O2'     | 7:CA:35:C:C5'      | 2.67                     | 0.43              |
| 7:CA:52:A:H2'     | 7:CA:53:A:C5'      | 2.46                     | 0.43              |
| 8:CB:83:A:N3      | 8:CB:104:A:C2      | 2.87                     | 0.43              |
| 8:CB:227:A:C2     | 8:CB:2407:A:H1'    | 2.54                     | 0.43              |
| 8:CB:233:A:C2     | 8:CB:234:U:H1'     | 2.54                     | 0.43              |
| 8:CB:361:G:C5'    | 8:CB:361:G:H8      | 2.32                     | 0.43              |
| 8:CB:384:A:C2'    | 8:CB:385:C:H5'     | 2.48                     | 0.43              |
| 8:CB:414:C:H4'    | 8:CB:1879:C:O2     | 2.19                     | 0.43              |
| 8:CB:496:G:C2'    | 8:CB:497:A:H5'     | 2.48                     | 0.43              |
| 8:CB:566:U:C5     | 8:CB:567:U:C5      | 3.03                     | 0.43              |
| 8:CB:597:G:O2'    | 18:CL:21:ARG:CB    | 2.67                     | 0.43              |
| 8:CB:776:G:C8     | 8:CB:793:A:N3      | 2.87                     | 0.43              |
| 8:CB:931:U:H6     | 8:CB:931:U:H2'     | 1.56                     | 0.43              |
| 8:CB:977:G:H5'    | 8:CB:978:G:OP2     | 2.19                     | 0.43              |
| 8:CB:978:G:C6     | 8:CB:986:C:N4      | 2.87                     | 0.43              |
| 8:CB:993:G:N1     | 8:CB:994:C:C5      | 2.87                     | 0.43              |
| 8:CB:1000:A:C8    | 8:CB:1155:A:N6     | 2.86                     | 0.43              |
| 8:CB:1017:G:H2'   | 8:CB:1018:U:H6     | 1.82                     | 0.43              |
| 8:CB:1223:G:O6    | 8:CB:1227:G:C6     | 2.72                     | 0.43              |
| 8:CB:1286:A:N6    | 8:CB:1289:C:N3     | 2.67                     | 0.43              |
| 8:CB:1313:U:H4'   | 8:CB:1332:G:C4'    | 2.47                     | 0.43              |
| 8:CB:1361:G:C6    | 8:CB:1371:G:N2     | 2.87                     | 0.43              |
| 8:CB:1364:G:H1    | 8:CB:1366:A:H5''   | 1.83                     | 0.43              |
| 8:CB:1641:A:N6    | 8:CB:1642:G:C2     | 2.87                     | 0.43              |
| 8:CB:1664:A:H1'   | 8:CB:2726:A:N1     | 2.33                     | 0.43              |
| 8:CB:1667:G:P     | 17:CK:6:THR:HA     | 2.57                     | 0.43              |
| 8:CB:1719:G:C2    | 8:CB:1742:U:O2     | 2.72                     | 0.43              |
| 8:CB:1831:G:H2'   | 8:CB:1832:C:H6     | 1.81                     | 0.43              |
| 8:CB:1854:A:H61   | 8:CB:1888:G:H1'    | 1.83                     | 0.43              |
| 8:CB:1879:C:H2'   | 8:CB:1880:U:O4'    | 2.19                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1914:C:H2'    | 8:CB:1915:U:C5     | 2.53                     | 0.43              |
| 8:CB:1936:A:N3     | 8:CB:1940:U:C5     | 2.87                     | 0.43              |
| 8:CB:1948:G:C5     | 8:CB:1949:G:N7     | 2.87                     | 0.43              |
| 8:CB:1959:G:C2     | 8:CB:1960:A:N3     | 2.87                     | 0.43              |
| 8:CB:2212:A:H5'    | 8:CB:2212:A:H2'    | 1.63                     | 0.43              |
| 8:CB:2244:U:O2     | 8:CB:2244:U:H2'    | 2.18                     | 0.43              |
| 8:CB:2244:U:H2'    | 8:CB:2245:U:C6     | 2.54                     | 0.43              |
| 8:CB:2248:C:O5'    | 8:CB:2248:C:H6     | 2.01                     | 0.43              |
| 8:CB:2258:C:C2     | 8:CB:2426:A:H4'    | 2.54                     | 0.43              |
| 8:CB:2266:A:H4'    | 8:CB:2267:A:C4     | 2.54                     | 0.43              |
| 8:CB:2289:G:C8     | 8:CB:2289:G:C5'    | 2.97                     | 0.43              |
| 8:CB:2330:G:H1'    | 29:CW:36:ILE:CD1   | 2.30                     | 0.43              |
| 8:CB:2533:U:H2'    | 8:CB:2534:A:O4'    | 2.19                     | 0.43              |
| 8:CB:2623:G:C3'    | 8:CB:2624:G:H5'    | 2.47                     | 0.43              |
| 8:CB:2648:G:N2     | 8:CB:2649:C:O2     | 2.51                     | 0.43              |
| 8:CB:2744:G:C2     | 8:CB:2761:A:C4     | 3.07                     | 0.43              |
| 8:CB:2758:A:C4     | 8:CB:2759:G:C8     | 3.07                     | 0.43              |
| 8:CB:2762:C:O2     | 8:CB:2762:C:C2'    | 2.66                     | 0.43              |
| 8:CB:2773:C:O2'    | 8:CB:2774:C:H5'    | 2.19                     | 0.43              |
| 8:CB:2850:A:H2'    | 8:CB:2851:A:O4'    | 2.18                     | 0.43              |
| 9:CC:90:ILE:CG2    | 9:CC:91:ALA:N      | 2.81                     | 0.43              |
| 9:CC:129:LEU:HD23  | 9:CC:129:LEU:C     | 2.39                     | 0.43              |
| 9:CC:219:VAL:O     | 9:CC:220:ARG:HD2   | 2.19                     | 0.43              |
| 10:CD:42:ASN:HD22  | 10:CD:42:ASN:C     | 2.20                     | 0.43              |
| 10:CD:86:GLU:O     | 10:CD:87:GLY:O     | 2.37                     | 0.43              |
| 10:CD:138:LEU:HA   | 10:CD:142:VAL:CG2  | 2.43                     | 0.43              |
| 10:CD:186:LEU:HD21 | 22:CP:5:LYS:CE     | 2.47                     | 0.43              |
| 11:CE:1:MET:CA     | 11:CE:108:ILE:HD11 | 2.49                     | 0.43              |
| 11:CE:49:ARG:O     | 11:CE:52:VAL:HG22  | 2.18                     | 0.43              |
| 12:CF:12:VAL:HG13  | 12:CF:27:VAL:HG11  | 2.00                     | 0.43              |
| 12:CF:41:GLU:O     | 12:CF:43:ILE:N     | 2.52                     | 0.43              |
| 12:CF:133:GLU:N    | 12:CF:150:GLY:HA2  | 2.33                     | 0.43              |
| 14:CH:61:VAL:HB    | 14:CH:135:HIS:HB2  | 2.00                     | 0.43              |
| 15:CI:36:GLU:HB3   | 15:CI:66:PHE:HZ    | 1.84                     | 0.43              |
| 16:CJ:16:TYR:O     | 16:CJ:17:VAL:HG23  | 2.19                     | 0.43              |
| 17:CK:78:ARG:CZ    | 22:CP:72:VAL:HG21  | 2.46                     | 0.43              |
| 18:CL:88:GLY:O     | 18:CL:90:VAL:N     | 2.52                     | 0.43              |
| 19:CM:46:ILE:HD11  | 19:CM:93:VAL:CG2   | 2.48                     | 0.43              |
| 19:CM:50:ARG:C     | 19:CM:52:ALA:N     | 2.72                     | 0.43              |
| 20:CN:58:ASP:O     | 20:CN:62:ASN:HB2   | 2.19                     | 0.43              |
| 21:CO:30:ARG:N     | 21:CO:30:ARG:CD    | 2.79                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 21:CO:50:ALA:HB2  | 21:CO:78:VAL:HG13  | 2.01                     | 0.43              |
| 21:CO:95:SER:C    | 21:CO:97:PHE:N     | 2.73                     | 0.43              |
| 22:CP:100:ARG:HG2 | 22:CP:102:ARG:HE   | 1.84                     | 0.43              |
| 24:CR:11:GLN:C    | 24:CR:21:ARG:HH22  | 2.22                     | 0.43              |
| 24:CR:27:ILE:HG12 | 24:CR:29:THR:CG2   | 2.42                     | 0.43              |
| 24:CR:80:ARG:HG3  | 24:CR:86:GLN:H     | 1.84                     | 0.43              |
| 25:CS:34:ASP:O    | 25:CS:37:THR:HG22  | 2.19                     | 0.43              |
| 25:CS:95:ARG:HD3  | 25:CS:95:ARG:HA    | 1.92                     | 0.43              |
| 26:CT:48:GLN:HB2  | 26:CT:53:VAL:O     | 2.19                     | 0.43              |
| 26:CT:60:THR:HA   | 26:CT:82:LYS:O     | 2.19                     | 0.43              |
| 32:CZ:6:HIS:HA    | 32:CZ:7:PRO:HD2    | 1.78                     | 0.43              |
| 33:DA:65:A:C8     | 33:DA:200:G:O2'    | 2.66                     | 0.43              |
| 33:DA:435:A:C2    | 33:DA:436:C:C6     | 3.07                     | 0.43              |
| 33:DA:446:G:C2    | 33:DA:447:G:C1'    | 3.02                     | 0.43              |
| 33:DA:453:G:C2'   | 33:DA:454:G:C8     | 2.95                     | 0.43              |
| 33:DA:673:A:N1    | 33:DA:734:G:C6     | 2.87                     | 0.43              |
| 33:DA:705:G:C8    | 33:DA:705:G:C5'    | 2.90                     | 0.43              |
| 33:DA:855:U:C5'   | 33:DA:855:U:H6     | 2.31                     | 0.43              |
| 33:DA:877:G:H2'   | 33:DA:877:G:N3     | 2.34                     | 0.43              |
| 33:DA:1060:U:O2   | 33:DA:1061:G:N7    | 2.52                     | 0.43              |
| 33:DA:1065:U:C4   | 33:DA:1190:G:H1'   | 2.54                     | 0.43              |
| 33:DA:1111:A:C2   | 33:DA:1112:C:C4    | 3.07                     | 0.43              |
| 33:DA:1197:A:H2'  | 33:DA:1198:G:H5'   | 2.01                     | 0.43              |
| 33:DA:1421:G:C2   | 33:DA:1422:G:C5    | 3.06                     | 0.43              |
| 35:DC:55:VAL:C    | 35:DC:56:ILE:HG13  | 2.38                     | 0.43              |
| 35:DC:73:GLY:C    | 35:DC:75:VAL:H     | 2.20                     | 0.43              |
| 35:DC:90:VAL:C    | 35:DC:92:ASP:N     | 2.72                     | 0.43              |
| 36:DD:27:ILE:HG22 | 36:DD:29:THR:HG23  | 2.01                     | 0.43              |
| 40:DH:107:LYS:HB2 | 40:DH:110:MET:CE   | 2.48                     | 0.43              |
| 41:DI:10:ARG:O    | 41:DI:80:HIS:CD2   | 2.72                     | 0.43              |
| 41:DI:21:LYS:O    | 41:DI:21:LYS:CG    | 2.67                     | 0.43              |
| 42:DJ:49:PHE:CE2  | 46:DN:76:PHE:HE1   | 2.37                     | 0.43              |
| 43:DK:108:ASN:O   | 43:DK:109:ILE:HG23 | 2.19                     | 0.43              |
| 43:DK:112:VAL:CG1 | 50:DR:72:ARG:HD2   | 2.49                     | 0.43              |
| 45:DM:48:SER:HB3  | 45:DM:51:GLN:HG3   | 2.01                     | 0.43              |
| 47:DO:14:PHE:HD2  | 47:DO:83:ARG:HH12  | 1.67                     | 0.43              |
| 48:DP:32:PHE:O    | 48:DP:33:ILE:O     | 2.37                     | 0.43              |
| 51:DS:10:ILE:HG22 | 51:DS:37:SER:CB    | 2.32                     | 0.43              |
| 52:DT:60:GLN:HB3  | 52:DT:65:LEU:HG    | 2.00                     | 0.43              |
| 52:DT:71:ALA:O    | 52:DT:72:ALA:C     | 2.57                     | 0.43              |
| 4:A3:4:LYS:O      | 4:A3:4:LYS:CG      | 2.62                     | 0.43              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 5:A4:9:LYS:N    | 5:A4:9:LYS:CD     | 2.79                     | 0.43              |
| 7:AA:20:G:C2    | 7:AA:21:G:C5      | 3.07                     | 0.43              |
| 7:AA:106:G:N3   | 7:AA:106:G:C2'    | 2.77                     | 0.43              |
| 8:AB:107:G:O5'  | 8:AB:107:G:H8     | 2.01                     | 0.43              |
| 8:AB:246:C:C5   | 8:AB:247:G:N7     | 2.87                     | 0.43              |
| 8:AB:379:G:C8   | 8:AB:379:G:C3'    | 3.02                     | 0.43              |
| 8:AB:458:G:N2   | 8:AB:469:G:H2'    | 2.16                     | 0.43              |
| 8:AB:460:A:C2   | 8:AB:470:A:C5     | 3.06                     | 0.43              |
| 8:AB:462:C:C6   | 8:AB:462:C:C3'    | 3.02                     | 0.43              |
| 8:AB:579:G:C2   | 8:AB:1262:A:C4    | 3.07                     | 0.43              |
| 8:AB:637:A:H4'  | 8:AB:638:G:O5'    | 2.18                     | 0.43              |
| 8:AB:647:G:H21  | 8:AB:2350:C:H4'   | 1.83                     | 0.43              |
| 8:AB:664:G:H2'  | 8:AB:665:U:H5'    | 2.01                     | 0.43              |
| 8:AB:713:G:N2   | 8:AB:718:A:H2     | 2.05                     | 0.43              |
| 8:AB:802:A:C2   | 8:AB:803:U:C2     | 3.06                     | 0.43              |
| 8:AB:816:C:N4   | 8:AB:1192:G:C6    | 2.87                     | 0.43              |
| 8:AB:902:C:O2   | 8:AB:902:C:C3'    | 2.64                     | 0.43              |
| 8:AB:908:C:H3'  | 8:AB:909:A:H5''   | 2.01                     | 0.43              |
| 8:AB:936:A:H2'  | 8:AB:937:C:H6     | 1.82                     | 0.43              |
| 8:AB:1020:A:O4' | 8:AB:1021:A:C2    | 2.72                     | 0.43              |
| 8:AB:1087:G:C6  | 8:AB:1103:A:N1    | 2.87                     | 0.43              |
| 8:AB:1177:G:H2' | 8:AB:1178:C:O4'   | 2.19                     | 0.43              |
| 8:AB:1266:G:O2' | 8:AB:1267:U:OP2   | 2.36                     | 0.43              |
| 8:AB:1343:G:N2  | 8:AB:1384:A:H2    | 2.16                     | 0.43              |
| 8:AB:1369:G:C1' | 8:AB:1809:A:H61   | 2.32                     | 0.43              |
| 8:AB:1389:G:H2' | 8:AB:1390:U:O4'   | 2.19                     | 0.43              |
| 8:AB:1401:G:C2  | 8:AB:1402:U:C2    | 3.06                     | 0.43              |
| 8:AB:1403:A:H2' | 8:AB:1404:C:O4'   | 2.18                     | 0.43              |
| 8:AB:1411:U:H2' | 8:AB:1412:U:C6    | 2.54                     | 0.43              |
| 8:AB:1454:C:O4' | 20:AN:63:ARG:HG2  | 2.18                     | 0.43              |
| 8:AB:1801:A:C5  | 8:AB:2203:U:C5    | 3.07                     | 0.43              |
| 8:AB:1815:A:N7  | 8:AB:1817:G:C4    | 2.87                     | 0.43              |
| 8:AB:1844:C:OP1 | 9:AC:252:LYS:HA   | 2.19                     | 0.43              |
| 8:AB:1941:C:H6  | 8:AB:1941:C:C5'   | 2.22                     | 0.43              |
| 8:AB:2188:U:H2' | 8:AB:2189:U:H6    | 1.83                     | 0.43              |
| 8:AB:2231:U:OP1 | 32:AZ:28:VAL:HG12 | 2.18                     | 0.43              |
| 8:AB:2281:A:N1  | 8:AB:2282:G:C6    | 2.87                     | 0.43              |
| 8:AB:2360:G:H3' | 8:AB:2360:G:C8    | 2.54                     | 0.43              |
| 8:AB:2455:G:N2  | 8:AB:2456:C:N3    | 2.67                     | 0.43              |
| 8:AB:2560:A:C2  | 8:AB:2561:U:C1'   | 3.02                     | 0.43              |
| 8:AB:2574:G:N2  | 8:AB:2575:C:C2    | 2.87                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2691:C:H5'   | 8:AB:2872:A:C2     | 2.53                     | 0.43              |
| 8:AB:2722:G:H4'   | 20:AN:4:ARG:CB     | 2.48                     | 0.43              |
| 8:AB:2729:G:H2'   | 8:AB:2730:C:H6     | 1.83                     | 0.43              |
| 8:AB:2828:G:C2'   | 8:AB:2829:A:H5'    | 2.47                     | 0.43              |
| 8:AB:2839:G:C6    | 8:AB:2840:C:C4     | 3.06                     | 0.43              |
| 8:AB:2852:G:H2'   | 8:AB:2853:C:H6     | 1.84                     | 0.43              |
| 9:AC:3:VAL:HG12   | 9:AC:4:LYS:N       | 2.34                     | 0.43              |
| 9:AC:22:GLU:N     | 9:AC:202:ARG:NH2   | 2.66                     | 0.43              |
| 10:AD:37:VAL:HG21 | 10:AD:46:ARG:NH1   | 2.34                     | 0.43              |
| 11:AE:106:LYS:HB2 | 11:AE:106:LYS:HZ1  | 1.82                     | 0.43              |
| 15:AI:97:VAL:HG12 | 15:AI:97:VAL:O     | 2.19                     | 0.43              |
| 17:AK:60:ALA:HB1  | 17:AK:85:VAL:O     | 2.18                     | 0.43              |
| 19:AM:3:GLN:H     | 19:AM:4:PRO:CD     | 2.32                     | 0.43              |
| 19:AM:34:LYS:O    | 19:AM:125:PRO:HD2  | 2.19                     | 0.43              |
| 19:AM:80:VAL:O    | 19:AM:81:ARG:HD2   | 2.19                     | 0.43              |
| 21:AO:21:LEU:HD13 | 21:AO:22:GLY:N     | 2.34                     | 0.43              |
| 21:AO:111:ARG:HD3 | 21:AO:117:PHE:HD2  | 1.83                     | 0.43              |
| 23:AQ:97:ILE:O    | 23:AQ:99:VAL:N     | 2.52                     | 0.43              |
| 25:AS:26:GLY:O    | 25:AS:27:LYS:O     | 2.37                     | 0.43              |
| 25:AS:29:VAL:HG21 | 25:AS:69:LEU:C     | 2.39                     | 0.43              |
| 27:AU:11:ILE:CG2  | 27:AU:12:VAL:N     | 2.81                     | 0.43              |
| 29:AW:36:ILE:HG22 | 29:AW:69:GLU:OE2   | 2.19                     | 0.43              |
| 33:BA:320:A:H2'   | 33:BA:321:A:C8     | 2.54                     | 0.43              |
| 33:BA:350:G:O2'   | 33:BA:351:G:H5'    | 2.19                     | 0.43              |
| 33:BA:383:A:C8    | 33:BA:383:A:C5'    | 3.02                     | 0.43              |
| 33:BA:400:C:C2'   | 33:BA:401:C:O5'    | 2.67                     | 0.43              |
| 33:BA:862:C:C2    | 33:BA:863:U:H6     | 2.37                     | 0.43              |
| 33:BA:973:G:OP2   | 33:BA:974:A:H3'    | 2.19                     | 0.43              |
| 33:BA:980:C:O2'   | 46:BN:12:ARG:CZ    | 2.67                     | 0.43              |
| 33:BA:1077:G:C6   | 33:BA:1081:A:C6    | 3.07                     | 0.43              |
| 33:BA:1181:G:N1   | 33:BA:1182:G:N2    | 2.66                     | 0.43              |
| 33:BA:1181:G:O2'  | 33:BA:1182:G:P     | 2.76                     | 0.43              |
| 33:BA:1288:A:N3   | 33:BA:1352:C:O2'   | 2.40                     | 0.43              |
| 33:BA:1289:A:H2   | 33:BA:1372:U:O4'   | 2.01                     | 0.43              |
| 33:BA:1371:G:P    | 41:BI:12:LYS:HD2   | 2.59                     | 0.43              |
| 33:BA:1381:U:O2   | 33:BA:1382:C:O4'   | 2.37                     | 0.43              |
| 33:BA:1406:U:O2'  | 33:BA:1407:C:H5'   | 2.18                     | 0.43              |
| 33:BA:1456:A:N6   | 33:BA:1457:G:C6    | 2.87                     | 0.43              |
| 34:BB:116:LEU:O   | 34:BB:119:GLN:HB2  | 2.18                     | 0.43              |
| 35:BC:111:ASP:O   | 35:BC:115:VAL:HG23 | 2.19                     | 0.43              |
| 38:BF:12:PRO:HG2  | 38:BF:54:LEU:HD12  | 2.00                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 39:BG:68:VAL:HG12 | 39:BG:68:VAL:O    | 2.19                     | 0.43              |
| 39:BG:87:PRO:CG   | 39:BG:147:ASN:O   | 2.67                     | 0.43              |
| 41:BI:56:MET:HE2  | 41:BI:57:VAL:H    | 1.83                     | 0.43              |
| 43:BK:51:PHE:CZ   | 43:BK:61:ALA:CB   | 3.01                     | 0.43              |
| 43:BK:56:LYS:O    | 43:BK:57:SER:CB   | 2.66                     | 0.43              |
| 46:BN:80:ARG:O    | 46:BN:84:ARG:HB2  | 2.18                     | 0.43              |
| 50:BR:42:ARG:C    | 50:BR:44:THR:H    | 2.22                     | 0.43              |
| 52:BT:19:HIS:O    | 52:BT:20:ASN:C    | 2.57                     | 0.43              |
| 2:C1:36:LYS:HB3   | 2:C1:37:LYS:H     | 1.49                     | 0.43              |
| 3:C2:18:PHE:HB2   | 3:C2:19:ARG:H     | 1.61                     | 0.43              |
| 4:C3:4:LYS:HZ1    | 4:C3:61:LEU:H     | 1.62                     | 0.43              |
| 5:C4:2:LYS:O      | 5:C4:3:VAL:O      | 2.37                     | 0.43              |
| 7:CA:46:A:C4      | 7:CA:47:C:C6      | 3.07                     | 0.43              |
| 7:CA:53:A:H8      | 7:CA:53:A:C5'     | 2.32                     | 0.43              |
| 7:CA:94:A:H2'     | 7:CA:95:U:O4'     | 2.19                     | 0.43              |
| 8:CB:94:A:N6      | 8:CB:95:A:N6      | 2.66                     | 0.43              |
| 8:CB:120:U:C5     | 8:CB:149:A:N1     | 2.86                     | 0.43              |
| 8:CB:165:A:H3'    | 8:CB:165:A:C8     | 2.54                     | 0.43              |
| 8:CB:568:U:H1'    | 8:CB:570:G:N7     | 2.34                     | 0.43              |
| 8:CB:571:U:C4     | 8:CB:575:A:N7     | 2.87                     | 0.43              |
| 8:CB:729:G:H4'    | 8:CB:763:G:H4'    | 2.01                     | 0.43              |
| 8:CB:786:C:C6     | 8:CB:786:C:C3'    | 3.02                     | 0.43              |
| 8:CB:819:A:N6     | 8:CB:1189:A:H1'   | 2.33                     | 0.43              |
| 8:CB:822:G:O2'    | 8:CB:823:C:H5'    | 2.19                     | 0.43              |
| 8:CB:977:G:C2     | 8:CB:987:C:O2     | 2.72                     | 0.43              |
| 8:CB:1113:U:H2'   | 8:CB:1114:C:O4'   | 2.19                     | 0.43              |
| 8:CB:1340:U:H3'   | 26:CT:61:LEU:HD22 | 2.00                     | 0.43              |
| 8:CB:1439:A:N7    | 8:CB:1440:U:C2    | 2.87                     | 0.43              |
| 8:CB:1527:G:H21   | 8:CB:1545:A:N6    | 2.10                     | 0.43              |
| 8:CB:1564:C:H2'   | 8:CB:1565:C:H6    | 1.78                     | 0.43              |
| 8:CB:1652:A:H2'   | 8:CB:1653:G:H5'   | 2.01                     | 0.43              |
| 8:CB:1998:A:N6    | 8:CB:1999:C:C4    | 2.86                     | 0.43              |
| 8:CB:2413:G:C2    | 8:CB:2414:G:H1'   | 2.54                     | 0.43              |
| 8:CB:2553:G:N3    | 8:CB:2583:G:C1'   | 2.79                     | 0.43              |
| 8:CB:2574:G:C2    | 8:CB:2575:C:N1    | 2.87                     | 0.43              |
| 8:CB:2625:G:C6    | 8:CB:2626:C:C4    | 3.06                     | 0.43              |
| 8:CB:2662:A:C4    | 8:CB:2663:G:H1'   | 2.54                     | 0.43              |
| 8:CB:2700:A:H2    | 8:CB:2701:U:H3    | 1.66                     | 0.43              |
| 8:CB:2723:C:H5''  | 20:CN:2:ARG:HH22  | 1.83                     | 0.43              |
| 8:CB:2751:G:C2'   | 8:CB:2752:C:C6    | 3.02                     | 0.43              |
| 10:CD:48:ILE:CG2  | 10:CD:49:GLN:N    | 2.82                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:CE:1:MET:O      | 11:CE:18:THR:HG23 | 2.19                     | 0.43              |
| 11:CE:58:LYS:HZ1   | 11:CE:62:GLN:HA   | 1.84                     | 0.43              |
| 11:CE:109:LEU:HD23 | 11:CE:117:ARG:CG  | 2.49                     | 0.43              |
| 11:CE:194:LYS:HZ2  | 11:CE:194:LYS:CB  | 2.30                     | 0.43              |
| 15:CI:4:VAL:HG13   | 15:CI:5:GLN:N     | 2.32                     | 0.43              |
| 15:CI:56:VAL:CG2   | 15:CI:57:VAL:H    | 2.26                     | 0.43              |
| 16:CJ:20:ALA:HB3   | 16:CJ:57:LEU:O    | 2.19                     | 0.43              |
| 16:CJ:130:HIS:C    | 16:CJ:132:HIS:H   | 2.21                     | 0.43              |
| 17:CK:103:VAL:O    | 17:CK:123:LEU:N   | 2.52                     | 0.43              |
| 18:CL:38:GLN:CG    | 18:CL:39:LYS:N    | 2.82                     | 0.43              |
| 19:CM:34:LYS:HB2   | 19:CM:34:LYS:HE3  | 1.77                     | 0.43              |
| 19:CM:43:ALA:CB    | 19:CM:91:TYR:HB2  | 2.49                     | 0.43              |
| 19:CM:69:PRO:HB3   | 19:CM:91:TYR:O    | 2.18                     | 0.43              |
| 20:CN:20:MET:HE3   | 20:CN:21:PHE:HE1  | 1.84                     | 0.43              |
| 20:CN:123:GLU:HG2  | 20:CN:124:ALA:N   | 2.25                     | 0.43              |
| 21:CO:30:ARG:HH12  | 21:CO:97:PHE:HB3  | 1.83                     | 0.43              |
| 21:CO:37:ALA:O     | 21:CO:38:GLN:CB   | 2.62                     | 0.43              |
| 21:CO:56:LYS:O     | 21:CO:62:LEU:CD1  | 2.66                     | 0.43              |
| 21:CO:101:GLY:O    | 21:CO:103:VAL:N   | 2.51                     | 0.43              |
| 22:CP:36:LYS:C     | 22:CP:38:ARG:N    | 2.73                     | 0.43              |
| 22:CP:49:ILE:O     | 22:CP:50:ARG:CD   | 2.60                     | 0.43              |
| 24:CR:79:ARG:NH1   | 24:CR:81:LYS:HE3  | 2.20                     | 0.43              |
| 26:CT:58:VAL:HG13  | 26:CT:85:VAL:HG12 | 2.00                     | 0.43              |
| 28:CV:35:GLU:HG3   | 28:CV:93:ARG:CZ   | 2.49                     | 0.43              |
| 29:CW:35:ILE:HG21  | 29:CW:71:LYS:H    | 1.84                     | 0.43              |
| 31:CY:1:ALA:HB3    | 31:CY:38:GLU:N    | 2.30                     | 0.43              |
| 33:DA:28:A:O2'     | 33:DA:296:U:OP1   | 2.30                     | 0.43              |
| 33:DA:124:C:C6     | 33:DA:124:C:H3'   | 2.54                     | 0.43              |
| 33:DA:128:G:N2     | 33:DA:129:A:C4    | 2.86                     | 0.43              |
| 33:DA:133:U:O2     | 33:DA:230:G:N1    | 2.52                     | 0.43              |
| 33:DA:142:G:O2'    | 33:DA:143:A:H5'   | 2.18                     | 0.43              |
| 33:DA:176:C:C2'    | 33:DA:177:G:O5'   | 2.67                     | 0.43              |
| 33:DA:212:G:N3     | 33:DA:213:G:C8    | 2.87                     | 0.43              |
| 33:DA:253:A:C5     | 33:DA:254:G:N7    | 2.87                     | 0.43              |
| 33:DA:301:G:C6     | 33:DA:302:G:C5    | 3.06                     | 0.43              |
| 33:DA:318:G:C2     | 33:DA:319:G:C4    | 3.07                     | 0.43              |
| 33:DA:323:U:H3'    | 33:DA:323:U:H6    | 1.83                     | 0.43              |
| 33:DA:326:G:H5''   | 33:DA:327:A:P     | 2.58                     | 0.43              |
| 33:DA:492:C:H2'    | 33:DA:493:A:N3    | 2.34                     | 0.43              |
| 33:DA:504:C:C2     | 33:DA:542:G:C2    | 3.07                     | 0.43              |
| 33:DA:579:A:C8     | 33:DA:579:A:C3'   | 3.02                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:720:C:O4'   | 50:DR:38:ILE:CD1  | 2.66                     | 0.43              |
| 33:DA:729:A:C5    | 33:DA:730:G:N7    | 2.87                     | 0.43              |
| 33:DA:803:G:C8    | 33:DA:803:G:C3'   | 3.01                     | 0.43              |
| 33:DA:1236:A:O2'  | 33:DA:1304:G:O4'  | 2.37                     | 0.43              |
| 33:DA:1298:U:H4'  | 33:DA:1299:A:C4   | 2.53                     | 0.43              |
| 33:DA:1444:U:C5   | 33:DA:1445:U:H5   | 2.34                     | 0.43              |
| 33:DA:1461:G:C8   | 33:DA:1461:G:C5'  | 3.01                     | 0.43              |
| 33:DA:1484:C:H2'  | 33:DA:1485:U:O4'  | 2.19                     | 0.43              |
| 34:DB:72:LYS:O    | 34:DB:73:ARG:C    | 2.56                     | 0.43              |
| 35:DC:149:LYS:O   | 35:DC:149:LYS:HG2 | 2.18                     | 0.43              |
| 36:DD:137:SER:HA  | 36:DD:138:PRO:HD3 | 1.89                     | 0.43              |
| 36:DD:139:ASN:OD1 | 36:DD:139:ASN:O   | 2.37                     | 0.43              |
| 39:DG:25:PHE:HB2  | 39:DG:100:MET:HE1 | 1.98                     | 0.43              |
| 44:DL:21:PRO:HD2  | 44:DL:94:TYR:OH   | 2.18                     | 0.43              |
| 44:DL:52:CYS:SG   | 44:DL:54:VAL:CG1  | 3.06                     | 0.43              |
| 46:DN:50:LEU:H    | 46:DN:51:PRO:HD2  | 1.82                     | 0.43              |
| 47:DO:55:LEU:O    | 47:DO:58:MET:HB3  | 2.18                     | 0.43              |
| 48:DP:35:ARG:HH12 | 48:DP:51:ARG:HH12 | 1.67                     | 0.43              |
| 48:DP:56:ARG:HD2  | 48:DP:56:ARG:HA   | 1.75                     | 0.43              |
| 52:DT:79:THR:O    | 52:DT:82:ILE:HG12 | 2.19                     | 0.43              |
| 1:A0:1:ALA:H2     | 8:AB:2056:G:H21   | 1.65                     | 0.42              |
| 1:A0:35:GLU:O     | 1:A0:36:LYS:O     | 2.37                     | 0.42              |
| 2:A1:9:LYS:NZ     | 4:A3:34:LYS:HZ3   | 2.17                     | 0.42              |
| 2:A1:14:ALA:CB    | 2:A1:48:TYR:CZ    | 3.02                     | 0.42              |
| 7:AA:6:G:C8       | 7:AA:6:G:C5'      | 2.98                     | 0.42              |
| 8:AB:108:G:C5     | 8:AB:109:C:C4     | 3.06                     | 0.42              |
| 8:AB:261:G:C2'    | 8:AB:262:A:H5'    | 2.48                     | 0.42              |
| 8:AB:393:C:H5''   | 8:AB:394:C:OP2    | 2.19                     | 0.42              |
| 8:AB:464:U:H2'    | 8:AB:465:G:H5''   | 2.00                     | 0.42              |
| 8:AB:528:A:N6     | 8:AB:2042:A:N7    | 2.66                     | 0.42              |
| 8:AB:533:G:H5''   | 8:AB:533:G:H8     | 1.84                     | 0.42              |
| 8:AB:625:G:N2     | 8:AB:626:A:C4     | 2.87                     | 0.42              |
| 8:AB:947:A:H2'    | 8:AB:948:C:C6     | 2.54                     | 0.42              |
| 8:AB:992:C:C2'    | 8:AB:993:G:H5'    | 2.49                     | 0.42              |
| 8:AB:1027:A:N6    | 8:AB:1126:A:C4    | 2.87                     | 0.42              |
| 8:AB:1040:A:H2'   | 8:AB:1040:A:N3    | 2.33                     | 0.42              |
| 8:AB:1071:G:C5    | 8:AB:1072:C:C4    | 3.07                     | 0.42              |
| 8:AB:1230:A:H2'   | 8:AB:1231:U:C6    | 2.54                     | 0.42              |
| 8:AB:1233:C:H2'   | 8:AB:1234:U:C5    | 2.54                     | 0.42              |
| 8:AB:1254:A:N6    | 11:AE:77:ILE:CD1  | 2.82                     | 0.42              |
| 8:AB:1318:U:C2    | 8:AB:1319:C:C5    | 3.07                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1358:G:N2    | 8:AB:1374:G:O6     | 2.51                     | 0.42              |
| 8:AB:1372:U:C2    | 8:AB:1373:A:C8     | 3.07                     | 0.42              |
| 8:AB:1527:G:H21   | 8:AB:1545:A:N6     | 2.11                     | 0.42              |
| 8:AB:1658:C:OP1   | 10:AD:136:ASN:HA   | 2.18                     | 0.42              |
| 8:AB:1681:G:C4    | 8:AB:1762:A:N3     | 2.87                     | 0.42              |
| 8:AB:1759:A:C8    | 8:AB:2696:U:O2     | 2.72                     | 0.42              |
| 8:AB:1760:C:C6    | 8:AB:1761:C:C6     | 3.07                     | 0.42              |
| 8:AB:1862:G:C6    | 8:AB:1881:C:N4     | 2.87                     | 0.42              |
| 8:AB:1877:A:C8    | 8:AB:1877:A:H3'    | 2.54                     | 0.42              |
| 8:AB:1889:A:H1'   | 8:AB:2086:U:O2'    | 2.18                     | 0.42              |
| 8:AB:2032:G:H21   | 10:AD:152:PRO:HD3  | 1.84                     | 0.42              |
| 8:AB:2187:U:O4'   | 8:AB:2187:U:OP1    | 2.37                     | 0.42              |
| 8:AB:2263:C:H42   | 8:AB:2278:A:N6     | 2.17                     | 0.42              |
| 8:AB:2431:U:H6    | 8:AB:2431:U:H3'    | 1.82                     | 0.42              |
| 8:AB:2596:U:H5''  | 8:AB:2597:G:OP2    | 2.19                     | 0.42              |
| 8:AB:2686:G:O4'   | 8:AB:2726:A:N6     | 2.52                     | 0.42              |
| 8:AB:2737:G:H2'   | 8:AB:2738:A:H8     | 1.80                     | 0.42              |
| 8:AB:2842:G:C4    | 8:AB:2876:G:N1     | 2.87                     | 0.42              |
| 11:AE:25:GLU:O    | 11:AE:28:VAL:N     | 2.52                     | 0.42              |
| 11:AE:149:ILE:CG2 | 11:AE:183:PHE:CE2  | 3.01                     | 0.42              |
| 12:AF:106:ALA:O   | 12:AF:136:ILE:HG23 | 2.18                     | 0.42              |
| 12:AF:136:ILE:O   | 12:AF:138:PRO:HD3  | 2.19                     | 0.42              |
| 13:AG:16:VAL:HB   | 13:AG:44:HIS:CE1   | 2.54                     | 0.42              |
| 15:AI:96:LYS:HZ1  | 15:AI:138:VAL:HG21 | 1.82                     | 0.42              |
| 16:AJ:42:ALA:HB2  | 23:AQ:66:ALA:C     | 2.39                     | 0.42              |
| 17:AK:11:ALA:O    | 17:AK:99:ILE:HG23  | 2.19                     | 0.42              |
| 17:AK:103:VAL:HB  | 17:AK:107:LEU:HD23 | 2.01                     | 0.42              |
| 19:AM:60:GLN:C    | 19:AM:62:LYS:N     | 2.71                     | 0.42              |
| 21:AO:76:LYS:C    | 21:AO:76:LYS:CD    | 2.87                     | 0.42              |
| 22:AP:54:LEU:HD22 | 22:AP:55:HIS:CD2   | 2.54                     | 0.42              |
| 23:AQ:25:GLY:O    | 23:AQ:29:ARG:N     | 2.51                     | 0.42              |
| 23:AQ:110:GLU:O   | 23:AQ:113:LYS:N    | 2.52                     | 0.42              |
| 23:AQ:116:LEU:O   | 23:AQ:117:ALA:C    | 2.57                     | 0.42              |
| 25:AS:92:ARG:CG   | 25:AS:93:ALA:N     | 2.82                     | 0.42              |
| 26:AT:47:VAL:HG22 | 26:AT:47:VAL:O     | 2.18                     | 0.42              |
| 26:AT:55:VAL:HG12 | 26:AT:56:GLU:N     | 2.34                     | 0.42              |
| 27:AU:38:ILE:C    | 27:AU:62:ALA:HB2   | 2.38                     | 0.42              |
| 27:AU:39:ASN:HD22 | 27:AU:42:LYS:HD3   | 1.78                     | 0.42              |
| 31:AY:29:ARG:C    | 31:AY:30:ARG:HG2   | 2.38                     | 0.42              |
| 32:AZ:9:TYR:HE2   | 32:AZ:26:SER:C     | 2.21                     | 0.42              |
| 33:BA:110:C:H2'   | 33:BA:111:G:O4'    | 2.19                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:172:A:C8    | 33:BA:172:A:H3'   | 2.54                     | 0.42              |
| 33:BA:178:C:C4    | 33:BA:179:A:N7    | 2.87                     | 0.42              |
| 33:BA:347:G:C2    | 33:BA:348:G:C8    | 3.07                     | 0.42              |
| 33:BA:410:G:C5'   | 33:BA:411:A:OP2   | 2.67                     | 0.42              |
| 33:BA:443:C:H2'   | 33:BA:444:G:C8    | 2.53                     | 0.42              |
| 33:BA:502:A:N7    | 33:BA:503:C:C5    | 2.87                     | 0.42              |
| 33:BA:504:C:C6    | 33:BA:504:C:C3'   | 3.01                     | 0.42              |
| 33:BA:533:A:N1    | 33:BA:536:C:C6    | 2.86                     | 0.42              |
| 33:BA:543:U:OP1   | 36:BD:13:ARG:NE   | 2.45                     | 0.42              |
| 33:BA:544:G:H2'   | 33:BA:545:C:C5    | 2.54                     | 0.42              |
| 33:BA:557:G:C6    | 33:BA:558:G:C6    | 3.06                     | 0.42              |
| 33:BA:642:A:C5    | 33:BA:643:C:C4    | 3.07                     | 0.42              |
| 33:BA:679:C:C2    | 33:BA:712:A:C2    | 2.99                     | 0.42              |
| 33:BA:679:C:C5    | 33:BA:680:C:C5    | 3.07                     | 0.42              |
| 33:BA:689:C:O5'   | 33:BA:689:C:H6    | 2.02                     | 0.42              |
| 33:BA:866:C:H2'   | 33:BA:867:G:O5'   | 2.19                     | 0.42              |
| 33:BA:894:G:C8    | 33:BA:894:G:O5'   | 2.71                     | 0.42              |
| 33:BA:988:G:C1'   | 33:BA:1014:A:H61  | 2.32                     | 0.42              |
| 33:BA:994:A:C6    | 33:BA:1216:A:H5'  | 2.54                     | 0.42              |
| 33:BA:1087:G:O5'  | 33:BA:1087:G:C8   | 2.64                     | 0.42              |
| 33:BA:1220:G:H5'  | 51:BS:33:TRP:O    | 2.18                     | 0.42              |
| 33:BA:1282:C:OP2  | 33:BA:1282:C:H3'  | 2.19                     | 0.42              |
| 33:BA:1309:G:H22  | 33:BA:1329:A:H1'  | 1.83                     | 0.42              |
| 33:BA:1487:G:C2'  | 33:BA:1488:G:O5'  | 2.66                     | 0.42              |
| 34:BB:90:PHE:CD2  | 34:BB:90:PHE:O    | 2.72                     | 0.42              |
| 34:BB:103:TRP:O   | 34:BB:106:VAL:HB  | 2.19                     | 0.42              |
| 35:BC:149:LYS:HE2 | 35:BC:200:TRP:CD2 | 2.53                     | 0.42              |
| 36:BD:84:ASN:ND2  | 36:BD:86:GLY:N    | 2.67                     | 0.42              |
| 36:BD:151:GLN:HB3 | 36:BD:152:SER:H   | 1.61                     | 0.42              |
| 37:BE:17:VAL:HG23 | 37:BE:33:THR:H    | 1.83                     | 0.42              |
| 41:BI:47:VAL:HG23 | 41:BI:48:ARG:N    | 2.32                     | 0.42              |
| 42:BJ:19:ASP:C    | 42:BJ:21:ALA:N    | 2.72                     | 0.42              |
| 42:BJ:38:GLY:O    | 42:BJ:74:VAL:HA   | 2.18                     | 0.42              |
| 43:BK:59:PRO:C    | 43:BK:61:ALA:H    | 2.22                     | 0.42              |
| 44:BL:12:ALA:O    | 44:BL:13:ARG:C    | 2.57                     | 0.42              |
| 45:BM:21:ILE:HG22 | 45:BM:22:TYR:H    | 1.84                     | 0.42              |
| 48:BP:70:ARG:O    | 48:BP:74:LEU:HG   | 2.19                     | 0.42              |
| 49:BQ:61:ARG:NH1  | 49:BQ:62:GLU:O    | 2.52                     | 0.42              |
| 52:BT:53:MET:HA   | 52:BT:56:ILE:CG1  | 2.48                     | 0.42              |
| 4:C3:34:LYS:N     | 4:C3:34:LYS:CD    | 2.82                     | 0.42              |
| 5:C4:4:ARG:O      | 5:C4:5:ALA:O      | 2.38                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:CA:54:G:N2      | 12:CF:25:MET:SD    | 2.92                     | 0.42              |
| 8:CB:42:A:N3      | 8:CB:438:G:C2      | 2.86                     | 0.42              |
| 8:CB:72:U:C4      | 8:CB:112:U:O2'     | 2.64                     | 0.42              |
| 8:CB:83:A:N3      | 8:CB:104:A:H2      | 2.16                     | 0.42              |
| 8:CB:116:C:C2'    | 8:CB:117:G:O4'     | 2.66                     | 0.42              |
| 8:CB:231:A:O2'    | 8:CB:232:G:H5'     | 2.19                     | 0.42              |
| 8:CB:294:A:OP1    | 8:CB:294:A:H4'     | 2.19                     | 0.42              |
| 8:CB:363:G:H2'    | 8:CB:364:C:C5      | 2.54                     | 0.42              |
| 8:CB:384:A:N7     | 8:CB:385:C:C5      | 2.87                     | 0.42              |
| 8:CB:558:U:H5'    | 16:CJ:114:LEU:HD23 | 2.01                     | 0.42              |
| 8:CB:631:A:C1'    | 18:CL:66:PHE:HB3   | 2.41                     | 0.42              |
| 8:CB:672:C:O3'    | 11:CE:76:PRO:HG3   | 2.19                     | 0.42              |
| 8:CB:690:G:C4     | 8:CB:691:C:C5      | 3.06                     | 0.42              |
| 8:CB:777:G:H2'    | 8:CB:778:G:O5'     | 2.19                     | 0.42              |
| 8:CB:805:G:C6     | 8:CB:2068:U:H5''   | 2.54                     | 0.42              |
| 8:CB:836:G:C5     | 8:CB:837:C:N4      | 2.87                     | 0.42              |
| 8:CB:849:A:C5     | 8:CB:850:U:C4      | 3.08                     | 0.42              |
| 8:CB:960:A:N7     | 8:CB:962:G:C8      | 2.87                     | 0.42              |
| 8:CB:994:C:O2'    | 8:CB:995:C:H3'     | 2.19                     | 0.42              |
| 8:CB:1295:C:O2'   | 8:CB:1296:G:H5'    | 2.19                     | 0.42              |
| 8:CB:1355:G:C2    | 8:CB:1356:G:C5     | 3.07                     | 0.42              |
| 8:CB:1551:A:N7    | 8:CB:1552:A:C2     | 2.87                     | 0.42              |
| 8:CB:1608:A:N7    | 8:CB:1611:C:C4     | 2.87                     | 0.42              |
| 8:CB:1658:C:H5''  | 8:CB:1659:G:OP2    | 2.19                     | 0.42              |
| 8:CB:1702:G:C6    | 8:CB:1703:G:N7     | 2.86                     | 0.42              |
| 8:CB:1915:U:H2'   | 8:CB:1916:A:O4'    | 2.18                     | 0.42              |
| 8:CB:1989:G:C2'   | 8:CB:1990:C:H5'    | 2.48                     | 0.42              |
| 8:CB:2056:G:H5'   | 8:CB:2056:G:C8     | 2.54                     | 0.42              |
| 8:CB:2056:G:C4    | 8:CB:2577:A:C2     | 3.06                     | 0.42              |
| 8:CB:2080:A:H2'   | 8:CB:2081:U:C6     | 2.54                     | 0.42              |
| 8:CB:2181:U:H2'   | 8:CB:2182:U:H6     | 1.83                     | 0.42              |
| 8:CB:2295:C:OP1   | 21:CO:5:SER:HB2    | 2.19                     | 0.42              |
| 8:CB:2458:G:C8    | 8:CB:2490:G:N2     | 2.87                     | 0.42              |
| 8:CB:2482:A:C2    | 8:CB:2483:C:C2     | 3.06                     | 0.42              |
| 8:CB:2560:A:N1    | 8:CB:2561:U:C2     | 2.87                     | 0.42              |
| 8:CB:2785:C:N3    | 8:CB:2786:U:C4     | 2.87                     | 0.42              |
| 10:CD:6:GLY:CA    | 10:CD:199:SER:O    | 2.67                     | 0.42              |
| 10:CD:15:PHE:O    | 10:CD:16:THR:HB    | 2.19                     | 0.42              |
| 10:CD:157:LYS:HE2 | 16:CJ:80:HIS:HB3   | 2.00                     | 0.42              |
| 11:CE:58:LYS:NZ   | 11:CE:62:GLN:HA    | 2.34                     | 0.42              |
| 11:CE:60:TRP:HZ3  | 11:CE:67:ARG:HB2   | 1.83                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:CG:16:VAL:HG21  | 13:CG:44:HIS:CD2   | 2.54                     | 0.42              |
| 13:CG:169:ARG:CD   | 13:CG:170:THR:N    | 2.81                     | 0.42              |
| 18:CL:141:LYS:HB3  | 18:CL:142:ILE:H    | 1.52                     | 0.42              |
| 21:CO:74:VAL:O     | 21:CO:78:VAL:N     | 2.48                     | 0.42              |
| 22:CP:52:ARG:C     | 22:CP:60:VAL:HG11  | 2.36                     | 0.42              |
| 22:CP:71:ARG:NH2   | 22:CP:102:ARG:CA   | 2.81                     | 0.42              |
| 24:CR:51:VAL:HA    | 24:CR:52:PRO:HD3   | 1.71                     | 0.42              |
| 26:CT:87:LEU:HD12  | 26:CT:91:GLN:O     | 2.19                     | 0.42              |
| 33:DA:160:A:O4'    | 33:DA:344:A:C5     | 2.71                     | 0.42              |
| 33:DA:318:G:C2     | 33:DA:319:G:C8     | 3.06                     | 0.42              |
| 33:DA:403:C:H3'    | 33:DA:403:C:C6     | 2.53                     | 0.42              |
| 33:DA:548:G:C4     | 33:DA:549:C:C5     | 3.07                     | 0.42              |
| 33:DA:573:A:H2'    | 33:DA:574:A:C8     | 2.53                     | 0.42              |
| 33:DA:657:U:O2     | 33:DA:750:C:O2     | 2.37                     | 0.42              |
| 33:DA:720:C:H1'    | 50:DR:38:ILE:HG12  | 2.00                     | 0.42              |
| 33:DA:740:U:C2'    | 33:DA:741:G:H5'    | 2.49                     | 0.42              |
| 33:DA:922:G:N2     | 33:DA:1396:A:C2    | 2.86                     | 0.42              |
| 33:DA:1064:G:N2    | 33:DA:1190:G:H2'   | 2.33                     | 0.42              |
| 33:DA:1144:G:N2    | 33:DA:1146:A:N6    | 2.67                     | 0.42              |
| 33:DA:1180:A:H3'   | 33:DA:1180:A:C8    | 2.53                     | 0.42              |
| 33:DA:1254:A:H5'   | 33:DA:1356:G:H4'   | 2.00                     | 0.42              |
| 33:DA:1419:G:C2'   | 33:DA:1420:U:H5'   | 2.49                     | 0.42              |
| 33:DA:1516:G:C2    | 33:DA:1520:C:O2    | 2.72                     | 0.42              |
| 34:DB:56:LEU:HD22  | 34:DB:220:VAL:HG11 | 1.99                     | 0.42              |
| 35:DC:7:ASN:HA     | 35:DC:10:ARG:HB2   | 2.00                     | 0.42              |
| 35:DC:148:ILE:HG12 | 35:DC:149:LYS:H    | 1.84                     | 0.42              |
| 36:DD:200:VAL:O    | 36:DD:200:VAL:HG22 | 2.19                     | 0.42              |
| 37:DE:98:ALA:HB3   | 37:DE:102:THR:OG1  | 2.19                     | 0.42              |
| 39:DG:110:ARG:HB3  | 39:DG:110:ARG:NH1  | 2.34                     | 0.42              |
| 42:DJ:48:ARG:HA    | 42:DJ:66:GLU:HA    | 2.01                     | 0.42              |
| 43:DK:62:ALA:CB    | 43:DK:91:GLY:HA3   | 2.43                     | 0.42              |
| 43:DK:73:VAL:O     | 43:DK:78:ILE:CG1   | 2.66                     | 0.42              |
| 44:DL:2:THR:HG22   | 44:DL:4:ASN:H      | 1.77                     | 0.42              |
| 45:DM:75:SER:O     | 45:DM:79:LEU:HG    | 2.18                     | 0.42              |
| 1:A0:38:LEU:HD12   | 1:A0:38:LEU:HA     | 1.88                     | 0.42              |
| 2:A1:10:LEU:CB     | 2:A1:24:LYS:HA     | 2.48                     | 0.42              |
| 4:A3:38:LYS:HZ1    | 8:AB:2350:C:H5     | 1.67                     | 0.42              |
| 8:AB:55:G:H2'      | 8:AB:127:A:C2      | 2.54                     | 0.42              |
| 8:AB:93:G:C6       | 8:AB:94:A:C6       | 3.07                     | 0.42              |
| 8:AB:137:U:OP2     | 8:AB:138:U:O4      | 2.37                     | 0.42              |
| 8:AB:192:C:H42     | 8:AB:203:A:H1'     | 1.84                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:237:C:H2'    | 8:AB:238:C:C6     | 2.41                     | 0.42              |
| 8:AB:308:G:O6     | 8:AB:309:A:N1     | 2.52                     | 0.42              |
| 8:AB:410:G:N2     | 8:AB:2407:A:C6    | 2.87                     | 0.42              |
| 8:AB:453:A:H4'    | 8:AB:472:A:N6     | 2.34                     | 0.42              |
| 8:AB:584:C:C5     | 8:AB:585:G:N7     | 2.87                     | 0.42              |
| 8:AB:587:C:C2     | 18:AL:38:GLN:HG3  | 2.54                     | 0.42              |
| 8:AB:649:G:H2'    | 8:AB:650:C:C6     | 2.52                     | 0.42              |
| 8:AB:740:C:C6     | 8:AB:740:C:H5''   | 2.54                     | 0.42              |
| 8:AB:801:G:H4'    | 8:AB:802:A:OP2    | 2.19                     | 0.42              |
| 8:AB:831:G:H2'    | 8:AB:832:U:H5'    | 2.02                     | 0.42              |
| 8:AB:871:U:O2     | 8:AB:907:G:C6     | 2.72                     | 0.42              |
| 8:AB:923:G:H4'    | 29:AW:25:PHE:O    | 2.20                     | 0.42              |
| 8:AB:977:G:H5'    | 8:AB:978:G:OP2    | 2.19                     | 0.42              |
| 8:AB:1007:C:N4    | 8:AB:1008:A:C6    | 2.86                     | 0.42              |
| 8:AB:1087:G:C3'   | 8:AB:1087:G:C8    | 3.02                     | 0.42              |
| 8:AB:1216:G:C2    | 8:AB:1217:U:C6    | 3.01                     | 0.42              |
| 8:AB:1418:G:H2'   | 8:AB:1579:A:H61   | 1.83                     | 0.42              |
| 8:AB:1438:U:H2'   | 8:AB:1439:A:H8    | 1.83                     | 0.42              |
| 8:AB:1601:G:N3    | 8:AB:1601:G:H2'   | 2.35                     | 0.42              |
| 8:AB:1608:A:C4    | 8:AB:1611:C:C5    | 3.07                     | 0.42              |
| 8:AB:1664:A:H1'   | 8:AB:2726:A:N1    | 2.33                     | 0.42              |
| 8:AB:1709:U:O2'   | 8:AB:1710:G:H5'   | 2.19                     | 0.42              |
| 8:AB:1773:A:H5''  | 8:AB:1829:A:OP2   | 2.19                     | 0.42              |
| 8:AB:1905:C:H2'   | 8:AB:1930:G:O4'   | 2.20                     | 0.42              |
| 8:AB:2028:U:C2'   | 8:AB:2029:G:C8    | 2.99                     | 0.42              |
| 8:AB:2212:A:H2'   | 8:AB:2212:A:H5'   | 1.63                     | 0.42              |
| 8:AB:2446:G:N2    | 8:AB:2501:C:N4    | 2.67                     | 0.42              |
| 8:AB:2447:G:C4    | 8:AB:2501:C:C4    | 3.07                     | 0.42              |
| 8:AB:2512:C:H1'   | 10:AD:146:ILE:CG1 | 2.48                     | 0.42              |
| 8:AB:2685:G:N3    | 8:AB:2725:A:C2    | 2.88                     | 0.42              |
| 8:AB:2762:C:O2    | 8:AB:2762:C:C2'   | 2.67                     | 0.42              |
| 8:AB:2813:A:H2'   | 8:AB:2814:A:H8    | 1.83                     | 0.42              |
| 8:AB:2891:U:H2'   | 8:AB:2892:G:H5'   | 1.99                     | 0.42              |
| 9:AC:66:PHE:O     | 9:AC:67:LYS:HG3   | 2.19                     | 0.42              |
| 9:AC:90:ILE:O     | 9:AC:91:ALA:HB3   | 2.19                     | 0.42              |
| 10:AD:88:GLU:HB3  | 10:AD:90:PHE:HB2  | 2.01                     | 0.42              |
| 11:AE:172:ALA:C   | 11:AE:174:GLY:N   | 2.71                     | 0.42              |
| 12:AF:133:GLU:N   | 12:AF:150:GLY:HA2 | 2.33                     | 0.42              |
| 13:AG:168:VAL:CG1 | 13:AG:168:VAL:O   | 2.66                     | 0.42              |
| 14:AH:2:GLN:HB3   | 14:AH:39:ALA:HB3  | 2.01                     | 0.42              |
| 14:AH:35:LYS:N    | 14:AH:35:LYS:CD   | 2.78                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:AH:37:VAL:N     | 14:AH:38:PRO:CD    | 2.82                     | 0.42              |
| 17:AK:78:ARG:NH2   | 22:AP:72:VAL:HG21  | 2.33                     | 0.42              |
| 18:AL:124:GLY:O    | 18:AL:125:LEU:HD12 | 2.20                     | 0.42              |
| 20:AN:52:ILE:HD13  | 20:AN:79:LEU:HD23  | 2.00                     | 0.42              |
| 20:AN:65:LEU:O     | 20:AN:69:ARG:HG3   | 2.19                     | 0.42              |
| 22:AP:58:PHE:O     | 22:AP:59:THR:C     | 2.57                     | 0.42              |
| 24:AR:12:HIS:O     | 24:AR:13:ARG:C     | 2.57                     | 0.42              |
| 25:AS:27:LYS:H     | 25:AS:27:LYS:CD    | 2.32                     | 0.42              |
| 26:AT:34:VAL:HG11  | 26:AT:43:ILE:HD11  | 2.00                     | 0.42              |
| 26:AT:63:VAL:O     | 26:AT:64:LYS:HD2   | 2.19                     | 0.42              |
| 29:AW:47:GLY:H     | 29:AW:75:ASN:CG    | 2.23                     | 0.42              |
| 33:BA:254:G:OP1    | 49:BQ:67:SER:CB    | 2.66                     | 0.42              |
| 33:BA:293:G:N3     | 33:BA:294:U:C6     | 2.87                     | 0.42              |
| 33:BA:424:G:C8     | 33:BA:424:G:H5'    | 2.54                     | 0.42              |
| 33:BA:512:U:N3     | 33:BA:513:C:C5     | 2.87                     | 0.42              |
| 33:BA:546:A:C5'    | 33:BA:546:A:C8     | 2.98                     | 0.42              |
| 33:BA:623:C:O2'    | 33:BA:624:C:H5'    | 2.20                     | 0.42              |
| 33:BA:663:A:C2     | 33:BA:664:G:C5     | 3.07                     | 0.42              |
| 33:BA:815:A:C4     | 33:BA:1529:G:C6    | 3.07                     | 0.42              |
| 33:BA:1002:G:H2'   | 33:BA:1003:G:H5'   | 2.00                     | 0.42              |
| 33:BA:1087:G:N1    | 33:BA:1088:G:N7    | 2.67                     | 0.42              |
| 33:BA:1090:U:H4'   | 33:BA:1170:A:H2    | 1.84                     | 0.42              |
| 33:BA:1104:G:HO2'  | 33:BA:1105:A:H5'   | 1.84                     | 0.42              |
| 33:BA:1391:U:C2'   | 33:BA:1392:G:C8    | 3.02                     | 0.42              |
| 33:BA:1439:G:C6    | 33:BA:1463:U:C2    | 3.07                     | 0.42              |
| 33:BA:1442:G:O6    | 33:BA:1460:C:N3    | 2.51                     | 0.42              |
| 33:BA:1456:A:H2'   | 33:BA:1457:G:C8    | 2.54                     | 0.42              |
| 33:BA:1513:A:HO2'  | 33:BA:1514:G:H5'   | 1.84                     | 0.42              |
| 34:BB:222:GLU:OE1  | 34:BB:222:GLU:HA   | 2.19                     | 0.42              |
| 35:BC:29:ALA:HB1   | 46:BN:76:PHE:O     | 2.18                     | 0.42              |
| 35:BC:190:THR:HG22 | 35:BC:191:THR:H    | 1.84                     | 0.42              |
| 36:BD:26:ALA:O     | 36:BD:30:LYS:NZ    | 2.52                     | 0.42              |
| 38:BF:22:ILE:O     | 38:BF:25:TYR:HB2   | 2.19                     | 0.42              |
| 38:BF:38:ARG:NH2   | 50:BR:23:LYS:HZ1   | 2.16                     | 0.42              |
| 45:BM:63:VAL:O     | 45:BM:68:LEU:HG    | 2.19                     | 0.42              |
| 47:BO:77:TYR:OH    | 47:BO:87:ARG:NH2   | 2.52                     | 0.42              |
| 51:BS:30:LEU:HD22  | 51:BS:30:LEU:N     | 2.34                     | 0.42              |
| 1:C0:29:VAL:HG12   | 1:C0:30:ASP:N      | 2.34                     | 0.42              |
| 1:C0:39:ARG:HH11   | 8:CB:2816:G:C4'    | 2.32                     | 0.42              |
| 4:C3:16:THR:OG1    | 8:CB:651:G:OP1     | 2.33                     | 0.42              |
| 4:C3:41:ARG:O      | 4:C3:43:LEU:N      | 2.46                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:CA:14:U:O2'      | 7:CA:15:A:P        | 2.77                     | 0.42              |
| 8:CB:370:G:O5'     | 8:CB:370:G:H2'     | 2.18                     | 0.42              |
| 8:CB:483:A:C5'     | 27:CU:45:GLN:HB2   | 2.49                     | 0.42              |
| 8:CB:553:G:C2'     | 8:CB:554:U:H5'     | 2.49                     | 0.42              |
| 8:CB:623:C:C5      | 18:CL:100:ILE:HD11 | 2.53                     | 0.42              |
| 8:CB:689:A:H2      | 8:CB:779:U:H4'     | 1.83                     | 0.42              |
| 8:CB:693:A:O2'     | 8:CB:694:U:H5'     | 2.18                     | 0.42              |
| 8:CB:837:C:O5'     | 8:CB:837:C:C6      | 2.72                     | 0.42              |
| 8:CB:840:C:O2'     | 8:CB:841:G:H5'     | 2.19                     | 0.42              |
| 8:CB:869:G:C6      | 8:CB:909:A:N6      | 2.87                     | 0.42              |
| 8:CB:875:G:H5''    | 8:CB:876:C:OP2     | 2.19                     | 0.42              |
| 8:CB:907:G:C4      | 8:CB:908:C:C6      | 3.07                     | 0.42              |
| 8:CB:1122:G:H5''   | 8:CB:1122:G:C8     | 2.54                     | 0.42              |
| 8:CB:1195:G:N1     | 8:CB:1196:C:C5     | 2.87                     | 0.42              |
| 8:CB:1274:A:N7     | 8:CB:1646:C:C4     | 2.87                     | 0.42              |
| 8:CB:1291:C:C6     | 8:CB:1291:C:C3'    | 3.02                     | 0.42              |
| 8:CB:1396:U:O2     | 8:CB:1396:U:O4'    | 2.36                     | 0.42              |
| 8:CB:1606:C:C6     | 8:CB:1606:C:H3'    | 2.54                     | 0.42              |
| 8:CB:1692:U:H3'    | 8:CB:1694:C:H41    | 1.84                     | 0.42              |
| 8:CB:1778:U:C5     | 8:CB:1784:A:C4     | 3.07                     | 0.42              |
| 8:CB:1791:A:C8     | 8:CB:1791:A:C3'    | 3.02                     | 0.42              |
| 8:CB:1797:G:C5     | 8:CB:1798:U:C5     | 3.08                     | 0.42              |
| 8:CB:1824:G:N3     | 9:CC:249:VAL:HG11  | 2.33                     | 0.42              |
| 8:CB:1845:G:H5'    | 9:CC:268:ARG:HD2   | 2.01                     | 0.42              |
| 8:CB:2030:A:H4'    | 8:CB:2031:A:H5''   | 2.00                     | 0.42              |
| 8:CB:2074:U:H2'    | 8:CB:2075:U:O4'    | 2.19                     | 0.42              |
| 8:CB:2225:A:H5''   | 8:CB:2226:C:C5'    | 2.48                     | 0.42              |
| 8:CB:2225:A:H4'    | 8:CB:2226:C:H6     | 1.85                     | 0.42              |
| 8:CB:2322:A:N6     | 8:CB:2333:A:H62    | 2.17                     | 0.42              |
| 8:CB:2341:G:C4     | 8:CB:2342:C:C5     | 3.07                     | 0.42              |
| 8:CB:2452:C:HO2'   | 8:CB:2453:A:P      | 2.41                     | 0.42              |
| 8:CB:2531:A:N1     | 8:CB:2532:G:C5     | 2.87                     | 0.42              |
| 8:CB:2539:C:C5     | 8:CB:2540:C:C6     | 3.07                     | 0.42              |
| 8:CB:2543:G:N2     | 8:CB:2765:A:C8     | 2.87                     | 0.42              |
| 8:CB:2600:A:C2'    | 8:CB:2601:C:H5'    | 2.49                     | 0.42              |
| 8:CB:2722:G:C4'    | 20:CN:4:ARG:HG3    | 2.49                     | 0.42              |
| 8:CB:2900:A:C8     | 8:CB:2900:A:H3'    | 2.55                     | 0.42              |
| 9:CC:161:VAL:HB    | 9:CC:193:GLU:OE2   | 2.19                     | 0.42              |
| 10:CD:29:VAL:HG23  | 10:CD:51:THR:CG2   | 2.49                     | 0.42              |
| 12:CF:50:ASP:CG    | 12:CF:51:ASN:N     | 2.73                     | 0.42              |
| 13:CG:102:ILE:HG23 | 13:CG:104:LEU:CD2  | 2.49                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 14:CH:25:TYR:O    | 14:CH:25:TYR:HD1   | 2.01                     | 0.42              |
| 14:CH:68:ARG:HE   | 14:CH:71:LYS:NZ    | 2.18                     | 0.42              |
| 20:CN:8:ARG:N     | 20:CN:8:ARG:HD3    | 2.34                     | 0.42              |
| 20:CN:56:LYS:HD3  | 20:CN:57:THR:OG1   | 2.20                     | 0.42              |
| 20:CN:99:LYS:H    | 20:CN:99:LYS:CD    | 2.31                     | 0.42              |
| 21:CO:82:ALA:CA   | 21:CO:87:ILE:HB    | 2.48                     | 0.42              |
| 22:CP:26:GLU:CA   | 22:CP:47:ILE:H     | 2.31                     | 0.42              |
| 22:CP:59:THR:CG2  | 22:CP:76:HIS:CE1   | 3.02                     | 0.42              |
| 23:CQ:18:LYS:C    | 23:CQ:20:ALA:H     | 2.21                     | 0.42              |
| 26:CT:41:ALA:C    | 26:CT:43:ILE:N     | 2.72                     | 0.42              |
| 28:CV:24:ASN:CB   | 28:CV:44:HIS:HB2   | 2.49                     | 0.42              |
| 29:CW:67:LYS:HG2  | 29:CW:74:LYS:O     | 2.19                     | 0.42              |
| 30:CX:1:MET:H3    | 30:CX:6:LEU:CA     | 2.32                     | 0.42              |
| 31:CY:52:PHE:O    | 31:CY:53:MET:C     | 2.57                     | 0.42              |
| 33:DA:89:U:C6     | 33:DA:90:C:C5      | 3.07                     | 0.42              |
| 33:DA:127:G:C6    | 33:DA:128:G:N7     | 2.88                     | 0.42              |
| 33:DA:576:C:H5    | 33:DA:881:G:H1'    | 1.83                     | 0.42              |
| 33:DA:669:G:C2    | 33:DA:670:G:C5     | 3.08                     | 0.42              |
| 33:DA:724:G:C2'   | 33:DA:725:G:O5'    | 2.67                     | 0.42              |
| 33:DA:734:G:H2'   | 33:DA:735:C:H6     | 1.83                     | 0.42              |
| 33:DA:755:G:N1    | 33:DA:756:C:N4     | 2.67                     | 0.42              |
| 33:DA:831:A:H2    | 33:DA:856:C:N3     | 2.17                     | 0.42              |
| 33:DA:856:C:C2    | 33:DA:857:C:C5     | 3.04                     | 0.42              |
| 33:DA:909:A:H2'   | 33:DA:910:C:C4'    | 2.49                     | 0.42              |
| 33:DA:1233:G:C6   | 33:DA:1234:C:C4    | 3.06                     | 0.42              |
| 33:DA:1319:A:C5   | 33:DA:1323:G:C4    | 3.07                     | 0.42              |
| 33:DA:1433:A:H3'  | 33:DA:1433:A:H8    | 1.83                     | 0.42              |
| 35:DC:21:TRP:CZ3  | 35:DC:28:PHE:CE1   | 3.08                     | 0.42              |
| 35:DC:123:LEU:CA  | 35:DC:127:VAL:HG22 | 2.49                     | 0.42              |
| 37:DE:84:VAL:HG13 | 37:DE:95:MET:CB    | 2.42                     | 0.42              |
| 38:DF:73:GLU:HB2  | 38:DF:74:LEU:H     | 1.51                     | 0.42              |
| 42:DJ:64:GLN:O    | 46:DN:98:ALA:N     | 2.52                     | 0.42              |
| 44:DL:111:GLN:HB3 | 44:DL:112:ALA:H    | 1.65                     | 0.42              |
| 45:DM:93:GLY:HA2  | 45:DM:108:ARG:NH1  | 2.34                     | 0.42              |
| 46:DN:12:ARG:HD3  | 46:DN:58:ARG:HD3   | 2.01                     | 0.42              |
| 47:DO:56:LEU:O    | 47:DO:58:MET:N     | 2.52                     | 0.42              |
| 48:DP:2:VAL:HG13  | 48:DP:65:ALA:HA    | 2.01                     | 0.42              |
| 51:DS:3:SER:O     | 51:DS:4:LEU:CD1    | 2.67                     | 0.42              |
| 51:DS:13:HIS:HB2  | 51:DS:32:THR:HG21  | 2.01                     | 0.42              |
| 2:A1:46:VAL:HG22  | 2:A1:47:ILE:CG1    | 2.48                     | 0.42              |
| 3:A2:30:VAL:HG12  | 3:A2:31:LEU:N      | 2.33                     | 0.42              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 4:A3:31:ILE:HG22 | 4:A3:32:LEU:N     | 2.33                     | 0.42              |
| 4:A3:40:LYS:C    | 4:A3:42:HIS:N     | 2.73                     | 0.42              |
| 5:A4:1:MET:N     | 8:AB:2479:U:OP1   | 2.46                     | 0.42              |
| 5:A4:11:CYS:O    | 5:A4:12:ARG:HD2   | 2.19                     | 0.42              |
| 5:A4:19:ARG:NH1  | 8:AB:2756:U:OP2   | 2.52                     | 0.42              |
| 7:AA:102:G:H2'   | 7:AA:102:G:N3     | 2.33                     | 0.42              |
| 8:AB:118:A:N7    | 8:AB:119:A:N7     | 2.68                     | 0.42              |
| 8:AB:144:A:H8    | 8:AB:144:A:C5'    | 2.26                     | 0.42              |
| 8:AB:153:U:H3'   | 8:AB:153:U:H6     | 1.84                     | 0.42              |
| 8:AB:167:A:N6    | 8:AB:168:G:N3     | 2.67                     | 0.42              |
| 8:AB:410:G:N2    | 8:AB:2407:A:C5    | 2.87                     | 0.42              |
| 8:AB:583:G:C2    | 8:AB:584:C:C5     | 3.07                     | 0.42              |
| 8:AB:587:C:N3    | 18:AL:38:GLN:CG   | 2.82                     | 0.42              |
| 8:AB:592:A:N1    | 8:AB:593:U:C4     | 2.87                     | 0.42              |
| 8:AB:738:G:C2    | 8:AB:739:A:C2     | 3.07                     | 0.42              |
| 8:AB:779:U:C2'   | 8:AB:780:G:H5'    | 2.49                     | 0.42              |
| 8:AB:953:G:O2'   | 8:AB:2266:A:P     | 2.77                     | 0.42              |
| 8:AB:971:G:OP1   | 8:AB:974:G:N3     | 2.53                     | 0.42              |
| 8:AB:975:A:H5'   | 8:AB:975:A:C8     | 2.54                     | 0.42              |
| 8:AB:1006:C:N3   | 8:AB:1007:C:C5    | 2.88                     | 0.42              |
| 8:AB:1064:C:C1'  | 15:AI:90:GLY:HA2  | 2.50                     | 0.42              |
| 8:AB:1191:G:C8   | 8:AB:1191:G:H3'   | 2.54                     | 0.42              |
| 8:AB:1210:G:H4'  | 8:AB:1211:C:O5'   | 2.20                     | 0.42              |
| 8:AB:1361:G:C6   | 8:AB:1371:G:N2    | 2.87                     | 0.42              |
| 8:AB:1394:U:H3   | 8:AB:1395:A:N6    | 2.17                     | 0.42              |
| 8:AB:1417:C:O5'  | 8:AB:1588:G:H1'   | 2.18                     | 0.42              |
| 8:AB:1439:A:N7   | 8:AB:1440:U:C2    | 2.87                     | 0.42              |
| 8:AB:1483:G:H5'' | 8:AB:1483:G:C8    | 2.53                     | 0.42              |
| 8:AB:1523:U:H6   | 8:AB:1523:U:O5'   | 2.02                     | 0.42              |
| 8:AB:1628:G:C5   | 8:AB:1629:U:C5    | 3.07                     | 0.42              |
| 8:AB:1679:A:O2'  | 8:AB:1680:U:H5'   | 2.18                     | 0.42              |
| 8:AB:1788:C:H2'  | 8:AB:1789:A:C5'   | 2.49                     | 0.42              |
| 8:AB:1882:U:H2'  | 8:AB:1883:U:H6    | 1.84                     | 0.42              |
| 8:AB:2024:G:C6   | 8:AB:2025:C:C5    | 3.08                     | 0.42              |
| 8:AB:2209:G:H5'' | 8:AB:2210:U:O5'   | 2.19                     | 0.42              |
| 8:AB:2241:A:C2   | 8:AB:2242:G:C8    | 3.07                     | 0.42              |
| 8:AB:2461:A:H1'  | 8:AB:2492:U:C2    | 2.54                     | 0.42              |
| 8:AB:2588:G:C4   | 8:AB:2589:A:C8    | 3.08                     | 0.42              |
| 9:AC:141:HIS:CD2 | 9:AC:190:THR:CG2  | 3.02                     | 0.42              |
| 10:AD:38:LYS:C   | 10:AD:42:ASN:HD21 | 2.23                     | 0.42              |
| 11:AE:58:LYS:HE3 | 11:AE:70:SER:O    | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:AE:91:ASP:O    | 11:AE:92:HIS:HB2  | 2.18                     | 0.42              |
| 11:AE:163:ASN:HB2 | 11:AE:166:LYS:HG2 | 2.00                     | 0.42              |
| 12:AF:93:GLU:OE1  | 12:AF:94:ARG:HB2  | 2.20                     | 0.42              |
| 13:AG:70:LEU:HA   | 13:AG:73:SER:OG   | 2.18                     | 0.42              |
| 14:AH:4:ILE:HG23  | 14:AH:16:GLY:HA2  | 1.99                     | 0.42              |
| 14:AH:25:TYR:C    | 14:AH:25:TYR:HD1  | 2.22                     | 0.42              |
| 14:AH:141:LYS:HD3 | 14:AH:141:LYS:N   | 2.35                     | 0.42              |
| 15:AI:2:LYS:NZ    | 15:AI:2:LYS:HB2   | 2.34                     | 0.42              |
| 15:AI:39:LYS:HB3  | 15:AI:39:LYS:HE2  | 1.71                     | 0.42              |
| 16:AJ:81:ILE:HG13 | 16:AJ:82:GLY:N    | 2.34                     | 0.42              |
| 18:AL:77:ILE:O    | 18:AL:78:ARG:HB3  | 2.18                     | 0.42              |
| 19:AM:76:LYS:HZ1  | 19:AM:81:ARG:HA   | 1.84                     | 0.42              |
| 22:AP:22:GLY:O    | 22:AP:23:ASP:O    | 2.36                     | 0.42              |
| 22:AP:26:GLU:CA   | 22:AP:47:ILE:H    | 2.31                     | 0.42              |
| 22:AP:27:VAL:N    | 22:AP:47:ILE:HG13 | 2.34                     | 0.42              |
| 25:AS:70:LYS:O    | 25:AS:71:VAL:CB   | 2.66                     | 0.42              |
| 26:AT:56:GLU:O    | 26:AT:57:VAL:HG13 | 2.19                     | 0.42              |
| 29:AW:9:THR:C     | 29:AW:10:ARG:HG2  | 2.39                     | 0.42              |
| 30:AX:2:LYS:HE2   | 30:AX:46:VAL:HG22 | 2.01                     | 0.42              |
| 33:BA:37:U:C1'    | 33:BA:548:G:N2    | 2.79                     | 0.42              |
| 33:BA:44:A:N9     | 33:BA:399:G:N2    | 2.66                     | 0.42              |
| 33:BA:71:A:C4     | 33:BA:72:A:N7     | 2.87                     | 0.42              |
| 33:BA:167:A:C2    | 33:BA:168:G:C8    | 3.07                     | 0.42              |
| 33:BA:191:G:C6    | 33:BA:192:A:N7    | 2.87                     | 0.42              |
| 33:BA:231:U:C2'   | 33:BA:232:G:H5''  | 2.48                     | 0.42              |
| 33:BA:425:G:C2    | 33:BA:426:U:C6    | 3.07                     | 0.42              |
| 33:BA:720:C:O4'   | 50:BR:38:ILE:HG23 | 2.19                     | 0.42              |
| 33:BA:819:A:N7    | 33:BA:1529:G:C6   | 2.87                     | 0.42              |
| 33:BA:945:G:C2    | 33:BA:946:A:C8    | 3.08                     | 0.42              |
| 33:BA:1014:A:OP1  | 51:BS:17:LYS:HE2  | 2.19                     | 0.42              |
| 33:BA:1019:A:H2'  | 33:BA:1020:G:H8   | 1.83                     | 0.42              |
| 33:BA:1143:G:H2'  | 33:BA:1144:G:H8   | 1.83                     | 0.42              |
| 33:BA:1154:G:C3'  | 33:BA:1155:A:H5'' | 2.50                     | 0.42              |
| 33:BA:1174:G:O2'  | 33:BA:1175:G:H5'  | 2.19                     | 0.42              |
| 33:BA:1395:C:O5'  | 33:BA:1395:C:H6   | 2.01                     | 0.42              |
| 33:BA:1415:G:C6   | 33:BA:1486:G:C2   | 3.07                     | 0.42              |
| 34:BB:58:LYS:HD2  | 34:BB:58:LYS:O    | 2.19                     | 0.42              |
| 35:BC:22:PHE:CD2  | 35:BC:23:ALA:N    | 2.86                     | 0.42              |
| 35:BC:71:ARG:N    | 35:BC:72:PRO:HD3  | 2.34                     | 0.42              |
| 36:BD:29:THR:C    | 36:BD:30:LYS:HD3  | 2.40                     | 0.42              |
| 36:BD:190:LEU:O   | 36:BD:192:ALA:N   | 2.52                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:BE:23:THR:HG23 | 37:BE:28:ARG:HB2  | 2.01                     | 0.42              |
| 37:BE:151:MET:HB2 | 37:BE:155:LYS:CB  | 2.49                     | 0.42              |
| 42:BJ:10:LEU:HD11 | 42:BJ:25:ILE:CD1  | 2.48                     | 0.42              |
| 42:BJ:12:ALA:CB   | 42:BJ:18:ILE:HB   | 2.49                     | 0.42              |
| 43:BK:56:LYS:CG   | 43:BK:57:SER:N    | 2.76                     | 0.42              |
| 43:BK:76:TYR:N    | 43:BK:76:TYR:HD1  | 2.17                     | 0.42              |
| 44:BL:109:ARG:HG3 | 44:BL:109:ARG:NH1 | 2.35                     | 0.42              |
| 45:BM:49:GLU:O    | 45:BM:53:ASP:HB3  | 2.20                     | 0.42              |
| 51:BS:33:TRP:CD1  | 51:BS:51:HIS:CB   | 3.02                     | 0.42              |
| 52:BT:43:LYS:O    | 52:BT:46:ALA:HB3  | 2.18                     | 0.42              |
| 1:C0:38:LEU:HD12  | 1:C0:38:LEU:HA    | 1.91                     | 0.42              |
| 4:C3:28:LEU:O     | 4:C3:43:LEU:HD21  | 2.18                     | 0.42              |
| 5:C4:25:VAL:O     | 5:C4:26:ILE:CB    | 2.66                     | 0.42              |
| 7:CA:29:A:C8      | 7:CA:29:A:OP2     | 2.72                     | 0.42              |
| 7:CA:40:U:N3      | 7:CA:43:C:H5''    | 2.34                     | 0.42              |
| 7:CA:81:G:H2'     | 7:CA:82:U:H6      | 1.84                     | 0.42              |
| 7:CA:105:G:C5     | 7:CA:106:G:N7     | 2.87                     | 0.42              |
| 8:CB:11:C:N4      | 8:CB:2629:U:H3    | 2.18                     | 0.42              |
| 8:CB:93:G:C6      | 8:CB:94:A:C4      | 3.08                     | 0.42              |
| 8:CB:101:A:OP2    | 27:CU:90:LYS:NZ   | 2.52                     | 0.42              |
| 8:CB:220:G:C4     | 8:CB:427:U:C4     | 3.08                     | 0.42              |
| 8:CB:239:C:H2'    | 8:CB:240:C:H6     | 1.83                     | 0.42              |
| 8:CB:271:G:C2     | 8:CB:367:G:N1     | 2.87                     | 0.42              |
| 8:CB:298:G:O3'    | 8:CB:299:A:H8     | 2.02                     | 0.42              |
| 8:CB:339:U:C6     | 8:CB:339:U:C3'    | 3.02                     | 0.42              |
| 8:CB:415:A:C2     | 8:CB:2409:G:N1    | 2.87                     | 0.42              |
| 8:CB:525:U:C2'    | 8:CB:526:A:H5''   | 2.49                     | 0.42              |
| 8:CB:547:A:N3     | 8:CB:547:A:C2'    | 2.82                     | 0.42              |
| 8:CB:671:C:N4     | 8:CB:809:G:H1     | 2.17                     | 0.42              |
| 8:CB:738:G:C2     | 8:CB:759:G:C5     | 3.07                     | 0.42              |
| 8:CB:780:G:H21    | 8:CB:783:A:H62    | 1.67                     | 0.42              |
| 8:CB:819:A:C8     | 8:CB:1189:A:C6    | 3.07                     | 0.42              |
| 8:CB:1267:U:O2    | 8:CB:1267:U:C2'   | 2.65                     | 0.42              |
| 8:CB:1268:A:N6    | 8:CB:2013:A:C8    | 2.87                     | 0.42              |
| 8:CB:1281:G:O6    | 8:CB:1286:A:N7    | 2.53                     | 0.42              |
| 8:CB:1437:C:C1'   | 8:CB:1515:A:H2    | 2.31                     | 0.42              |
| 8:CB:1438:U:H2'   | 8:CB:1439:A:C8    | 2.53                     | 0.42              |
| 8:CB:1524:G:C4    | 8:CB:1525:A:C8    | 3.06                     | 0.42              |
| 8:CB:1596:A:N6    | 8:CB:1597:A:N6    | 2.68                     | 0.42              |
| 8:CB:1604:C:C2'   | 8:CB:1610:A:H62   | 2.32                     | 0.42              |
| 8:CB:1670:C:N4    | 8:CB:1671:U:H3    | 2.18                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1678:A:C2    | 8:CB:1989:G:N2    | 2.87                     | 0.42              |
| 8:CB:1718:G:O2'   | 8:CB:1719:G:H5'   | 2.19                     | 0.42              |
| 8:CB:1769:U:O2    | 8:CB:1984:G:C2    | 2.72                     | 0.42              |
| 8:CB:1787:A:O4'   | 8:CB:2589:A:H4'   | 2.19                     | 0.42              |
| 8:CB:1791:A:C2'   | 8:CB:1792:G:O5'   | 2.67                     | 0.42              |
| 8:CB:1890:A:C2    | 8:CB:2234:G:N3    | 2.86                     | 0.42              |
| 8:CB:1942:C:H5    | 8:CB:1943:U:C6    | 2.36                     | 0.42              |
| 8:CB:2065:C:HO2'  | 8:CB:2449:U:H3    | 1.62                     | 0.42              |
| 8:CB:2143:C:H2'   | 8:CB:2144:G:O4'   | 2.20                     | 0.42              |
| 8:CB:2229:U:H2'   | 8:CB:2230:G:H8    | 1.84                     | 0.42              |
| 8:CB:2231:U:OP1   | 32:CZ:28:VAL:HG23 | 2.18                     | 0.42              |
| 8:CB:2263:C:N4    | 29:CW:12:GLY:HA2  | 2.32                     | 0.42              |
| 8:CB:2330:G:N3    | 29:CW:36:ILE:HG12 | 2.33                     | 0.42              |
| 8:CB:2526:G:C4    | 8:CB:2527:C:C5    | 3.08                     | 0.42              |
| 8:CB:2740:A:N7    | 8:CB:2764:A:C6    | 2.87                     | 0.42              |
| 9:CC:163:ILE:HG22 | 9:CC:164:VAL:H    | 1.84                     | 0.42              |
| 10:CD:1:MET:HB2   | 10:CD:81:GLU:CG   | 2.48                     | 0.42              |
| 10:CD:33:ARG:O    | 10:CD:34:VAL:C    | 2.58                     | 0.42              |
| 12:CF:11:VAL:O    | 12:CF:14:LYS:HB3  | 2.19                     | 0.42              |
| 14:CH:70:GLU:C    | 14:CH:72:ILE:N    | 2.72                     | 0.42              |
| 14:CH:76:GLU:H    | 14:CH:76:GLU:HG3  | 1.69                     | 0.42              |
| 14:CH:113:SER:HG  | 14:CH:132:PHE:HE2 | 1.67                     | 0.42              |
| 15:CI:46:ASP:O    | 15:CI:50:LYS:HE2  | 2.18                     | 0.42              |
| 15:CI:77:VAL:O    | 15:CI:81:LYS:HG3  | 2.19                     | 0.42              |
| 16:CJ:59:ALA:O    | 16:CJ:62:VAL:HG22 | 2.19                     | 0.42              |
| 16:CJ:136:GLN:O   | 16:CJ:137:PRO:C   | 2.57                     | 0.42              |
| 18:CL:20:GLY:HA3  | 18:CL:21:ARG:HE   | 1.84                     | 0.42              |
| 19:CM:71:LYS:HZ2  | 19:CM:91:TYR:HD1  | 1.67                     | 0.42              |
| 20:CN:56:LYS:HE2  | 20:CN:57:THR:OG1  | 2.19                     | 0.42              |
| 22:CP:16:VAL:HA   | 22:CP:17:PRO:HD3  | 1.78                     | 0.42              |
| 22:CP:26:GLU:O    | 22:CP:46:VAL:HG13 | 2.19                     | 0.42              |
| 23:CQ:88:GLU:HA   | 24:CR:53:PHE:HB3  | 2.01                     | 0.42              |
| 24:CR:39:LEU:HB2  | 24:CR:61:ALA:HB2  | 2.02                     | 0.42              |
| 24:CR:41:ILE:O    | 24:CR:41:ILE:HG23 | 2.20                     | 0.42              |
| 25:CS:85:ILE:O    | 25:CS:85:ILE:CG2  | 2.64                     | 0.42              |
| 27:CU:85:ARG:HE   | 27:CU:86:PHE:HE1  | 1.67                     | 0.42              |
| 29:CW:69:GLU:OE2  | 29:CW:70:VAL:N    | 2.48                     | 0.42              |
| 32:CZ:37:CYS:SG   | 32:CZ:39:LYS:HB2  | 2.59                     | 0.42              |
| 33:DA:11:G:C4     | 33:DA:12:U:C5     | 3.08                     | 0.42              |
| 33:DA:57:G:C6     | 33:DA:356:A:C6    | 3.07                     | 0.42              |
| 33:DA:109:A:C5    | 33:DA:327:A:C2    | 3.06                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:129:A:O2'    | 33:DA:130:A:O5'    | 2.37                     | 0.42              |
| 33:DA:391:G:H2'    | 33:DA:392:C:O4'    | 2.20                     | 0.42              |
| 33:DA:430:A:OP1    | 36:DD:8:LEU:HB2    | 2.19                     | 0.42              |
| 33:DA:462:G:H3'    | 33:DA:463:U:C6     | 2.53                     | 0.42              |
| 33:DA:573:A:C6     | 33:DA:574:A:C6     | 3.07                     | 0.42              |
| 33:DA:577:G:N2     | 33:DA:578:C:C2     | 2.87                     | 0.42              |
| 33:DA:577:G:H1     | 33:DA:764:C:N4     | 2.18                     | 0.42              |
| 33:DA:582:C:C6     | 33:DA:582:C:C3'    | 3.02                     | 0.42              |
| 33:DA:630:A:O2'    | 33:DA:631:C:H5'    | 2.20                     | 0.42              |
| 33:DA:684:U:H2'    | 33:DA:685:G:O4'    | 2.19                     | 0.42              |
| 33:DA:705:G:N2     | 43:DK:43:TRP:CD2   | 2.80                     | 0.42              |
| 33:DA:739:C:H6     | 33:DA:739:C:O5'    | 2.02                     | 0.42              |
| 33:DA:763:G:C4     | 33:DA:764:C:C5     | 3.07                     | 0.42              |
| 33:DA:773:G:C2'    | 33:DA:774:G:O5'    | 2.66                     | 0.42              |
| 33:DA:858:G:N2     | 33:DA:859:G:N7     | 2.66                     | 0.42              |
| 33:DA:864:A:N7     | 33:DA:865:A:C6     | 2.88                     | 0.42              |
| 33:DA:947:G:N3     | 33:DA:947:G:H2'    | 2.33                     | 0.42              |
| 33:DA:977:A:C2'    | 33:DA:978:A:H5''   | 2.45                     | 0.42              |
| 33:DA:1006:G:H5''  | 33:DA:1006:G:C8    | 2.55                     | 0.42              |
| 33:DA:1088:G:C5    | 33:DA:1089:G:C8    | 3.07                     | 0.42              |
| 33:DA:1119:C:C4    | 33:DA:1120:C:H5    | 2.37                     | 0.42              |
| 33:DA:1149:C:H3'   | 33:DA:1149:C:C6    | 2.52                     | 0.42              |
| 33:DA:1157:A:H4'   | 33:DA:1158:C:C5'   | 2.49                     | 0.42              |
| 33:DA:1221:G:C6    | 33:DA:1222:G:C5    | 3.08                     | 0.42              |
| 33:DA:1225:A:N3    | 33:DA:1225:A:H2'   | 2.34                     | 0.42              |
| 33:DA:1306:A:N6    | 33:DA:1331:G:H1'   | 2.33                     | 0.42              |
| 35:DC:120:THR:HG23 | 35:DC:188:ALA:HB2  | 1.99                     | 0.42              |
| 40:DH:91:LEU:HA    | 40:DH:92:PRO:HD3   | 1.87                     | 0.42              |
| 40:DH:107:LYS:HD2  | 40:DH:107:LYS:N    | 2.34                     | 0.42              |
| 41:DI:98:ARG:CZ    | 41:DI:103:VAL:HG11 | 2.49                     | 0.42              |
| 42:DJ:15:HIS:C     | 42:DJ:17:LEU:N     | 2.73                     | 0.42              |
| 42:DJ:83:THR:HG22  | 42:DJ:83:THR:O     | 2.19                     | 0.42              |
| 43:DK:33:ILE:HG13  | 43:DK:69:CYS:SG    | 2.60                     | 0.42              |
| 47:DO:14:PHE:CD2   | 47:DO:83:ARG:CZ    | 3.02                     | 0.42              |
| 50:DR:60:ARG:O     | 50:DR:63:TYR:HB2   | 2.20                     | 0.42              |
| 53:DU:34:ARG:NE    | 53:DU:35:GLU:H     | 2.17                     | 0.42              |
| 2:A1:26:LYS:HG3    | 2:A1:29:LYS:H      | 1.84                     | 0.42              |
| 2:A1:36:LYS:HB3    | 2:A1:37:LYS:H      | 1.51                     | 0.42              |
| 2:A1:44:GLN:OE1    | 2:A1:45:HIS:N      | 2.52                     | 0.42              |
| 3:A2:9:VAL:HG23    | 3:A2:10:LEU:H      | 1.84                     | 0.42              |
| 4:A3:13:PHE:O      | 4:A3:14:LYS:HG2    | 2.19                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 4:A3:57:VAL:HG13 | 4:A3:58:ILE:HG23 | 2.02                     | 0.42              |
| 8:AB:271:G:C2    | 8:AB:367:G:C4    | 3.07                     | 0.42              |
| 8:AB:352:A:C2'   | 8:AB:353:C:H6    | 2.32                     | 0.42              |
| 8:AB:370:G:C8    | 8:AB:370:G:O5'   | 2.72                     | 0.42              |
| 8:AB:536:G:H3'   | 8:AB:537:G:H8    | 1.84                     | 0.42              |
| 8:AB:539:G:C2    | 8:AB:540:C:C2    | 3.07                     | 0.42              |
| 8:AB:562:U:C4    | 8:AB:572:A:C5    | 3.07                     | 0.42              |
| 8:AB:584:C:N4    | 8:AB:1256:G:H1   | 2.12                     | 0.42              |
| 8:AB:688:U:O2    | 8:AB:787:C:H4'   | 2.19                     | 0.42              |
| 8:AB:784:G:N1    | 8:AB:792:A:C4    | 2.87                     | 0.42              |
| 8:AB:910:A:O2'   | 8:AB:911:A:H5'   | 2.19                     | 0.42              |
| 8:AB:960:A:N7    | 8:AB:962:G:C8    | 2.88                     | 0.42              |
| 8:AB:962:G:O2'   | 8:AB:2496:C:H4'  | 2.18                     | 0.42              |
| 8:AB:980:A:C5    | 8:AB:1136:G:O4'  | 2.73                     | 0.42              |
| 8:AB:1005:C:O2'  | 8:AB:1006:C:H5'  | 2.19                     | 0.42              |
| 8:AB:1188:U:H2'  | 8:AB:1188:U:O2   | 2.19                     | 0.42              |
| 8:AB:1203:U:C5   | 8:AB:1204:A:C5   | 3.07                     | 0.42              |
| 8:AB:1285:A:H8   | 8:AB:1285:A:O5'  | 2.03                     | 0.42              |
| 8:AB:1314:C:H42  | 8:AB:1338:G:H1   | 1.67                     | 0.42              |
| 8:AB:1348:C:H5'' | 8:AB:1348:C:H6   | 1.82                     | 0.42              |
| 8:AB:1348:C:C5   | 8:AB:1349:C:C5   | 3.07                     | 0.42              |
| 8:AB:1353:A:C6   | 8:AB:1354:A:N6   | 2.87                     | 0.42              |
| 8:AB:1450:G:C8   | 8:AB:1450:G:C5'  | 3.00                     | 0.42              |
| 8:AB:1752:C:N4   | 8:AB:1756:G:C6   | 2.87                     | 0.42              |
| 8:AB:1823:G:C8   | 8:AB:1823:G:C3'  | 3.03                     | 0.42              |
| 8:AB:1831:G:C6   | 8:AB:1832:C:C4   | 3.07                     | 0.42              |
| 8:AB:1897:G:C2   | 8:AB:1898:U:C2   | 3.06                     | 0.42              |
| 8:AB:1907:G:N1   | 8:AB:1924:C:C2   | 2.87                     | 0.42              |
| 8:AB:1967:C:C2'  | 8:AB:1968:G:H5'  | 2.39                     | 0.42              |
| 8:AB:2002:G:C6   | 8:AB:2003:A:C6   | 3.08                     | 0.42              |
| 8:AB:2048:G:H1   | 8:AB:2620:C:N4   | 2.17                     | 0.42              |
| 8:AB:2051:A:N1   | 8:AB:2614:A:C5   | 2.88                     | 0.42              |
| 8:AB:2228:G:C6   | 8:AB:2229:U:C4   | 3.07                     | 0.42              |
| 8:AB:2236:U:C4   | 8:AB:2237:G:C5   | 3.08                     | 0.42              |
| 8:AB:2279:G:H5'' | 8:AB:2279:G:H8   | 1.83                     | 0.42              |
| 8:AB:2343:U:O2'  | 8:AB:2344:U:H5'  | 2.19                     | 0.42              |
| 8:AB:2394:C:O5'  | 8:AB:2394:C:H6   | 2.01                     | 0.42              |
| 8:AB:2488:G:N1   | 8:AB:2489:U:C4   | 2.87                     | 0.42              |
| 8:AB:2508:G:O2'  | 8:AB:2509:G:H5'  | 2.20                     | 0.42              |
| 8:AB:2635:A:C2   | 8:AB:2636:C:C1'  | 3.01                     | 0.42              |
| 8:AB:2754:U:O5'  | 8:AB:2754:U:H6   | 2.02                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2798:U:H1'   | 8:AB:2800:A:C6    | 2.54                     | 0.42              |
| 8:AB:2805:C:H2'   | 8:AB:2806:C:C6    | 2.54                     | 0.42              |
| 9:AC:50:THR:O     | 9:AC:51:ARG:HD3   | 2.19                     | 0.42              |
| 9:AC:136:VAL:O    | 9:AC:165:ALA:HA   | 2.20                     | 0.42              |
| 11:AE:43:THR:HG21 | 11:AE:44:ARG:NH2  | 2.34                     | 0.42              |
| 12:AF:15:LEU:C    | 12:AF:17:THR:N    | 2.71                     | 0.42              |
| 12:AF:53:ALA:HB1  | 12:AF:64:PRO:HG2  | 2.02                     | 0.42              |
| 14:AH:26:ALA:HA   | 14:AH:30:LEU:CA   | 2.49                     | 0.42              |
| 14:AH:55:GLU:C    | 14:AH:57:LYS:N    | 2.72                     | 0.42              |
| 14:AH:83:LYS:CB   | 14:AH:91:PHE:HB3  | 2.49                     | 0.42              |
| 18:AL:36:LYS:HD2  | 55:AL:2001:HOH:O  | 2.19                     | 0.42              |
| 18:AL:37:GLY:HA3  | 18:AL:41:ARG:HG2  | 2.00                     | 0.42              |
| 18:AL:78:ARG:HD2  | 18:AL:81:ASP:H    | 1.84                     | 0.42              |
| 19:AM:124:LEU:HA  | 19:AM:125:PRO:HD3 | 1.85                     | 0.42              |
| 20:AN:101:GLY:C   | 20:AN:102:PHE:CG  | 2.92                     | 0.42              |
| 22:AP:14:GLN:O    | 22:AP:14:GLN:HG2  | 2.19                     | 0.42              |
| 23:AQ:7:VAL:C     | 23:AQ:9:ALA:H     | 2.22                     | 0.42              |
| 23:AQ:31:TYR:C    | 23:AQ:34:ALA:H    | 2.23                     | 0.42              |
| 24:AR:13:ARG:O    | 24:AR:14:VAL:O    | 2.37                     | 0.42              |
| 24:AR:40:MET:CA   | 24:AR:54:VAL:HG13 | 2.49                     | 0.42              |
| 30:AX:21:LEU:O    | 30:AX:47:ARG:NH1  | 2.52                     | 0.42              |
| 32:AZ:2:LYS:O     | 32:AZ:7:PRO:O     | 2.38                     | 0.42              |
| 33:BA:376:G:C6    | 33:BA:389:A:C6    | 3.07                     | 0.42              |
| 33:BA:453:G:C2'   | 33:BA:454:G:O4'   | 2.68                     | 0.42              |
| 33:BA:456:A:H61   | 33:BA:476:U:H3    | 1.68                     | 0.42              |
| 33:BA:636:U:H3'   | 33:BA:636:U:H6    | 1.83                     | 0.42              |
| 33:BA:640:A:N6    | 33:BA:641:U:O4    | 2.51                     | 0.42              |
| 33:BA:688:G:C8    | 33:BA:688:G:C5'   | 2.95                     | 0.42              |
| 33:BA:714:G:N2    | 33:BA:777:A:H1'   | 2.35                     | 0.42              |
| 33:BA:718:A:N7    | 43:BK:117:HIS:CD2 | 2.88                     | 0.42              |
| 33:BA:722:G:H2'   | 33:BA:724:G:C8    | 2.55                     | 0.42              |
| 33:BA:784:A:N1    | 33:BA:798:U:C4    | 2.88                     | 0.42              |
| 33:BA:817:C:O2'   | 33:BA:818:G:OP2   | 2.37                     | 0.42              |
| 33:BA:993:G:N3    | 33:BA:995:C:N4    | 2.68                     | 0.42              |
| 33:BA:1054:C:H1'  | 33:BA:1196:A:C6   | 2.55                     | 0.42              |
| 33:BA:1109:C:N4   | 33:BA:1110:A:N6   | 2.67                     | 0.42              |
| 33:BA:1156:G:H5'' | 33:BA:1157:A:OP2  | 2.19                     | 0.42              |
| 33:BA:1221:G:C5'  | 51:BS:35:ARG:NH2  | 2.82                     | 0.42              |
| 33:BA:1238:A:C5'  | 33:BA:1239:A:OP2  | 2.66                     | 0.42              |
| 33:BA:1259:C:N4   | 33:BA:1260:G:C4   | 2.87                     | 0.42              |
| 33:BA:1267:C:O2   | 33:BA:1267:C:C2'  | 2.65                     | 0.42              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 33:BA:1345:U:N3   | 33:BA:1377:A:C2  | 2.87                     | 0.42              |
| 33:BA:1385:G:N1   | 33:BA:1386:G:C5  | 2.87                     | 0.42              |
| 33:BA:1407:C:O2   | 33:BA:1495:U:O2  | 2.37                     | 0.42              |
| 33:BA:1422:G:N2   | 33:BA:1479:C:C2  | 2.87                     | 0.42              |
| 33:BA:1479:C:C2   | 33:BA:1480:A:C8  | 3.07                     | 0.42              |
| 34:BB:23:ASN:HD22 | 34:BB:23:ASN:C   | 2.22                     | 0.42              |
| 38:BF:14:GLN:C    | 38:BF:16:GLU:H   | 2.22                     | 0.42              |
| 39:BG:6:ILE:HG13  | 39:BG:7:GLY:N    | 2.28                     | 0.42              |
| 41:BI:30:ASN:O    | 41:BI:31:GLN:CB  | 2.67                     | 0.42              |
| 41:BI:57:VAL:HG12 | 41:BI:58:GLU:N   | 2.34                     | 0.42              |
| 42:BJ:82:LYS:HB3  | 42:BJ:82:LYS:HE3 | 1.87                     | 0.42              |
| 44:BL:28:GLN:HB2  | 44:BL:81:ILE:O   | 2.19                     | 0.42              |
| 45:BM:2:ARG:N     | 45:BM:8:ILE:HG22 | 2.34                     | 0.42              |
| 50:BR:22:TYR:HD1  | 50:BR:23:LYS:H   | 1.66                     | 0.42              |
| 52:BT:26:MET:SD   | 52:BT:27:MET:N   | 2.92                     | 0.42              |
| 4:C3:38:LYS:HA    | 4:C3:38:LYS:HD3  | 1.62                     | 0.42              |
| 7:CA:18:G:C2      | 7:CA:19:C:C2     | 3.07                     | 0.42              |
| 7:CA:70:C:HO2'    | 7:CA:71:C:H5'    | 1.82                     | 0.42              |
| 8:CB:52:A:H2'     | 8:CB:53:A:C8     | 2.54                     | 0.42              |
| 8:CB:93:G:C2'     | 8:CB:94:A:H8     | 2.31                     | 0.42              |
| 8:CB:144:A:N6     | 26:CT:3:ARG:HH22 | 2.17                     | 0.42              |
| 8:CB:144:A:N6     | 26:CT:3:ARG:NH2  | 2.68                     | 0.42              |
| 8:CB:301:G:C6     | 8:CB:317:G:C6    | 3.07                     | 0.42              |
| 8:CB:307:G:N2     | 8:CB:310:A:OP2   | 2.52                     | 0.42              |
| 8:CB:576:U:O4     | 8:CB:577:G:O6    | 2.38                     | 0.42              |
| 8:CB:617:G:H2'    | 8:CB:618:G:O4'   | 2.19                     | 0.42              |
| 8:CB:671:C:N3     | 8:CB:672:C:C5    | 2.87                     | 0.42              |
| 8:CB:856:G:N2     | 8:CB:922:C:N4    | 2.67                     | 0.42              |
| 8:CB:905:A:C8     | 8:CB:905:A:H3'   | 2.55                     | 0.42              |
| 8:CB:969:G:C2     | 8:CB:970:U:N3    | 2.87                     | 0.42              |
| 8:CB:984:A:C8     | 8:CB:984:A:O5'   | 2.72                     | 0.42              |
| 8:CB:985:C:H6     | 8:CB:985:C:O5'   | 2.01                     | 0.42              |
| 8:CB:1015:U:C6    | 8:CB:1015:U:C3'  | 3.02                     | 0.42              |
| 8:CB:1048:A:C2    | 8:CB:1049:C:C5   | 3.07                     | 0.42              |
| 8:CB:1242:U:C4    | 8:CB:1243:C:N4   | 2.87                     | 0.42              |
| 8:CB:1252:G:N3    | 23:CQ:32:ARG:HG2 | 2.34                     | 0.42              |
| 8:CB:1263:U:C4    | 8:CB:1264:A:N1   | 2.87                     | 0.42              |
| 8:CB:1275:A:N6    | 20:CN:16:HIS:CE1 | 2.88                     | 0.42              |
| 8:CB:1453:A:H4'   | 8:CB:1454:C:OP2  | 2.19                     | 0.42              |
| 8:CB:1459:G:C8    | 8:CB:1459:G:C3'  | 3.03                     | 0.42              |
| 8:CB:1528:A:N9    | 8:CB:1544:A:N6   | 2.68                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:1666:G:O2'   | 8:CB:1667:G:H5'    | 2.19                     | 0.42              |
| 8:CB:1823:G:C2'   | 8:CB:1824:G:H5'    | 2.50                     | 0.42              |
| 8:CB:1912:A:N1    | 33:DA:1407:C:H2'   | 2.34                     | 0.42              |
| 8:CB:2001:C:C2'   | 8:CB:2002:G:O5'    | 2.67                     | 0.42              |
| 8:CB:2087:G:C8    | 8:CB:2087:G:C3'    | 3.03                     | 0.42              |
| 8:CB:2102:G:H2'   | 8:CB:2103:C:O4'    | 2.19                     | 0.42              |
| 8:CB:2204:G:N3    | 8:CB:2205:A:C8     | 2.87                     | 0.42              |
| 8:CB:2230:G:C6    | 8:CB:2231:U:C4     | 3.08                     | 0.42              |
| 8:CB:2357:G:N2    | 8:CB:2361:G:C5     | 2.88                     | 0.42              |
| 8:CB:2391:G:H22   | 8:CB:2424:C:C2'    | 2.08                     | 0.42              |
| 8:CB:2472:G:H2'   | 8:CB:2529:G:N2     | 2.35                     | 0.42              |
| 8:CB:2488:G:C2    | 8:CB:2489:U:C6     | 3.07                     | 0.42              |
| 8:CB:2560:A:C5    | 8:CB:2561:U:C6     | 3.06                     | 0.42              |
| 8:CB:2676:C:H2'   | 8:CB:2677:G:O4'    | 2.19                     | 0.42              |
| 8:CB:2727:A:C5    | 8:CB:2728:U:C4     | 3.08                     | 0.42              |
| 9:CC:82:TYR:HD1   | 9:CC:83:ASP:N      | 2.04                     | 0.42              |
| 9:CC:129:LEU:HD23 | 9:CC:129:LEU:O     | 2.19                     | 0.42              |
| 9:CC:185:ALA:C    | 9:CC:187:CYS:N     | 2.72                     | 0.42              |
| 9:CC:231:HIS:HD1  | 9:CC:242:HIS:CE1   | 2.38                     | 0.42              |
| 9:CC:263:ASP:HB2  | 9:CC:264:LYS:NZ    | 2.35                     | 0.42              |
| 10:CD:33:ARG:NH2  | 10:CD:87:GLY:CA    | 2.72                     | 0.42              |
| 11:CE:27:LEU:O    | 11:CE:31:VAL:HG23  | 2.19                     | 0.42              |
| 12:CF:104:THR:CG2 | 12:CF:105:ILE:HD12 | 2.49                     | 0.42              |
| 13:CG:87:GLN:OE1  | 13:CG:164:ALA:HA   | 2.18                     | 0.42              |
| 13:CG:93:TYR:CD1  | 13:CG:106:LEU:O    | 2.72                     | 0.42              |
| 14:CH:24:GLY:C    | 14:CH:26:ALA:N     | 2.72                     | 0.42              |
| 16:CJ:109:LEU:CB  | 16:CJ:110:PRO:HD2  | 2.34                     | 0.42              |
| 17:CK:82:ASN:HD22 | 17:CK:82:ASN:N     | 2.06                     | 0.42              |
| 17:CK:93:GLN:CD   | 17:CK:94:PRO:HD2   | 2.40                     | 0.42              |
| 21:CO:2:ASP:HB2   | 21:CO:4:LYS:CE     | 2.50                     | 0.42              |
| 23:CQ:88:GLU:HA   | 24:CR:53:PHE:CB    | 2.50                     | 0.42              |
| 24:CR:80:ARG:CG   | 24:CR:80:ARG:O     | 2.67                     | 0.42              |
| 26:CT:58:VAL:CG1  | 26:CT:59:ASN:N     | 2.82                     | 0.42              |
| 27:CU:5:ARG:HE    | 27:CU:6:ARG:HG2    | 1.85                     | 0.42              |
| 27:CU:96:LYS:O    | 27:CU:97:SER:CB    | 2.67                     | 0.42              |
| 29:CW:3:LYS:NZ    | 29:CW:10:ARG:NE    | 2.68                     | 0.42              |
| 29:CW:28:GLU:HA   | 29:CW:61:LYS:HB2   | 2.01                     | 0.42              |
| 29:CW:74:LYS:CG   | 29:CW:75:ASN:N     | 2.78                     | 0.42              |
| 31:CY:8:GLN:O     | 31:CY:9:THR:O      | 2.37                     | 0.42              |
| 32:CZ:47:LYS:HD3  | 32:CZ:52:ALA:HA    | 2.01                     | 0.42              |
| 33:DA:11:G:N3     | 33:DA:12:U:C6      | 2.87                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:DA:18:C:C2'     | 33:DA:19:A:O5'    | 2.67                     | 0.42              |
| 33:DA:88:U:N3      | 33:DA:89:U:C4     | 2.88                     | 0.42              |
| 33:DA:254:G:OP1    | 49:DQ:68:LYS:O    | 2.38                     | 0.42              |
| 33:DA:289:G:N1     | 33:DA:312:C:C2    | 2.88                     | 0.42              |
| 33:DA:318:G:C2     | 33:DA:319:G:C5    | 3.07                     | 0.42              |
| 33:DA:518:C:C4     | 33:DA:530:G:O6    | 2.72                     | 0.42              |
| 33:DA:703:G:HO2'   | 33:DA:704:A:P     | 2.42                     | 0.42              |
| 33:DA:713:G:O3'    | 33:DA:714:G:O4'   | 2.37                     | 0.42              |
| 33:DA:722:G:N1     | 33:DA:724:G:C5    | 2.87                     | 0.42              |
| 33:DA:722:G:OP1    | 50:DR:42:ARG:NH2  | 2.53                     | 0.42              |
| 33:DA:725:G:C4     | 33:DA:726:C:C6    | 3.08                     | 0.42              |
| 33:DA:743:A:H2'    | 33:DA:744:C:O4'   | 2.18                     | 0.42              |
| 33:DA:818:G:O2'    | 33:DA:820:U:C5    | 2.69                     | 0.42              |
| 33:DA:892:A:C2'    | 33:DA:893:C:H5''  | 2.49                     | 0.42              |
| 33:DA:928:G:N2     | 33:DA:1390:U:H1'  | 2.35                     | 0.42              |
| 33:DA:960:U:N3     | 33:DA:1225:A:C5   | 2.87                     | 0.42              |
| 33:DA:976:G:N2     | 33:DA:1362:A:H3'  | 2.27                     | 0.42              |
| 33:DA:1046:A:H2'   | 33:DA:1047:G:C5'  | 2.49                     | 0.42              |
| 33:DA:1069:C:C6    | 33:DA:1069:C:C3'  | 3.03                     | 0.42              |
| 33:DA:1084:G:C8    | 33:DA:1085:U:C5   | 3.07                     | 0.42              |
| 33:DA:1203:C:OP1   | 46:DN:1:ALA:CB    | 2.67                     | 0.42              |
| 33:DA:1235:U:O4    | 33:DA:1236:A:N6   | 2.52                     | 0.42              |
| 33:DA:1237:C:O5'   | 33:DA:1237:C:H6   | 2.02                     | 0.42              |
| 33:DA:1385:G:N7    | 33:DA:1386:G:C8   | 2.87                     | 0.42              |
| 33:DA:1415:G:C5    | 33:DA:1486:G:C6   | 3.08                     | 0.42              |
| 33:DA:1459:G:C2    | 33:DA:1460:C:C6   | 3.07                     | 0.42              |
| 34:DB:128:LEU:HD11 | 34:DB:132:GLU:HB3 | 2.01                     | 0.42              |
| 38:DF:17:GLN:C     | 38:DF:19:PRO:HD2  | 2.39                     | 0.42              |
| 38:DF:92:THR:HG22  | 38:DF:94:HIS:N    | 2.34                     | 0.42              |
| 39:DG:146:ALA:O    | 43:DK:60:PHE:CD2  | 2.72                     | 0.42              |
| 41:DI:114:LYS:NZ   | 41:DI:121:ARG:CG  | 2.82                     | 0.42              |
| 42:DJ:40:ILE:HD11  | 42:DJ:73:LEU:HB3  | 2.01                     | 0.42              |
| 44:DL:19:ASN:CB    | 44:DL:85:ARG:HD2  | 2.49                     | 0.42              |
| 44:DL:71:HIS:HB3   | 44:DL:98:ARG:NH2  | 2.34                     | 0.42              |
| 45:DM:71:GLU:O     | 45:DM:75:SER:HB3  | 2.20                     | 0.42              |
| 46:DN:68:ARG:NE    | 46:DN:80:ARG:HH12 | 2.17                     | 0.42              |
| 47:DO:14:PHE:HB2   | 47:DO:15:GLY:H    | 1.63                     | 0.42              |
| 48:DP:67:ILE:O     | 48:DP:67:ILE:HG23 | 2.19                     | 0.42              |
| 51:DS:14:LEU:HD12  | 51:DS:14:LEU:C    | 2.40                     | 0.42              |
| 1:A0:42:ILE:CG2    | 1:A0:47:TYR:N     | 2.83                     | 0.42              |
| 4:A3:51:LYS:HG2    | 18:AL:59:ARG:HB2  | 2.01                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 7:AA:92:C:O2'    | 7:AA:93:C:H5'    | 2.20                     | 0.42              |
| 8:AB:187:G:H2'   | 8:AB:188:G:O5'   | 2.19                     | 0.42              |
| 8:AB:202:U:O2    | 8:AB:202:U:C2'   | 2.62                     | 0.42              |
| 8:AB:260:G:C6    | 8:AB:261:G:C5    | 3.08                     | 0.42              |
| 8:AB:324:A:C8    | 8:AB:325:G:N7    | 2.88                     | 0.42              |
| 8:AB:465:G:C8    | 8:AB:465:G:H5''  | 2.54                     | 0.42              |
| 8:AB:467:G:C6    | 8:AB:468:G:N7    | 2.88                     | 0.42              |
| 8:AB:786:C:H3'   | 8:AB:786:C:C6    | 2.54                     | 0.42              |
| 8:AB:949:G:C6    | 8:AB:950:G:N7    | 2.87                     | 0.42              |
| 8:AB:985:C:C2'   | 8:AB:986:C:C5'   | 2.97                     | 0.42              |
| 8:AB:1023:U:H2'  | 8:AB:1024:G:O5'  | 2.18                     | 0.42              |
| 8:AB:1040:A:N6   | 8:AB:1116:G:N1   | 2.67                     | 0.42              |
| 8:AB:1087:G:H8   | 8:AB:1087:G:H3'  | 1.84                     | 0.42              |
| 8:AB:1275:A:N1   | 8:AB:1296:G:H1'  | 2.34                     | 0.42              |
| 8:AB:1341:G:C6   | 26:AT:84:TYR:HE2 | 2.37                     | 0.42              |
| 8:AB:1365:A:C5   | 8:AB:1366:A:N7   | 2.87                     | 0.42              |
| 8:AB:1451:C:H5'' | 8:AB:1451:C:C6   | 2.48                     | 0.42              |
| 8:AB:1454:C:C4'  | 8:AB:1455:G:OP1  | 2.67                     | 0.42              |
| 8:AB:1459:G:C8   | 8:AB:1459:G:C3'  | 3.02                     | 0.42              |
| 8:AB:1496:A:H1'  | 8:AB:1577:C:O2'  | 2.19                     | 0.42              |
| 8:AB:1598:A:N1   | 8:AB:1599:U:C2   | 2.86                     | 0.42              |
| 8:AB:1632:A:H2'  | 8:AB:1633:G:C8   | 2.55                     | 0.42              |
| 8:AB:1718:G:O2'  | 8:AB:1719:G:H5'  | 2.20                     | 0.42              |
| 8:AB:1788:C:C4   | 8:AB:1789:A:C8   | 3.08                     | 0.42              |
| 8:AB:1900:A:C6   | 8:AB:1970:A:N7   | 2.88                     | 0.42              |
| 8:AB:2027:G:C2   | 8:AB:2028:U:N1   | 2.87                     | 0.42              |
| 8:AB:2144:G:H2'  | 8:AB:2146:C:OP2  | 2.20                     | 0.42              |
| 8:AB:2199:A:C2   | 8:AB:2225:A:N3   | 2.88                     | 0.42              |
| 8:AB:2285:C:H3'  | 8:AB:2285:C:H6   | 1.84                     | 0.42              |
| 8:AB:2313:C:H2'  | 8:AB:2314:A:C8   | 2.54                     | 0.42              |
| 8:AB:2348:U:H3'  | 8:AB:2348:U:C6   | 2.54                     | 0.42              |
| 8:AB:2361:G:H2'  | 8:AB:2362:C:O4'  | 2.20                     | 0.42              |
| 8:AB:2464:G:C2   | 8:AB:2487:G:C2   | 3.07                     | 0.42              |
| 8:AB:2482:A:C2   | 8:AB:2483:C:C2   | 3.08                     | 0.42              |
| 8:AB:2511:U:H2'  | 8:AB:2512:C:O4'  | 2.19                     | 0.42              |
| 8:AB:2723:C:N3   | 8:AB:2724:U:N3   | 2.68                     | 0.42              |
| 8:AB:2737:G:H8   | 8:AB:2737:G:O5'  | 2.02                     | 0.42              |
| 8:AB:2828:G:H2'  | 8:AB:2829:A:H5'  | 2.01                     | 0.42              |
| 9:AC:22:GLU:C    | 9:AC:22:GLU:CD   | 2.78                     | 0.42              |
| 10:AD:15:PHE:CD1 | 10:AD:16:THR:N   | 2.88                     | 0.42              |
| 10:AD:30:GLU:HB2 | 10:AD:31:ALA:H   | 1.42                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AD:46:ARG:HG2   | 10:AD:80:TRP:CH2   | 2.54                     | 0.42              |
| 11:AE:32:VAL:O     | 11:AE:35:TYR:HB3   | 2.18                     | 0.42              |
| 11:AE:141:MET:SD   | 11:AE:143:LEU:O    | 2.77                     | 0.42              |
| 11:AE:148:ILE:HD12 | 11:AE:149:ILE:CA   | 2.48                     | 0.42              |
| 13:AG:156:TYR:CA   | 13:AG:170:THR:HB   | 2.49                     | 0.42              |
| 14:AH:36:ALA:C     | 14:AH:38:PRO:HD3   | 2.39                     | 0.42              |
| 15:AI:74:PRO:HD2   | 15:AI:78:LEU:HD21  | 2.00                     | 0.42              |
| 15:AI:79:LEU:O     | 15:AI:83:ALA:N     | 2.39                     | 0.42              |
| 15:AI:106:GLN:HA   | 15:AI:109:ALA:HB3  | 2.01                     | 0.42              |
| 17:AK:71:ARG:CB    | 17:AK:72:PRO:HD2   | 2.22                     | 0.42              |
| 18:AL:85:VAL:HG21  | 18:AL:98:ALA:CB    | 2.47                     | 0.42              |
| 19:AM:136:MET:HA   | 28:AV:76:ASP:CG    | 2.40                     | 0.42              |
| 20:AN:32:GLU:HB2   | 20:AN:115:LEU:HD21 | 2.01                     | 0.42              |
| 22:AP:27:VAL:O     | 22:AP:47:ILE:HG13  | 2.19                     | 0.42              |
| 22:AP:54:LEU:N     | 22:AP:58:PHE:CD1   | 2.88                     | 0.42              |
| 24:AR:66:HIS:H     | 24:AR:98:ILE:CD1   | 2.30                     | 0.42              |
| 26:AT:7:LEU:HA     | 26:AT:10:VAL:CG1   | 2.48                     | 0.42              |
| 26:AT:9:LYS:HE3    | 30:AX:22:LEU:HG    | 2.01                     | 0.42              |
| 27:AU:100:GLU:O    | 27:AU:102:ILE:HG13 | 2.19                     | 0.42              |
| 28:AV:60:VAL:HB    | 28:AV:72:VAL:O     | 2.18                     | 0.42              |
| 30:AX:4:LYS:HA     | 30:AX:7:ARG:CD     | 2.48                     | 0.42              |
| 33:BA:133:U:O2     | 33:BA:230:G:C5     | 2.73                     | 0.42              |
| 33:BA:439:U:H5'    | 36:BD:120:LYS:CG   | 2.49                     | 0.42              |
| 33:BA:564:C:N3     | 33:BA:565:U:N3     | 2.67                     | 0.42              |
| 33:BA:572:A:H4'    | 33:BA:916:U:O2'    | 2.19                     | 0.42              |
| 33:BA:637:C:H2'    | 33:BA:638:U:H6     | 1.83                     | 0.42              |
| 33:BA:705:G:H2'    | 33:BA:706:A:O4'    | 2.20                     | 0.42              |
| 33:BA:714:G:C6     | 33:BA:715:A:C2     | 3.08                     | 0.42              |
| 33:BA:750:C:O2     | 47:BO:22:GLY:HA3   | 2.18                     | 0.42              |
| 33:BA:765:G:H1'    | 33:BA:812:G:N2     | 2.35                     | 0.42              |
| 33:BA:866:C:N3     | 33:BA:867:G:C1'    | 2.78                     | 0.42              |
| 33:BA:913:A:C4'    | 33:BA:914:A:O5'    | 2.67                     | 0.42              |
| 33:BA:987:G:H8     | 33:BA:987:G:O5'    | 2.01                     | 0.42              |
| 33:BA:1035:A:C8    | 33:BA:1035:A:C3'   | 3.03                     | 0.42              |
| 33:BA:1323:G:H2'   | 33:BA:1324:A:N7    | 2.34                     | 0.42              |
| 33:BA:1348:U:O2    | 33:BA:1349:A:C8    | 2.73                     | 0.42              |
| 33:BA:1473:G:H8    | 33:BA:1473:G:H5''  | 1.84                     | 0.42              |
| 33:BA:1512:U:C3'   | 33:BA:1513:A:H5''  | 2.49                     | 0.42              |
| 33:BA:1531:A:H2'   | 33:BA:1532:U:C6    | 2.55                     | 0.42              |
| 37:BE:60:GLN:O     | 37:BE:63:MET:HB2   | 2.20                     | 0.42              |
| 39:BG:49:LEU:C     | 39:BG:51:GLN:H     | 2.22                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BI:97:LEU:HD12 | 41:BI:102:PHE:HD1  | 1.83                     | 0.42              |
| 43:BK:97:ARG:C    | 43:BK:99:LEU:H     | 2.23                     | 0.42              |
| 45:BM:89:ARG:HH12 | 45:BM:101:THR:HG21 | 1.82                     | 0.42              |
| 46:BN:61:ASN:HB3  | 46:BN:72:PHE:CE2   | 2.53                     | 0.42              |
| 48:BP:16:PHE:O    | 48:BP:16:PHE:CD1   | 2.73                     | 0.42              |
| 49:BQ:4:ILE:CD1   | 49:BQ:6:THR:HG23   | 2.50                     | 0.42              |
| 49:BQ:10:ARG:NH2  | 49:BQ:56:ASP:N     | 2.66                     | 0.42              |
| 49:BQ:30:HIS:CG   | 49:BQ:31:PRO:HD2   | 2.54                     | 0.42              |
| 49:BQ:74:LEU:HD22 | 49:BQ:75:VAL:N     | 2.33                     | 0.42              |
| 52:BT:38:ILE:O    | 52:BT:40:ALA:N     | 2.52                     | 0.42              |
| 1:C0:48:TYR:CD1   | 1:C0:48:TYR:C      | 2.88                     | 0.42              |
| 1:C0:52:LYS:O     | 1:C0:54:ILE:N      | 2.52                     | 0.42              |
| 4:C3:12:ARG:CZ    | 18:CL:62:PRO:CG    | 2.97                     | 0.42              |
| 7:CA:37:C:O2      | 7:CA:37:C:H2'      | 2.20                     | 0.42              |
| 8:CB:8:C:N4       | 8:CB:9:G:C6        | 2.87                     | 0.42              |
| 8:CB:108:G:C6     | 8:CB:109:C:N3      | 2.87                     | 0.42              |
| 8:CB:146:A:H2'    | 8:CB:147:C:C6      | 2.55                     | 0.42              |
| 8:CB:318:C:H2'    | 8:CB:319:G:H8      | 1.84                     | 0.42              |
| 8:CB:372:G:H8     | 32:CZ:54:GLY:HA3   | 1.85                     | 0.42              |
| 8:CB:411:G:H4'    | 8:CB:412:A:C5'     | 2.49                     | 0.42              |
| 8:CB:464:U:H2'    | 8:CB:465:G:O4'     | 2.18                     | 0.42              |
| 8:CB:483:A:H3'    | 8:CB:484:C:H6      | 1.85                     | 0.42              |
| 8:CB:492:A:H2     | 25:CS:7:HIS:NE2    | 2.17                     | 0.42              |
| 8:CB:536:G:C6     | 8:CB:537:G:C4      | 3.08                     | 0.42              |
| 8:CB:563:A:C2     | 8:CB:564:C:O2      | 2.72                     | 0.42              |
| 8:CB:618:G:N3     | 8:CB:618:G:H2'     | 2.34                     | 0.42              |
| 8:CB:688:U:H5'    | 8:CB:1780:A:C2     | 2.54                     | 0.42              |
| 8:CB:790:U:H5''   | 55:CB:5150:HOH:O   | 2.18                     | 0.42              |
| 8:CB:825:A:C5     | 8:CB:826:U:C5      | 3.08                     | 0.42              |
| 8:CB:851:C:H2'    | 8:CB:852:U:C5      | 2.48                     | 0.42              |
| 8:CB:1077:A:H2'   | 8:CB:1077:A:N3     | 2.34                     | 0.42              |
| 8:CB:1234:U:O2    | 8:CB:1235:G:C1'    | 2.67                     | 0.42              |
| 8:CB:1236:G:O2'   | 8:CB:1237:A:O5'    | 2.37                     | 0.42              |
| 8:CB:1369:G:C1'   | 8:CB:1809:A:H61    | 2.31                     | 0.42              |
| 8:CB:1571:A:N1    | 8:CB:1572:A:C5     | 2.87                     | 0.42              |
| 8:CB:1571:A:N3    | 8:CB:1572:A:C8     | 2.87                     | 0.42              |
| 8:CB:1803:A:C2    | 8:CB:1822:C:O2     | 2.64                     | 0.42              |
| 8:CB:2017:U:H5''  | 8:CB:2018:G:OP1    | 2.19                     | 0.42              |
| 8:CB:2050:C:C4    | 8:CB:2051:A:C6     | 3.08                     | 0.42              |
| 8:CB:2060:A:O4'   | 8:CB:2502:G:H1'    | 2.19                     | 0.42              |
| 8:CB:2199:A:C3'   | 8:CB:2200:C:H5'    | 2.48                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:2228:G:C5    | 8:CB:2229:U:C4    | 3.07                     | 0.42              |
| 8:CB:2313:C:H2'   | 8:CB:2314:A:C8    | 2.55                     | 0.42              |
| 8:CB:2331:G:H21   | 8:CB:2336:A:H8    | 1.64                     | 0.42              |
| 8:CB:2415:G:C4    | 8:CB:2416:C:C6    | 3.08                     | 0.42              |
| 8:CB:2496:C:OP1   | 19:CM:81:ARG:HB2  | 2.19                     | 0.42              |
| 8:CB:2700:A:O2'   | 8:CB:2701:U:H5'   | 2.20                     | 0.42              |
| 8:CB:2714:G:H2'   | 8:CB:2715:C:H6    | 1.85                     | 0.42              |
| 8:CB:2732:G:H3'   | 8:CB:2733:A:C5'   | 2.49                     | 0.42              |
| 8:CB:2734:A:H8    | 8:CB:2734:A:H3'   | 1.84                     | 0.42              |
| 8:CB:2751:G:H2'   | 8:CB:2752:C:C6    | 2.54                     | 0.42              |
| 8:CB:2760:C:C3'   | 8:CB:2761:A:C5'   | 2.97                     | 0.42              |
| 8:CB:2901:C:H3'   | 8:CB:2902:C:C5    | 2.55                     | 0.42              |
| 10:CD:31:ALA:CB   | 10:CD:95:SER:O    | 2.67                     | 0.42              |
| 11:CE:148:ILE:CB  | 11:CE:185:LYS:HB3 | 2.49                     | 0.42              |
| 13:CG:108:PHE:CZ  | 13:CG:151:ARG:CG  | 2.99                     | 0.42              |
| 15:CI:14:ALA:HB3  | 15:CI:51:GLY:H    | 1.83                     | 0.42              |
| 16:CJ:41:LYS:HD2  | 16:CJ:46:PRO:CD   | 2.46                     | 0.42              |
| 16:CJ:44:TYR:OH   | 16:CJ:49:ASP:C    | 2.58                     | 0.42              |
| 17:CK:66:LYS:HG3  | 17:CK:80:ASP:HA   | 2.01                     | 0.42              |
| 19:CM:5:LYS:H     | 19:CM:69:PRO:HG2  | 1.84                     | 0.42              |
| 19:CM:15:GLY:N    | 19:CM:72:PRO:HB3  | 2.34                     | 0.42              |
| 19:CM:101:VAL:O   | 19:CM:102:LEU:HB2 | 2.19                     | 0.42              |
| 21:CO:34:HIS:HA   | 21:CO:53:THR:CG2  | 2.48                     | 0.42              |
| 21:CO:82:ALA:O    | 21:CO:83:LEU:HD13 | 2.19                     | 0.42              |
| 23:CQ:24:TYR:CD1  | 23:CQ:25:GLY:N    | 2.88                     | 0.42              |
| 23:CQ:46:TYR:HD1  | 24:CR:78:ARG:C    | 2.21                     | 0.42              |
| 24:CR:38:VAL:C    | 24:CR:40:MET:H    | 2.23                     | 0.42              |
| 24:CR:39:LEU:HD13 | 24:CR:57:GLY:HA3  | 2.02                     | 0.42              |
| 24:CR:80:ARG:HG3  | 24:CR:86:GLN:N    | 2.35                     | 0.42              |
| 33:DA:10:A:H2'    | 33:DA:11:G:H8     | 1.85                     | 0.42              |
| 33:DA:39:G:C6     | 33:DA:404:G:N1    | 2.87                     | 0.42              |
| 33:DA:47:C:C6     | 33:DA:365:U:H2'   | 2.55                     | 0.42              |
| 33:DA:70:U:HO2'   | 33:DA:71:A:P      | 2.42                     | 0.42              |
| 33:DA:109:A:C2    | 33:DA:327:A:H2    | 2.36                     | 0.42              |
| 33:DA:198:G:H8    | 33:DA:198:G:P     | 2.43                     | 0.42              |
| 33:DA:373:A:C8    | 33:DA:373:A:C5'   | 2.93                     | 0.42              |
| 33:DA:391:G:N2    | 33:DA:392:C:C2    | 2.88                     | 0.42              |
| 33:DA:507:C:C5    | 33:DA:508:U:C2    | 3.07                     | 0.42              |
| 33:DA:552:U:O4'   | 44:DL:82:ARG:HD2  | 2.18                     | 0.42              |
| 33:DA:577:G:C8    | 33:DA:816:A:N6    | 2.86                     | 0.42              |
| 33:DA:602:A:H3'   | 33:DA:602:A:H8    | 1.78                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:728:A:H2'    | 33:DA:729:A:N7     | 2.33                     | 0.42              |
| 33:DA:813:U:C5'    | 33:DA:813:U:H6     | 2.32                     | 0.42              |
| 33:DA:830:G:N2     | 33:DA:857:C:C6     | 2.87                     | 0.42              |
| 33:DA:937:A:O2'    | 33:DA:1378:C:N4    | 2.48                     | 0.42              |
| 33:DA:1024:G:C5    | 33:DA:1025:U:H5    | 2.37                     | 0.42              |
| 33:DA:1185:G:H2'   | 33:DA:1186:G:C5'   | 2.49                     | 0.42              |
| 33:DA:1185:G:O5'   | 33:DA:1185:G:H8    | 2.02                     | 0.42              |
| 33:DA:1289:A:H2    | 33:DA:1371:G:N2    | 2.17                     | 0.42              |
| 33:DA:1355:G:H1    | 33:DA:1367:C:H42   | 1.67                     | 0.42              |
| 33:DA:1408:A:H2'   | 33:DA:1409:C:C5'   | 2.50                     | 0.42              |
| 34:DB:156:LEU:HD23 | 34:DB:180:ILE:HD11 | 2.01                     | 0.42              |
| 35:DC:10:ARG:NE    | 35:DC:179:ALA:CB   | 2.67                     | 0.42              |
| 35:DC:58:ARG:HB3   | 35:DC:63:ILE:HA    | 2.01                     | 0.42              |
| 36:DD:11:SER:HG    | 36:DD:18:LEU:HB2   | 1.85                     | 0.42              |
| 36:DD:149:LYS:C    | 36:DD:151:GLN:H    | 2.23                     | 0.42              |
| 37:DE:144:GLU:O    | 37:DE:146:MET:O    | 2.38                     | 0.42              |
| 47:DO:42:PHE:CZ    | 47:DO:55:LEU:HD22  | 2.55                     | 0.42              |
| 49:DQ:41:THR:HG22  | 49:DQ:43:LEU:CD1   | 2.49                     | 0.42              |
| 49:DQ:62:GLU:HG2   | 49:DQ:63:CYS:H     | 1.85                     | 0.42              |
| 51:DS:35:ARG:HH21  | 51:DS:74:ALA:HB3   | 1.85                     | 0.42              |
| 53:DU:33:ARG:HB3   | 53:DU:34:ARG:H     | 1.55                     | 0.42              |
| 2:A1:26:LYS:HB2    | 2:A1:26:LYS:HE2    | 1.71                     | 0.42              |
| 4:A3:23:HIS:O      | 4:A3:24:LYS:HG3    | 2.19                     | 0.42              |
| 7:AA:5:U:H2'       | 7:AA:6:G:H5'       | 2.01                     | 0.42              |
| 7:AA:14:U:HO2'     | 7:AA:15:A:P        | 2.43                     | 0.42              |
| 7:AA:14:U:H5''     | 7:AA:71:C:O4'      | 2.18                     | 0.42              |
| 7:AA:30:C:C6       | 7:AA:30:C:H5''     | 2.54                     | 0.42              |
| 7:AA:106:G:C4      | 7:AA:107:G:N7      | 2.88                     | 0.42              |
| 8:AB:102:U:H4'     | 8:AB:103:A:OP2     | 2.19                     | 0.42              |
| 8:AB:116:C:H2'     | 8:AB:117:G:H8      | 1.84                     | 0.42              |
| 8:AB:235:U:H2'     | 8:AB:236:C:C6      | 2.47                     | 0.42              |
| 8:AB:281:C:C6      | 8:AB:281:C:H5''    | 2.55                     | 0.42              |
| 8:AB:315:G:H2'     | 8:AB:316:C:C6      | 2.54                     | 0.42              |
| 8:AB:325:G:C6      | 8:AB:326:G:C5      | 3.08                     | 0.42              |
| 8:AB:370:G:C6      | 8:AB:424:G:C5      | 3.08                     | 0.42              |
| 8:AB:412:A:N7      | 8:AB:2412:A:H1'    | 2.35                     | 0.42              |
| 8:AB:460:A:C2'     | 8:AB:461:C:O5'     | 2.68                     | 0.42              |
| 8:AB:483:A:H4'     | 27:AU:45:GLN:HA    | 2.02                     | 0.42              |
| 8:AB:607:U:H3'     | 8:AB:607:U:C6      | 2.55                     | 0.42              |
| 8:AB:662:G:H2'     | 8:AB:663:G:H5'     | 2.02                     | 0.42              |
| 8:AB:735:A:C4      | 8:AB:736:C:C6      | 3.07                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:826:U:N3      | 8:AB:828:U:H1'     | 2.34                     | 0.42              |
| 8:AB:925:A:N6      | 8:AB:926:G:C6      | 2.88                     | 0.42              |
| 8:AB:969:G:H2'     | 8:AB:970:U:H6      | 1.85                     | 0.42              |
| 8:AB:1127:A:O2'    | 8:AB:1128:G:H5'    | 2.20                     | 0.42              |
| 8:AB:1202:G:C6     | 8:AB:1203:U:C2     | 3.08                     | 0.42              |
| 8:AB:1220:G:C2     | 8:AB:1221:C:C6     | 3.08                     | 0.42              |
| 8:AB:1350:C:H5'    | 8:AB:1351:C:OP2    | 2.19                     | 0.42              |
| 8:AB:1559:U:C6     | 8:AB:1559:U:H5''   | 2.54                     | 0.42              |
| 8:AB:1568:G:H5''   | 9:AC:60:ALA:HB2    | 2.01                     | 0.42              |
| 8:AB:1571:A:N1     | 8:AB:1572:A:C6     | 2.88                     | 0.42              |
| 8:AB:1635:A:H2'    | 8:AB:1636:U:H5'    | 2.01                     | 0.42              |
| 8:AB:1661:G:H2'    | 8:AB:1662:U:C5'    | 2.50                     | 0.42              |
| 8:AB:1663:G:N2     | 8:AB:1997:C:C2     | 2.83                     | 0.42              |
| 8:AB:1790:C:OP1    | 9:AC:219:VAL:HB    | 2.18                     | 0.42              |
| 8:AB:1791:A:C1'    | 9:AC:205:GLY:O     | 2.68                     | 0.42              |
| 8:AB:2135:A:H2'    | 8:AB:2136:G:C8     | 2.55                     | 0.42              |
| 8:AB:2392:A:C8     | 8:AB:2429:G:C6     | 3.08                     | 0.42              |
| 8:AB:2635:A:OP1    | 10:AD:77:ARG:CD    | 2.67                     | 0.42              |
| 8:AB:2700:A:O2'    | 8:AB:2701:U:H5'    | 2.19                     | 0.42              |
| 8:AB:2723:C:C2     | 8:AB:2724:U:C2     | 3.08                     | 0.42              |
| 8:AB:2837:A:C2'    | 8:AB:2838:G:H5''   | 2.48                     | 0.42              |
| 8:AB:2850:A:N3     | 8:AB:2851:A:C8     | 2.88                     | 0.42              |
| 9:AC:226:PRO:HG3   | 9:AC:232:GLY:O     | 2.20                     | 0.42              |
| 11:AE:132:LYS:HD3  | 11:AE:133:LEU:HD23 | 2.01                     | 0.42              |
| 11:AE:152:GLU:O    | 11:AE:153:LEU:C    | 2.57                     | 0.42              |
| 12:AF:12:VAL:CG1   | 12:AF:27:VAL:HG21  | 2.48                     | 0.42              |
| 12:AF:63:LYS:O     | 12:AF:88:VAL:HG22  | 2.19                     | 0.42              |
| 12:AF:132:ARG:HE   | 12:AF:133:GLU:H    | 1.65                     | 0.42              |
| 14:AH:117:LEU:HD21 | 14:AH:128:HIS:CE1  | 2.50                     | 0.42              |
| 14:AH:117:LEU:HD13 | 14:AH:121:VAL:HG21 | 2.01                     | 0.42              |
| 16:AJ:84:ILE:HG22  | 16:AJ:85:LYS:H     | 1.84                     | 0.42              |
| 17:AK:2:ILE:CB     | 17:AK:67:LYS:HE3   | 2.50                     | 0.42              |
| 17:AK:19:VAL:HG12  | 17:AK:44:LYS:H     | 1.83                     | 0.42              |
| 18:AL:94:THR:O     | 18:AL:96:LYS:CD    | 2.66                     | 0.42              |
| 18:AL:94:THR:HB    | 18:AL:103:ILE:HG12 | 2.01                     | 0.42              |
| 19:AM:47:GLU:OE1   | 19:AM:50:ARG:HG2   | 2.20                     | 0.42              |
| 22:AP:52:ARG:C     | 22:AP:60:VAL:HG11  | 2.37                     | 0.42              |
| 22:AP:93:LYS:HD3   | 22:AP:96:LEU:HG    | 2.02                     | 0.42              |
| 23:AQ:61:ILE:HG22  | 23:AQ:64:ILE:HD12  | 2.01                     | 0.42              |
| 23:AQ:92:LYS:H     | 23:AQ:92:LYS:HD3   | 1.85                     | 0.42              |
| 25:AS:27:LYS:O     | 25:AS:70:LYS:O     | 2.37                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:AS:86:MET:HB3   | 25:AS:94:ASP:CB    | 2.49                     | 0.42              |
| 27:AU:30:SER:O     | 27:AU:31:GLY:O     | 2.38                     | 0.42              |
| 27:AU:33:VAL:HG11  | 27:AU:66:VAL:HG12  | 2.00                     | 0.42              |
| 28:AV:30:ILE:HG22  | 28:AV:93:ARG:HH21  | 1.84                     | 0.42              |
| 28:AV:63:ILE:HB    | 28:AV:70:ILE:CG1   | 2.43                     | 0.42              |
| 29:AW:36:ILE:HG21  | 29:AW:68:PHE:CD1   | 2.54                     | 0.42              |
| 30:AX:4:LYS:HB3    | 30:AX:4:LYS:HE2    | 1.45                     | 0.42              |
| 30:AX:34:SER:O     | 30:AX:35:GLY:C     | 2.57                     | 0.42              |
| 32:AZ:6:HIS:CD2    | 32:AZ:7:PRO:CD     | 2.94                     | 0.42              |
| 33:BA:49:U:O2      | 33:BA:362:G:H1'    | 2.20                     | 0.42              |
| 33:BA:57:G:C6      | 33:BA:356:A:C6     | 3.07                     | 0.42              |
| 33:BA:71:A:H1'     | 33:BA:72:A:C5'     | 2.50                     | 0.42              |
| 33:BA:170:U:O2'    | 33:BA:171:A:H5'    | 2.20                     | 0.42              |
| 33:BA:275:G:C2     | 33:BA:276:G:C8     | 3.08                     | 0.42              |
| 33:BA:318:G:C2     | 33:BA:319:G:C4     | 3.08                     | 0.42              |
| 33:BA:363:A:OP1    | 44:BL:57:THR:HG21  | 2.19                     | 0.42              |
| 33:BA:521:G:C2     | 33:BA:522:C:C5     | 3.08                     | 0.42              |
| 33:BA:582:C:O2     | 33:BA:760:G:C6     | 2.73                     | 0.42              |
| 33:BA:661:G:C2     | 33:BA:745:G:C4     | 3.08                     | 0.42              |
| 33:BA:675:A:C6     | 33:BA:716:A:C2     | 3.08                     | 0.42              |
| 33:BA:688:G:H5''   | 33:BA:688:G:H8     | 1.78                     | 0.42              |
| 33:BA:876:C:H6     | 33:BA:876:C:H5''   | 1.84                     | 0.42              |
| 33:BA:894:G:O5'    | 33:BA:894:G:H8     | 2.02                     | 0.42              |
| 33:BA:924:C:H5'    | 33:BA:1399:C:OP2   | 2.20                     | 0.42              |
| 33:BA:1058:G:C5    | 33:BA:1059:C:C4    | 3.08                     | 0.42              |
| 33:BA:1244:G:C6    | 33:BA:1245:C:C2    | 3.07                     | 0.42              |
| 33:BA:1302:C:H6    | 33:BA:1302:C:H2'   | 1.64                     | 0.42              |
| 33:BA:1314:C:H42   | 51:BS:3:SER:HB2    | 1.84                     | 0.42              |
| 33:BA:1341:U:H2'   | 33:BA:1342:C:C6    | 2.55                     | 0.42              |
| 33:BA:1415:G:C4    | 33:BA:1416:G:N7    | 2.88                     | 0.42              |
| 34:BB:74:ALA:O     | 34:BB:75:ALA:HB2   | 2.19                     | 0.42              |
| 35:BC:11:LEU:HD13  | 46:BN:95:LEU:O     | 2.18                     | 0.42              |
| 35:BC:163:ARG:CG   | 35:BC:164:THR:N    | 2.83                     | 0.42              |
| 36:BD:144:ILE:HD13 | 36:BD:154:VAL:HG21 | 2.00                     | 0.42              |
| 37:BE:95:MET:CE    | 37:BE:114:LEU:HD21 | 2.49                     | 0.42              |
| 40:BH:27:PRO:HG2   | 40:BH:32:LYS:NZ    | 2.35                     | 0.42              |
| 40:BH:95:MET:HB2   | 40:BH:99:GLY:H     | 1.85                     | 0.42              |
| 41:BI:51:LEU:H     | 41:BI:51:LEU:CD1   | 2.33                     | 0.42              |
| 42:BJ:65:TYR:CD2   | 46:BN:97:LYS:HD3   | 2.54                     | 0.42              |
| 43:BK:34:THR:C     | 43:BK:41:LEU:HD12  | 2.40                     | 0.42              |
| 46:BN:24:ALA:O     | 46:BN:27:LYS:HG3   | 2.19                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 46:BN:66:THR:CG2  | 46:BN:67:GLY:N    | 2.79                     | 0.42              |
| 48:BP:39:PHE:CG   | 48:BP:40:ASN:N    | 2.88                     | 0.42              |
| 48:BP:40:ASN:CG   | 48:BP:42:ILE:HG12 | 2.39                     | 0.42              |
| 48:BP:52:LEU:HD13 | 48:BP:57:ILE:HD11 | 2.02                     | 0.42              |
| 1:C0:29:VAL:HG13  | 1:C0:30:ASP:H     | 1.85                     | 0.42              |
| 2:C1:26:LYS:HB2   | 2:C1:26:LYS:HE2   | 1.70                     | 0.42              |
| 2:C1:40:PRO:CB    | 2:C1:42:VAL:HG22  | 2.49                     | 0.42              |
| 4:C3:12:ARG:C     | 4:C3:13:PHE:CD1   | 2.93                     | 0.42              |
| 8:CB:87:U:H6      | 8:CB:87:U:H3'     | 1.84                     | 0.42              |
| 8:CB:142:A:H2'    | 8:CB:143:C:N3     | 2.34                     | 0.42              |
| 8:CB:261:G:H2'    | 8:CB:262:A:H5'    | 2.02                     | 0.42              |
| 8:CB:309:A:N1     | 8:CB:330:A:N7     | 2.67                     | 0.42              |
| 8:CB:372:G:C8     | 32:CZ:54:GLY:CA   | 3.01                     | 0.42              |
| 8:CB:416:U:O5'    | 8:CB:416:U:H6     | 2.03                     | 0.42              |
| 8:CB:439:A:C8     | 8:CB:439:A:H3'    | 2.55                     | 0.42              |
| 8:CB:467:G:C2'    | 8:CB:468:G:H5'    | 2.49                     | 0.42              |
| 8:CB:544:C:H2'    | 8:CB:545:U:C5     | 2.52                     | 0.42              |
| 8:CB:672:C:H5'    | 8:CB:673:C:OP2    | 2.20                     | 0.42              |
| 8:CB:741:U:H2'    | 8:CB:742:A:C8     | 2.53                     | 0.42              |
| 8:CB:785:G:C6     | 8:CB:786:C:C4     | 3.08                     | 0.42              |
| 8:CB:1108:U:C2'   | 8:CB:1109:C:H5'   | 2.49                     | 0.42              |
| 8:CB:1429:G:C8    | 8:CB:1429:G:C5'   | 3.00                     | 0.42              |
| 8:CB:1524:G:N2    | 8:CB:1525:A:H1'   | 2.34                     | 0.42              |
| 8:CB:1559:U:C5'   | 8:CB:1559:U:H6    | 2.33                     | 0.42              |
| 8:CB:1701:A:C2'   | 8:CB:1702:G:H5'   | 2.46                     | 0.42              |
| 8:CB:1710:G:H1    | 8:CB:1748:C:H42   | 1.68                     | 0.42              |
| 8:CB:1755:A:C2    | 8:CB:1758:U:C6    | 3.08                     | 0.42              |
| 8:CB:1786:A:N1    | 8:CB:1938:A:C4    | 2.88                     | 0.42              |
| 8:CB:1844:C:OP1   | 9:CC:252:LYS:HA   | 2.19                     | 0.42              |
| 8:CB:1862:G:C2    | 8:CB:1881:C:C4    | 3.08                     | 0.42              |
| 8:CB:1977:A:N6    | 8:CB:1978:A:N1    | 2.67                     | 0.42              |
| 8:CB:1985:C:C2    | 8:CB:1986:C:C6    | 3.07                     | 0.42              |
| 8:CB:2079:U:N3    | 8:CB:2080:A:C8    | 2.88                     | 0.42              |
| 8:CB:2151:U:O2'   | 8:CB:2152:G:H5'   | 2.19                     | 0.42              |
| 8:CB:2391:G:N2    | 8:CB:2424:C:C6    | 2.87                     | 0.42              |
| 8:CB:2400:G:C6    | 8:CB:2401:U:C4    | 3.07                     | 0.42              |
| 8:CB:2447:G:C4    | 8:CB:2501:C:C4    | 3.07                     | 0.42              |
| 8:CB:2691:C:O2'   | 8:CB:2692:G:H5'   | 2.19                     | 0.42              |
| 8:CB:2751:G:C5'   | 13:CG:3:VAL:HG11  | 2.43                     | 0.42              |
| 8:CB:2807:U:H1'   | 8:CB:2892:G:H22   | 1.77                     | 0.42              |
| 8:CB:2902:C:H6    | 8:CB:2902:C:O5'   | 2.02                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:CC:70:LYS:O     | 9:CC:71:ASP:OD1   | 2.37                     | 0.42              |
| 9:CC:136:VAL:O    | 9:CC:165:ALA:HA   | 2.19                     | 0.42              |
| 10:CD:101:PHE:C   | 10:CD:105:LYS:HD2 | 2.38                     | 0.42              |
| 10:CD:142:VAL:HA  | 10:CD:143:PRO:HD3 | 1.43                     | 0.42              |
| 11:CE:6:LYS:HB2   | 11:CE:11:ALA:C    | 2.38                     | 0.42              |
| 11:CE:122:GLU:HB3 | 11:CE:123:LYS:H   | 1.52                     | 0.42              |
| 12:CF:33:ILE:HG12 | 12:CF:90:LEU:O    | 2.20                     | 0.42              |
| 14:CH:83:LYS:H    | 14:CH:90:LEU:CD1  | 2.33                     | 0.42              |
| 16:CJ:81:ILE:O    | 16:CJ:83:GLY:N    | 2.53                     | 0.42              |
| 16:CJ:81:ILE:CG1  | 16:CJ:83:GLY:H    | 2.32                     | 0.42              |
| 16:CJ:135:GLN:OE1 | 16:CJ:137:PRO:HB2 | 2.20                     | 0.42              |
| 18:CL:34:GLY:H    | 24:CR:85:LYS:HD3  | 1.83                     | 0.42              |
| 20:CN:34:ILE:HD13 | 20:CN:34:ILE:N    | 2.34                     | 0.42              |
| 20:CN:92:GLY:O    | 20:CN:93:GLY:C    | 2.56                     | 0.42              |
| 20:CN:97:ILE:C    | 20:CN:98:LEU:HD23 | 2.40                     | 0.42              |
| 22:CP:18:SER:CA   | 22:CP:87:ARG:NH2  | 2.82                     | 0.42              |
| 22:CP:31:VAL:O    | 22:CP:33:GLU:N    | 2.53                     | 0.42              |
| 23:CQ:79:ILE:CA   | 23:CQ:82:LEU:HD12 | 2.32                     | 0.42              |
| 24:CR:12:HIS:C    | 24:CR:13:ARG:HG3  | 2.40                     | 0.42              |
| 24:CR:38:VAL:C    | 24:CR:40:MET:N    | 2.71                     | 0.42              |
| 26:CT:41:ALA:O    | 26:CT:43:ILE:N    | 2.53                     | 0.42              |
| 26:CT:70:HIS:HB3  | 26:CT:74:ILE:HG13 | 2.00                     | 0.42              |
| 30:CX:3:ALA:CA    | 30:CX:6:LEU:HD21  | 2.50                     | 0.42              |
| 32:CZ:21:VAL:O    | 32:CZ:22:MET:CB   | 2.66                     | 0.42              |
| 33:DA:18:C:H2'    | 33:DA:19:A:O5'    | 2.20                     | 0.42              |
| 33:DA:27:G:C6     | 33:DA:28:A:N6     | 2.87                     | 0.42              |
| 33:DA:136:C:O2'   | 33:DA:137:U:H5'   | 2.18                     | 0.42              |
| 33:DA:164:G:H2'   | 33:DA:165:G:H5'   | 2.01                     | 0.42              |
| 33:DA:244:U:H6    | 33:DA:244:U:H5''  | 1.83                     | 0.42              |
| 33:DA:335:C:C5    | 33:DA:336:A:N7    | 2.87                     | 0.42              |
| 33:DA:344:A:H3'   | 33:DA:345:C:H5''  | 2.01                     | 0.42              |
| 33:DA:406:G:H21   | 36:DD:115:GLN:NE2 | 2.18                     | 0.42              |
| 33:DA:409:U:O2    | 33:DA:433:G:O6    | 2.38                     | 0.42              |
| 33:DA:444:G:C6    | 33:DA:491:G:N1    | 2.87                     | 0.42              |
| 33:DA:484:G:C4'   | 33:DA:485:U:O5'   | 2.67                     | 0.42              |
| 33:DA:536:C:H6    | 33:DA:536:C:C5'   | 2.32                     | 0.42              |
| 33:DA:548:G:C8    | 33:DA:548:G:C5'   | 3.01                     | 0.42              |
| 33:DA:573:A:C2    | 33:DA:574:A:C5    | 3.08                     | 0.42              |
| 33:DA:618:C:H3'   | 33:DA:619:U:C5'   | 2.49                     | 0.42              |
| 33:DA:731:G:N2    | 33:DA:732:C:O2    | 2.52                     | 0.42              |
| 33:DA:838:G:C6    | 33:DA:849:G:C6    | 3.08                     | 0.42              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:DA:914:A:O2'  | 33:DA:915:A:H8     | 2.02                     | 0.42              |
| 33:DA:929:G:O6   | 33:DA:930:C:N4     | 2.52                     | 0.42              |
| 33:DA:978:A:N6   | 33:DA:1318:A:C6    | 2.87                     | 0.42              |
| 33:DA:1049:U:C1' | 33:DA:1201:A:C8    | 3.02                     | 0.42              |
| 33:DA:1053:G:O2' | 33:DA:1199:U:H5    | 2.02                     | 0.42              |
| 33:DA:1083:U:C5  | 33:DA:1084:G:C4    | 3.08                     | 0.42              |
| 33:DA:1132:C:N4  | 33:DA:1142:G:H1    | 2.17                     | 0.42              |
| 33:DA:1289:A:H2  | 33:DA:1371:G:H21   | 1.67                     | 0.42              |
| 33:DA:1319:A:C2  | 33:DA:1323:G:C1'   | 3.03                     | 0.42              |
| 33:DA:1320:C:O2' | 33:DA:1321:U:H5'   | 2.19                     | 0.42              |
| 33:DA:1464:U:H3' | 33:DA:1464:U:C6    | 2.55                     | 0.42              |
| 33:DA:1486:G:H2' | 33:DA:1487:G:O4'   | 2.19                     | 0.42              |
| 33:DA:1527:U:C4  | 33:DA:1528:U:C4    | 3.07                     | 0.42              |
| 34:DB:68:PHE:CD1 | 34:DB:68:PHE:N     | 2.87                     | 0.42              |
| 34:DB:132:GLU:O  | 34:DB:136:ARG:HD3  | 2.20                     | 0.42              |
| 35:DC:6:PRO:O    | 35:DC:7:ASN:HB2    | 2.19                     | 0.42              |
| 35:DC:85:LYS:HA  | 35:DC:88:LYS:HB2   | 2.01                     | 0.42              |
| 36:DD:2:ARG:CZ   | 36:DD:2:ARG:HA     | 2.49                     | 0.42              |
| 36:DD:114:ARG:O  | 36:DD:115:GLN:O    | 2.38                     | 0.42              |
| 37:DE:95:MET:O   | 37:DE:96:GLN:CB    | 2.67                     | 0.42              |
| 39:DG:100:MET:O  | 39:DG:103:ILE:HG13 | 2.20                     | 0.42              |
| 40:DH:5:PRO:HG2  | 40:DH:6:ILE:HD12   | 2.01                     | 0.42              |
| 44:DL:98:ARG:HD3 | 44:DL:98:ARG:HA    | 1.64                     | 0.42              |
| 50:DR:50:TYR:O   | 50:DR:54:LEU:HB2   | 2.20                     | 0.42              |
| 52:DT:53:MET:HA  | 52:DT:56:ILE:CG1   | 2.49                     | 0.42              |
| 1:A0:1:ALA:N     | 8:AB:2056:G:H21    | 2.18                     | 0.42              |
| 2:A1:8:ILE:O     | 2:A1:24:LYS:HB2    | 2.19                     | 0.42              |
| 3:A2:13:ASN:HD22 | 3:A2:14:ARG:CA     | 2.31                     | 0.42              |
| 3:A2:32:ALA:O    | 3:A2:36:ALA:HB3    | 2.19                     | 0.42              |
| 4:A3:29:ARG:N    | 4:A3:29:ARG:CD     | 2.66                     | 0.42              |
| 4:A3:29:ARG:NH2  | 4:A3:31:ILE:HD13   | 2.33                     | 0.42              |
| 7:AA:46:A:H3'    | 7:AA:47:C:C5       | 2.54                     | 0.42              |
| 8:AB:137:U:H1'   | 26:AT:4:GLU:CD     | 2.40                     | 0.42              |
| 8:AB:140:C:H5'   | 8:AB:141:G:C2      | 2.55                     | 0.42              |
| 8:AB:371:A:N6    | 8:AB:401:A:H3'     | 2.31                     | 0.42              |
| 8:AB:372:G:C8    | 32:AZ:54:GLY:CA    | 3.03                     | 0.42              |
| 8:AB:443:A:H2    | 8:AB:1245:G:N3     | 2.17                     | 0.42              |
| 8:AB:496:G:H2'   | 8:AB:497:A:O4'     | 2.19                     | 0.42              |
| 8:AB:521:U:H2'   | 8:AB:522:A:C8      | 2.54                     | 0.42              |
| 8:AB:632:A:H2'   | 8:AB:633:A:C8      | 2.55                     | 0.42              |
| 8:AB:682:G:C2'   | 8:AB:683:U:H5'     | 2.49                     | 0.42              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 8:AB:687:C:N3     | 8:AB:688:U:O2    | 2.52                     | 0.42              |
| 8:AB:743:A:C6     | 8:AB:744:U:C5    | 3.08                     | 0.42              |
| 8:AB:978:G:N2     | 8:AB:986:C:C1'   | 2.83                     | 0.42              |
| 8:AB:1021:A:H1'   | 8:AB:1123:C:OP1  | 2.20                     | 0.42              |
| 8:AB:1040:A:C2    | 8:AB:1116:G:N2   | 2.88                     | 0.42              |
| 8:AB:1158:C:C2'   | 8:AB:1159:U:H5'  | 2.50                     | 0.42              |
| 8:AB:1169:A:C2    | 8:AB:1181:U:O2   | 2.72                     | 0.42              |
| 8:AB:1178:C:C2    | 8:AB:1179:G:N7   | 2.87                     | 0.42              |
| 8:AB:1184:U:OP1   | 31:AY:29:ARG:HD3 | 2.20                     | 0.42              |
| 8:AB:1217:U:O2    | 8:AB:1217:U:C2'  | 2.68                     | 0.42              |
| 8:AB:1257:C:O2    | 8:AB:1257:C:C2'  | 2.67                     | 0.42              |
| 8:AB:1297:C:N3    | 8:AB:1643:G:O6   | 2.52                     | 0.42              |
| 8:AB:1317:G:C2    | 8:AB:1318:U:C2   | 3.08                     | 0.42              |
| 8:AB:1525:A:C5    | 8:AB:1526:C:C5   | 3.08                     | 0.42              |
| 8:AB:1664:A:H8    | 8:AB:1664:A:O5'  | 2.03                     | 0.42              |
| 8:AB:1679:A:C5    | 8:AB:1680:U:C5   | 3.08                     | 0.42              |
| 8:AB:1727:C:C4    | 8:AB:1728:C:N4   | 2.88                     | 0.42              |
| 8:AB:1796:U:N3    | 8:AB:1797:G:C8   | 2.88                     | 0.42              |
| 8:AB:1866:A:C6    | 8:AB:1876:A:N7   | 2.88                     | 0.42              |
| 8:AB:1998:A:C5    | 8:AB:1999:C:C5   | 3.08                     | 0.42              |
| 8:AB:2048:G:C8    | 8:AB:2048:G:O5'  | 2.72                     | 0.42              |
| 8:AB:2048:G:C2    | 8:AB:2621:G:N2   | 2.88                     | 0.42              |
| 8:AB:2221:G:C2'   | 8:AB:2222:C:H5'  | 2.50                     | 0.42              |
| 8:AB:2262:U:O2'   | 8:AB:2263:C:H5'  | 2.20                     | 0.42              |
| 8:AB:2281:A:O4'   | 8:AB:2388:A:C2   | 2.72                     | 0.42              |
| 8:AB:2439:A:C8    | 8:AB:2586:U:O3'  | 2.72                     | 0.42              |
| 8:AB:2460:U:O5'   | 8:AB:2460:U:H6   | 2.02                     | 0.42              |
| 8:AB:2658:C:O2'   | 8:AB:2659:G:H5'  | 2.19                     | 0.42              |
| 8:AB:2684:U:H3'   | 8:AB:2684:U:C6   | 2.54                     | 0.42              |
| 8:AB:2742:G:N1    | 8:AB:2763:G:N2   | 2.67                     | 0.42              |
| 8:AB:2849:U:O4    | 8:AB:2867:G:N7   | 2.52                     | 0.42              |
| 9:AC:62:ARG:O     | 9:AC:63:ILE:HG12 | 2.20                     | 0.42              |
| 9:AC:229:HIS:CD2  | 9:AC:230:PRO:HD3 | 2.54                     | 0.42              |
| 10:AD:62:LYS:N    | 10:AD:63:PRO:CD  | 2.83                     | 0.42              |
| 11:AE:3:LEU:O     | 11:AE:4:VAL:HG12 | 2.20                     | 0.42              |
| 13:AG:29:ASN:HB2  | 13:AG:78:VAL:HA  | 2.01                     | 0.42              |
| 13:AG:89:VAL:HG21 | 13:AG:158:GLY:O  | 2.20                     | 0.42              |
| 16:AJ:39:LYS:HG2  | 16:AJ:40:HIS:N   | 2.35                     | 0.42              |
| 16:AJ:114:LEU:C   | 16:AJ:116:ARG:H  | 2.23                     | 0.42              |
| 20:AN:52:ILE:C    | 20:AN:54:LEU:H   | 2.23                     | 0.42              |
| 21:AO:10:ARG:NE   | 21:AO:97:PHE:CE1 | 2.87                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:AO:77:ALA:HB1  | 21:AO:81:ARG:CD   | 2.46                     | 0.42              |
| 22:AP:23:ASP:N    | 22:AP:93:LYS:HE2  | 2.34                     | 0.42              |
| 22:AP:26:GLU:O    | 22:AP:46:VAL:HG13 | 2.19                     | 0.42              |
| 22:AP:31:VAL:CG2  | 22:AP:81:ASP:HB2  | 2.39                     | 0.42              |
| 23:AQ:49:ARG:C    | 23:AQ:51:GLN:H    | 2.23                     | 0.42              |
| 24:AR:78:ARG:NE   | 24:AR:88:GLY:HA2  | 2.17                     | 0.42              |
| 27:AU:40:LEU:H    | 27:AU:42:LYS:CE   | 2.32                     | 0.42              |
| 27:AU:82:VAL:HB   | 27:AU:94:PHE:CG   | 2.54                     | 0.42              |
| 29:AW:75:ASN:O    | 29:AW:76:ARG:CB   | 2.66                     | 0.42              |
| 31:AY:54:VAL:CG1  | 31:AY:55:LYS:N    | 2.81                     | 0.42              |
| 33:BA:57:G:C6     | 33:BA:356:A:N6    | 2.88                     | 0.42              |
| 33:BA:119:A:C5    | 33:BA:240:G:C5    | 3.08                     | 0.42              |
| 33:BA:198:G:H8    | 33:BA:198:G:P     | 2.43                     | 0.42              |
| 33:BA:251:G:N2    | 33:BA:266:G:O6    | 2.51                     | 0.42              |
| 33:BA:475:C:H2'   | 33:BA:476:U:C6    | 2.54                     | 0.42              |
| 33:BA:556:C:H2'   | 33:BA:557:G:H5'   | 2.02                     | 0.42              |
| 33:BA:649:A:C4    | 33:BA:650:G:C8    | 3.08                     | 0.42              |
| 33:BA:673:A:N1    | 33:BA:734:G:N1    | 2.67                     | 0.42              |
| 33:BA:711:G:H2'   | 33:BA:711:G:N3    | 2.35                     | 0.42              |
| 33:BA:714:G:N1    | 33:BA:715:A:C2    | 2.87                     | 0.42              |
| 33:BA:718:A:C6    | 43:BK:117:HIS:NE2 | 2.88                     | 0.42              |
| 33:BA:792:A:N1    | 33:BA:794:A:C2    | 2.88                     | 0.42              |
| 33:BA:830:G:C2    | 33:BA:857:C:C2    | 3.08                     | 0.42              |
| 33:BA:907:A:C8    | 33:BA:907:A:C5'   | 3.01                     | 0.42              |
| 33:BA:918:A:C6    | 33:BA:919:A:C4    | 3.07                     | 0.42              |
| 33:BA:918:A:N6    | 33:BA:919:A:C6    | 2.87                     | 0.42              |
| 33:BA:922:G:N2    | 33:BA:1396:A:N3   | 2.68                     | 0.42              |
| 33:BA:978:A:H2'   | 33:BA:979:C:C5    | 2.51                     | 0.42              |
| 33:BA:1054:C:H3'  | 33:BA:1054:C:C6   | 2.53                     | 0.42              |
| 33:BA:1068:G:C2   | 33:BA:1069:C:C2   | 3.08                     | 0.42              |
| 33:BA:1077:G:O6   | 33:BA:1081:A:N6   | 2.50                     | 0.42              |
| 33:BA:1198:G:H22  | 42:BJ:55:PRO:HD2  | 1.81                     | 0.42              |
| 33:BA:1266:G:N2   | 33:BA:1270:G:C4   | 2.88                     | 0.42              |
| 33:BA:1270:G:C2   | 33:BA:1271:A:C5   | 3.08                     | 0.42              |
| 33:BA:1346:A:N1   | 33:BA:1374:A:H5'' | 2.34                     | 0.42              |
| 33:BA:1410:A:N3   | 33:BA:1491:G:N2   | 2.68                     | 0.42              |
| 33:BA:1456:A:C4   | 33:BA:1457:G:C8   | 3.07                     | 0.42              |
| 34:BB:88:GLN:C    | 34:BB:89:PHE:CG   | 2.93                     | 0.42              |
| 35:BC:63:ILE:HG13 | 35:BC:97:PRO:O    | 2.19                     | 0.42              |
| 36:BD:89:LEU:HG   | 36:BD:93:LEU:HD21 | 2.02                     | 0.42              |
| 36:BD:121:ALA:O   | 36:BD:122:ILE:CG1 | 2.66                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BD:195:ASN:N   | 36:BD:195:ASN:HD22 | 2.16                     | 0.42              |
| 38:BF:17:GLN:HG2  | 38:BF:21:MET:HG3   | 2.02                     | 0.42              |
| 39:BG:114:SER:OG  | 39:BG:117:LEU:HB2  | 2.20                     | 0.42              |
| 41:BI:44:ARG:CZ   | 41:BI:45:MET:HG3   | 2.50                     | 0.42              |
| 41:BI:85:ALA:O    | 41:BI:88:GLU:HG3   | 2.20                     | 0.42              |
| 42:BJ:93:ALA:C    | 42:BJ:95:GLY:H     | 2.23                     | 0.42              |
| 43:BK:43:TRP:HE3  | 43:BK:44:ALA:CA    | 2.33                     | 0.42              |
| 44:BL:56:LEU:HB2  | 44:BL:58:ASN:OD1   | 2.19                     | 0.42              |
| 44:BL:64:SER:HB3  | 44:BL:96:THR:HG22  | 2.00                     | 0.42              |
| 47:BO:50:HIS:ND1  | 47:BO:50:HIS:N     | 2.66                     | 0.42              |
| 48:BP:20:VAL:HG13 | 48:BP:22:ALA:N     | 2.35                     | 0.42              |
| 48:BP:71:VAL:HG22 | 48:BP:71:VAL:O     | 2.19                     | 0.42              |
| 49:BQ:45:VAL:HG13 | 49:BQ:72:TRP:O     | 2.20                     | 0.42              |
| 50:BR:41:SER:CB   | 50:BR:51:GLN:HG2   | 2.50                     | 0.42              |
| 4:C3:11:LYS:NZ    | 18:CL:59:ARG:O     | 2.44                     | 0.42              |
| 5:C4:19:ARG:HG2   | 8:CB:2756:U:OP2    | 2.20                     | 0.42              |
| 7:CA:106:G:C6     | 7:CA:107:G:C6      | 3.07                     | 0.42              |
| 8:CB:111:A:H2'    | 8:CB:112:U:O4'     | 2.20                     | 0.42              |
| 8:CB:118:A:C8     | 8:CB:119:A:C8      | 3.08                     | 0.42              |
| 8:CB:197:A:C6     | 8:CB:2430:A:C2     | 3.08                     | 0.42              |
| 8:CB:262:A:C2'    | 8:CB:263:G:O5'     | 2.64                     | 0.42              |
| 8:CB:279:A:C6     | 8:CB:362:A:O4'     | 2.73                     | 0.42              |
| 8:CB:416:U:C4     | 8:CB:417:C:C4      | 3.08                     | 0.42              |
| 8:CB:462:C:C6     | 8:CB:462:C:C3'     | 3.02                     | 0.42              |
| 8:CB:464:U:H1'    | 8:CB:686:U:C5      | 2.55                     | 0.42              |
| 8:CB:532:A:H5''   | 23:CQ:27:ARG:NH2   | 2.35                     | 0.42              |
| 8:CB:568:U:H1'    | 8:CB:570:G:C8      | 2.55                     | 0.42              |
| 8:CB:656:G:H2'    | 8:CB:657:U:H6      | 1.85                     | 0.42              |
| 8:CB:688:U:O2'    | 8:CB:786:C:O2'     | 2.32                     | 0.42              |
| 8:CB:700:G:N2     | 8:CB:733:G:H1'     | 2.34                     | 0.42              |
| 8:CB:763:G:H3'    | 8:CB:763:G:H8      | 1.81                     | 0.42              |
| 8:CB:771:G:H2'    | 8:CB:771:G:N3      | 2.35                     | 0.42              |
| 8:CB:1075:C:N3    | 8:CB:1076:C:C5     | 2.87                     | 0.42              |
| 8:CB:1178:C:C2    | 8:CB:1179:G:N7     | 2.88                     | 0.42              |
| 8:CB:1424:G:H2'   | 8:CB:1425:G:C5'    | 2.50                     | 0.42              |
| 8:CB:1466:U:H3'   | 8:CB:1466:U:H6     | 1.85                     | 0.42              |
| 8:CB:1549:A:C6    | 8:CB:1550:C:C4     | 3.08                     | 0.42              |
| 8:CB:1575:C:H2'   | 8:CB:1576:U:H6     | 1.81                     | 0.42              |
| 8:CB:1613:G:H3'   | 8:CB:1614:A:C5'    | 2.50                     | 0.42              |
| 8:CB:1905:C:H2'   | 8:CB:1930:G:O4'    | 2.19                     | 0.42              |
| 8:CB:1915:U:C5    | 8:CB:1916:A:N7     | 2.88                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2070:A:H2'    | 8:CB:2071:A:O4'    | 2.20                     | 0.42              |
| 8:CB:2231:U:H2'    | 8:CB:2232:C:O4'    | 2.20                     | 0.42              |
| 8:CB:2334:U:O4'    | 21:CO:11:ALA:CB    | 2.55                     | 0.42              |
| 8:CB:2357:G:H1'    | 8:CB:2361:G:N2     | 2.34                     | 0.42              |
| 8:CB:2459:A:N6     | 8:CB:2494:G:C4     | 2.87                     | 0.42              |
| 8:CB:2497:A:H5''   | 55:CB:5432:HOH:O   | 2.18                     | 0.42              |
| 8:CB:2512:C:H2'    | 8:CB:2513:A:C4'    | 2.48                     | 0.42              |
| 8:CB:2589:A:H2     | 8:CB:2590:A:C5     | 2.34                     | 0.42              |
| 8:CB:2734:A:C2     | 10:CD:209:ALA:OXT  | 2.67                     | 0.42              |
| 8:CB:2854:G:C2     | 8:CB:2864:G:C2     | 3.08                     | 0.42              |
| 8:CB:2892:G:C8     | 8:CB:2892:G:C3'    | 3.02                     | 0.42              |
| 9:CC:177:SER:O     | 9:CC:179:GLU:OE1   | 2.37                     | 0.42              |
| 9:CC:229:HIS:CG    | 9:CC:230:PRO:HD2   | 2.53                     | 0.42              |
| 9:CC:254:LYS:N     | 9:CC:254:LYS:CE    | 2.82                     | 0.42              |
| 10:CD:103:ASP:OD2  | 10:CD:104:VAL:HG23 | 2.20                     | 0.42              |
| 11:CE:5:LEU:O      | 11:CE:6:LYS:HG3    | 2.20                     | 0.42              |
| 11:CE:74:LYS:O     | 11:CE:75:SER:C     | 2.57                     | 0.42              |
| 11:CE:108:ILE:HG13 | 11:CE:109:LEU:H    | 1.85                     | 0.42              |
| 11:CE:109:LEU:HD22 | 11:CE:113:VAL:C    | 2.40                     | 0.42              |
| 13:CG:70:LEU:O     | 13:CG:73:SER:N     | 2.51                     | 0.42              |
| 13:CG:88:LEU:HD23  | 13:CG:106:LEU:HD21 | 2.02                     | 0.42              |
| 13:CG:152:ARG:H    | 13:CG:152:ARG:HG3  | 1.60                     | 0.42              |
| 16:CJ:100:VAL:O    | 16:CJ:101:ILE:CB   | 2.62                     | 0.42              |
| 17:CK:100:PHE:CD2  | 17:CK:100:PHE:N    | 2.87                     | 0.42              |
| 18:CL:99:ASN:HD22  | 18:CL:99:ASN:HA    | 1.64                     | 0.42              |
| 18:CL:111:ILE:HD13 | 18:CL:111:ILE:C    | 2.40                     | 0.42              |
| 19:CM:5:LYS:HB2    | 19:CM:69:PRO:HB2   | 2.01                     | 0.42              |
| 20:CN:22:ARG:HD3   | 20:CN:71:ARG:HB2   | 2.02                     | 0.42              |
| 21:CO:87:ILE:HG12  | 21:CO:88:LYS:N     | 2.29                     | 0.42              |
| 22:CP:32:VAL:O     | 22:CP:34:GLY:N     | 2.52                     | 0.42              |
| 22:CP:95:LYS:O     | 22:CP:96:LEU:O     | 2.38                     | 0.42              |
| 23:CQ:40:LYS:CG    | 23:CQ:44:TYR:HB2   | 2.50                     | 0.42              |
| 25:CS:17:VAL:HG12  | 25:CS:43:ALA:CB    | 2.48                     | 0.42              |
| 26:CT:23:ALA:HB1   | 26:CT:29:THR:O     | 2.19                     | 0.42              |
| 31:CY:37:ARG:HB3   | 31:CY:38:GLU:H     | 1.73                     | 0.42              |
| 33:DA:74:A:C6      | 33:DA:75:G:C5      | 3.07                     | 0.42              |
| 33:DA:109:A:N7     | 33:DA:326:G:N3     | 2.67                     | 0.42              |
| 33:DA:110:C:H2'    | 33:DA:111:G:O4'    | 2.20                     | 0.42              |
| 33:DA:525:C:C2     | 33:DA:526:C:C6     | 3.07                     | 0.42              |
| 33:DA:547:A:N3     | 33:DA:548:G:H1'    | 2.34                     | 0.42              |
| 33:DA:620:C:H2'    | 33:DA:621:A:O4'    | 2.18                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:670:G:C2    | 33:DA:671:G:C8     | 3.07                     | 0.42              |
| 33:DA:674:G:O4'   | 50:DR:69:TYR:CE1   | 2.73                     | 0.42              |
| 33:DA:688:G:H21   | 33:DA:704:A:H2     | 1.67                     | 0.42              |
| 33:DA:702:A:C3'   | 33:DA:703:G:H5'    | 2.49                     | 0.42              |
| 33:DA:764:C:C3'   | 33:DA:765:G:H5'    | 2.48                     | 0.42              |
| 33:DA:824:G:C2    | 33:DA:825:A:C8     | 3.08                     | 0.42              |
| 33:DA:833:G:H2'   | 33:DA:834:U:O4'    | 2.19                     | 0.42              |
| 33:DA:845:A:H5'   | 33:DA:846:G:C8     | 2.45                     | 0.42              |
| 33:DA:919:A:O2'   | 33:DA:1080:A:N6    | 2.53                     | 0.42              |
| 33:DA:948:C:OP1   | 45:DM:107:THR:CG2  | 2.62                     | 0.42              |
| 33:DA:960:U:O2'   | 33:DA:1223:C:H4'   | 2.19                     | 0.42              |
| 33:DA:975:A:N3    | 33:DA:1357:A:C2    | 2.79                     | 0.42              |
| 33:DA:1077:G:C2   | 33:DA:1081:A:C2    | 3.08                     | 0.42              |
| 33:DA:1114:C:H1'  | 46:DN:99:SER:HB2   | 2.00                     | 0.42              |
| 33:DA:1182:G:C4'  | 33:DA:1183:U:H5'   | 2.49                     | 0.42              |
| 33:DA:1197:A:H3'  | 33:DA:1197:A:P     | 2.60                     | 0.42              |
| 33:DA:1346:A:C2   | 33:DA:1374:A:H5''  | 2.55                     | 0.42              |
| 33:DA:1382:C:H5'  | 39:DG:78:ARG:NH2   | 2.35                     | 0.42              |
| 33:DA:1382:C:O2'  | 33:DA:1383:C:H5'   | 2.20                     | 0.42              |
| 33:DA:1521:C:C2'  | 33:DA:1522:U:O5'   | 2.67                     | 0.42              |
| 34:DB:67:LEU:HD11 | 34:DB:150:ILE:CD1  | 2.50                     | 0.42              |
| 34:DB:193:ASP:C   | 34:DB:195:VAL:H    | 2.23                     | 0.42              |
| 34:DB:209:VAL:CG2 | 34:DB:210:THR:H    | 2.24                     | 0.42              |
| 36:DD:76:LYS:HG2  | 36:DD:77:GLU:N     | 2.35                     | 0.42              |
| 36:DD:154:VAL:CG1 | 36:DD:158:LEU:HD11 | 2.46                     | 0.42              |
| 38:DF:48:ALA:HB2  | 50:DR:65:SER:O     | 2.19                     | 0.42              |
| 40:DH:46:GLU:O    | 40:DH:47:ASP:CB    | 2.66                     | 0.42              |
| 40:DH:62:LEU:O    | 40:DH:63:LYS:HB2   | 2.18                     | 0.42              |
| 41:DI:14:SER:HG   | 41:DI:69:GLY:HA3   | 1.85                     | 0.42              |
| 43:DK:46:ALA:C    | 43:DK:48:GLY:N     | 2.72                     | 0.42              |
| 46:DN:40:ARG:HH12 | 51:DS:6:LYS:H      | 1.66                     | 0.42              |
| 48:DP:70:ARG:O    | 48:DP:71:VAL:C     | 2.58                     | 0.42              |
| 49:DQ:45:VAL:HG22 | 49:DQ:72:TRP:O     | 2.20                     | 0.42              |
| 5:A4:23:ILE:HG12  | 5:A4:37:GLN:HB3    | 2.01                     | 0.42              |
| 6:A5:154:ILE:HG23 | 6:A5:155:ARG:H     | 1.84                     | 0.42              |
| 7:AA:40:U:C5      | 7:AA:43:C:OP1      | 2.73                     | 0.42              |
| 8:AB:144:A:C8     | 8:AB:144:A:OP2     | 2.73                     | 0.42              |
| 8:AB:184:C:H42    | 8:AB:212:G:H1      | 1.68                     | 0.42              |
| 8:AB:197:A:C6     | 8:AB:198:C:C2      | 3.07                     | 0.42              |
| 8:AB:217:A:H2'    | 8:AB:218:A:O4'     | 2.19                     | 0.42              |
| 8:AB:478:A:N6     | 8:AB:480:A:C6      | 2.87                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:699:A:C4'     | 8:AB:1634:A:N7    | 2.82                     | 0.42              |
| 8:AB:738:G:C5      | 8:AB:739:A:C6     | 3.07                     | 0.42              |
| 8:AB:980:A:H62     | 8:AB:1136:G:H5''  | 1.85                     | 0.42              |
| 8:AB:1027:A:N6     | 8:AB:1126:A:N3    | 2.68                     | 0.42              |
| 8:AB:1264:A:H2'    | 8:AB:2015:A:N6    | 2.34                     | 0.42              |
| 8:AB:1268:A:C5     | 8:AB:1269:A:C4    | 3.07                     | 0.42              |
| 8:AB:1275:A:N7     | 20:AN:16:HIS:CG   | 2.87                     | 0.42              |
| 8:AB:1351:C:O2     | 8:AB:1352:U:C2    | 2.73                     | 0.42              |
| 8:AB:1442:U:C4     | 8:AB:1443:U:N3    | 2.88                     | 0.42              |
| 8:AB:1558:C:H4'    | 8:AB:1559:U:H5'   | 2.02                     | 0.42              |
| 8:AB:1608:A:C5     | 8:AB:1611:C:C4    | 3.08                     | 0.42              |
| 8:AB:1609:A:N1     | 8:AB:1616:A:C5    | 2.87                     | 0.42              |
| 8:AB:1635:A:C6     | 8:AB:1636:U:C2    | 3.07                     | 0.42              |
| 8:AB:1662:U:N3     | 8:AB:1663:G:C5    | 2.88                     | 0.42              |
| 8:AB:1665:A:N6     | 55:AB:4510:HOH:O  | 2.51                     | 0.42              |
| 8:AB:1901:A:C4     | 8:AB:1902:C:C5    | 3.08                     | 0.42              |
| 8:AB:1970:A:C4     | 8:AB:1972:G:N7    | 2.88                     | 0.42              |
| 8:AB:2023:C:H4'    | 8:AB:2617:U:O3'   | 2.20                     | 0.42              |
| 8:AB:2094:A:C8     | 8:AB:2094:A:C3'   | 3.02                     | 0.42              |
| 8:AB:2280:G:N1     | 8:AB:2281:A:N7    | 2.67                     | 0.42              |
| 8:AB:2453:A:C2     | 8:AB:2504:U:C2    | 3.08                     | 0.42              |
| 8:AB:2461:A:H2'    | 8:AB:2462:C:C6    | 2.53                     | 0.42              |
| 8:AB:2520:C:H6     | 8:AB:2520:C:O5'   | 2.03                     | 0.42              |
| 8:AB:2618:G:N7     | 8:AB:2619:C:C5    | 2.88                     | 0.42              |
| 8:AB:2647:U:O2'    | 8:AB:2648:G:C8    | 2.73                     | 0.42              |
| 8:AB:2733:A:N1     | 10:AD:209:ALA:OXT | 2.53                     | 0.42              |
| 8:AB:2751:G:H21    | 13:AG:1:SER:CA    | 2.32                     | 0.42              |
| 8:AB:2760:C:C3'    | 8:AB:2761:A:C5'   | 2.98                     | 0.42              |
| 8:AB:2761:A:H3'    | 8:AB:2761:A:C8    | 2.54                     | 0.42              |
| 8:AB:2814:A:C6     | 8:AB:2815:C:C4    | 3.08                     | 0.42              |
| 8:AB:2823:A:O5'    | 8:AB:2823:A:H8    | 2.02                     | 0.42              |
| 10:AD:33:ARG:O     | 10:AD:34:VAL:C    | 2.58                     | 0.42              |
| 13:AG:6:ALA:H      | 13:AG:7:PRO:HD2   | 1.85                     | 0.42              |
| 13:AG:68:ARG:CG    | 13:AG:71:LEU:HD22 | 2.42                     | 0.42              |
| 13:AG:82:PHE:CZ    | 13:AG:137:LYS:HD2 | 2.55                     | 0.42              |
| 13:AG:132:LEU:HD21 | 13:AG:144:ALA:HB2 | 2.01                     | 0.42              |
| 14:AH:58:LEU:O     | 14:AH:62:LEU:HD12 | 2.18                     | 0.42              |
| 17:AK:120:PRO:O    | 17:AK:121:GLU:HG3 | 2.20                     | 0.42              |
| 18:AL:38:GLN:CD    | 18:AL:39:LYS:N    | 2.60                     | 0.42              |
| 18:AL:67:THR:O     | 18:AL:68:SER:HB3  | 2.20                     | 0.42              |
| 18:AL:71:ALA:O     | 18:AL:72:ALA:C    | 2.58                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 19:AM:61:GLY:CA   | 19:AM:105:MET:HB2 | 2.40                     | 0.42              |
| 21:AO:106:LEU:C   | 21:AO:106:LEU:CD1 | 2.88                     | 0.42              |
| 23:AQ:51:GLN:HG3  | 23:AQ:54:ARG:NE   | 2.30                     | 0.42              |
| 26:AT:58:VAL:HG13 | 26:AT:85:VAL:HG12 | 2.02                     | 0.42              |
| 27:AU:5:ARG:HG2   | 27:AU:6:ARG:HG2   | 2.02                     | 0.42              |
| 29:AW:42:THR:HB   | 29:AW:66:VAL:N    | 2.31                     | 0.42              |
| 31:AY:1:ALA:CA    | 31:AY:44:ARG:HD3  | 2.36                     | 0.42              |
| 32:AZ:50:ASP:HA   | 32:AZ:53:THR:CG2  | 2.43                     | 0.42              |
| 33:BA:21:G:C2     | 33:BA:22:G:C6     | 3.08                     | 0.42              |
| 33:BA:32:A:N1     | 33:BA:33:A:C6     | 2.88                     | 0.42              |
| 33:BA:50:A:N7     | 33:BA:361:G:H1'   | 2.35                     | 0.42              |
| 33:BA:72:A:O2'    | 33:BA:73:C:H5'    | 2.20                     | 0.42              |
| 33:BA:119:A:C5    | 33:BA:240:G:N7    | 2.87                     | 0.42              |
| 33:BA:505:G:C8    | 33:BA:535:A:C4    | 3.08                     | 0.42              |
| 33:BA:615:G:C4    | 33:BA:626:G:C6    | 3.07                     | 0.42              |
| 33:BA:770:C:H2'   | 33:BA:771:G:O5'   | 2.19                     | 0.42              |
| 33:BA:791:G:H22   | 33:BA:1497:G:H4'  | 1.84                     | 0.42              |
| 33:BA:938:A:N7    | 33:BA:939:G:N7    | 2.68                     | 0.42              |
| 33:BA:939:G:N2    | 33:BA:1344:C:N3   | 2.64                     | 0.42              |
| 33:BA:969:A:C8    | 33:BA:969:A:C3'   | 3.02                     | 0.42              |
| 33:BA:988:G:C6    | 33:BA:989:U:C4    | 3.08                     | 0.42              |
| 33:BA:1077:G:C4   | 33:BA:1079:G:OP2  | 2.73                     | 0.42              |
| 33:BA:1147:C:O2'  | 41:BI:17:ARG:HD2  | 2.20                     | 0.42              |
| 33:BA:1182:G:OP2  | 33:BA:1182:G:H2'  | 2.19                     | 0.42              |
| 33:BA:1518:A:H2   | 33:BA:1519:A:N1   | 2.16                     | 0.42              |
| 34:BB:19:THR:HG23 | 34:BB:20:ARG:N    | 2.30                     | 0.42              |
| 34:BB:203:ASP:OD1 | 34:BB:204:ASP:N   | 2.53                     | 0.42              |
| 35:BC:21:TRP:CZ3  | 35:BC:31:ASN:ND2  | 2.87                     | 0.42              |
| 35:BC:38:VAL:CG2  | 35:BC:39:ARG:N    | 2.81                     | 0.42              |
| 35:BC:86:LEU:HG   | 35:BC:86:LEU:H    | 1.64                     | 0.42              |
| 35:BC:135:ARG:HA  | 35:BC:138:GLN:HB3 | 2.01                     | 0.42              |
| 39:BG:31:VAL:HG22 | 39:BG:32:ASP:CG   | 2.40                     | 0.42              |
| 39:BG:142:ARG:O   | 39:BG:146:ALA:HB3 | 2.20                     | 0.42              |
| 44:BL:19:ASN:C    | 44:BL:20:VAL:HG23 | 2.40                     | 0.42              |
| 45:BM:109:LYS:HG3 | 45:BM:110:GLY:H   | 1.85                     | 0.42              |
| 46:BN:33:VAL:O    | 46:BN:33:VAL:HG12 | 2.18                     | 0.42              |
| 47:BO:42:PHE:CE1  | 47:BO:55:LEU:HD22 | 2.55                     | 0.42              |
| 51:BS:23:GLU:CG   | 51:BS:24:SER:N    | 2.83                     | 0.42              |
| 2:C1:10:LEU:HD22  | 2:C1:50:GLU:HG3   | 2.02                     | 0.42              |
| 3:C2:1:MET:HE1    | 3:C2:3:ARG:NH1    | 2.34                     | 0.42              |
| 3:C2:43:THR:C     | 3:C2:44:VAL:HG22  | 2.40                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 4:C3:12:ARG:NH2  | 18:CL:62:PRO:HB3 | 2.34                     | 0.42              |
| 4:C3:12:ARG:HH11 | 18:CL:62:PRO:HG3 | 1.73                     | 0.42              |
| 7:CA:44:G:C2     | 7:CA:48:U:O2     | 2.73                     | 0.42              |
| 8:CB:85:G:O5'    | 27:CU:28:LEU:HA  | 2.20                     | 0.42              |
| 8:CB:126:A:C4    | 8:CB:127:A:C2    | 3.08                     | 0.42              |
| 8:CB:197:A:H8    | 8:CB:2068:U:H3   | 1.68                     | 0.42              |
| 8:CB:217:A:H2'   | 8:CB:218:A:O4'   | 2.19                     | 0.42              |
| 8:CB:252:G:C4    | 8:CB:253:C:C5    | 3.08                     | 0.42              |
| 8:CB:265:A:C8    | 8:CB:266:G:H1'   | 2.55                     | 0.42              |
| 8:CB:280:U:C4    | 8:CB:281:C:N4    | 2.87                     | 0.42              |
| 8:CB:299:A:N3    | 8:CB:319:G:O2'   | 2.34                     | 0.42              |
| 8:CB:455:C:H6    | 8:CB:455:C:H2'   | 1.68                     | 0.42              |
| 8:CB:532:A:N3    | 8:CB:532:A:C2'   | 2.79                     | 0.42              |
| 8:CB:625:G:O2'   | 8:CB:626:A:H5'   | 2.20                     | 0.42              |
| 8:CB:644:A:C2    | 8:CB:646:U:C4    | 3.08                     | 0.42              |
| 8:CB:689:A:N3    | 8:CB:690:G:C8    | 2.88                     | 0.42              |
| 8:CB:836:G:C8    | 8:CB:837:C:C5    | 3.07                     | 0.42              |
| 8:CB:948:C:C1'   | 8:CB:984:A:N3    | 2.83                     | 0.42              |
| 8:CB:949:G:N1    | 8:CB:950:G:N7    | 2.68                     | 0.42              |
| 8:CB:1098:A:C8   | 8:CB:1099:G:C8   | 3.07                     | 0.42              |
| 8:CB:1179:G:C6   | 8:CB:1180:U:C4   | 3.08                     | 0.42              |
| 8:CB:1214:A:H2'  | 8:CB:1215:G:H8   | 1.84                     | 0.42              |
| 8:CB:1281:G:C8   | 8:CB:1281:G:C3'  | 3.03                     | 0.42              |
| 8:CB:1347:A:C4   | 8:CB:1348:C:C6   | 3.07                     | 0.42              |
| 8:CB:1354:A:O2'  | 8:CB:1355:G:H5'  | 2.20                     | 0.42              |
| 8:CB:1394:U:O5'  | 8:CB:1394:U:H6   | 2.03                     | 0.42              |
| 8:CB:1512:C:O5'  | 8:CB:1512:C:H6   | 2.02                     | 0.42              |
| 8:CB:1540:G:C8   | 8:CB:1540:G:H5'' | 2.54                     | 0.42              |
| 8:CB:1606:C:H3'  | 8:CB:1606:C:H6   | 1.83                     | 0.42              |
| 8:CB:1644:C:O2'  | 8:CB:1645:G:H5'  | 2.18                     | 0.42              |
| 8:CB:1729:U:H3'  | 8:CB:1730:C:C5'  | 2.50                     | 0.42              |
| 8:CB:1788:C:H2'  | 8:CB:1789:A:C5'  | 2.50                     | 0.42              |
| 8:CB:1813:G:C2'  | 8:CB:1814:G:C5'  | 2.87                     | 0.42              |
| 8:CB:1877:A:C8   | 8:CB:1877:A:H3'  | 2.55                     | 0.42              |
| 8:CB:1941:C:O2'  | 8:CB:1942:C:H5'  | 2.19                     | 0.42              |
| 8:CB:1982:U:H6   | 8:CB:1982:U:P    | 2.43                     | 0.42              |
| 8:CB:2027:G:C2   | 8:CB:2028:U:N1   | 2.88                     | 0.42              |
| 8:CB:2052:A:H4'  | 10:CD:147:GLY:O  | 2.20                     | 0.42              |
| 8:CB:2201:G:N1   | 8:CB:2202:U:O2   | 2.53                     | 0.42              |
| 8:CB:2329:U:O2'  | 8:CB:2330:G:H5'  | 2.20                     | 0.42              |
| 8:CB:2360:G:C4'  | 18:CL:58:TYR:CE1 | 3.03                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2431:U:H6     | 8:CB:2431:U:H3'    | 1.84                     | 0.42              |
| 8:CB:2454:G:C2     | 8:CB:2499:C:C4     | 3.07                     | 0.42              |
| 8:CB:2460:U:O5'    | 8:CB:2460:U:H6     | 2.01                     | 0.42              |
| 8:CB:2519:U:C4     | 8:CB:2541:A:C6     | 3.07                     | 0.42              |
| 8:CB:2532:G:C2     | 8:CB:2662:A:N1     | 2.88                     | 0.42              |
| 8:CB:2570:G:C6     | 8:CB:2571:U:C5     | 3.08                     | 0.42              |
| 8:CB:2574:G:N2     | 10:CD:147:GLY:CA   | 2.83                     | 0.42              |
| 8:CB:2655:G:C2     | 8:CB:2664:G:C6     | 3.07                     | 0.42              |
| 9:CC:140:VAL:HB    | 9:CC:141:HIS:H     | 1.48                     | 0.42              |
| 9:CC:144:GLU:HB2   | 9:CC:187:CYS:HB3   | 2.00                     | 0.42              |
| 9:CC:245:THR:O     | 9:CC:247:TRP:N     | 2.52                     | 0.42              |
| 10:CD:170:VAL:O    | 10:CD:171:THR:CB   | 2.66                     | 0.42              |
| 11:CE:12:LEU:O     | 11:CE:13:THR:O     | 2.38                     | 0.42              |
| 11:CE:50:ALA:HB1   | 11:CE:74:LYS:HE2   | 2.02                     | 0.42              |
| 11:CE:142:ALA:HB3  | 11:CE:185:LYS:HZ3  | 1.84                     | 0.42              |
| 11:CE:184:ASP:OD1  | 11:CE:185:LYS:N    | 2.53                     | 0.42              |
| 12:CF:16:MET:HG2   | 12:CF:27:VAL:HG23  | 2.01                     | 0.42              |
| 12:CF:107:VAL:N    | 12:CF:108:PRO:CD   | 2.83                     | 0.42              |
| 12:CF:153:ILE:HG22 | 12:CF:154:THR:N    | 2.34                     | 0.42              |
| 13:CG:121:THR:CG2  | 13:CG:122:ALA:H    | 2.33                     | 0.42              |
| 13:CG:127:GLN:O    | 13:CG:127:GLN:HG3  | 2.20                     | 0.42              |
| 16:CJ:24:THR:O     | 16:CJ:25:LEU:O     | 2.37                     | 0.42              |
| 16:CJ:44:TYR:O     | 16:CJ:45:THR:CB    | 2.67                     | 0.42              |
| 19:CM:73:ILE:N     | 19:CM:73:ILE:HD13  | 2.35                     | 0.42              |
| 20:CN:32:GLU:HB2   | 20:CN:115:LEU:HD21 | 2.02                     | 0.42              |
| 21:CO:18:LEU:HD22  | 29:CW:76:ARG:HD2   | 2.02                     | 0.42              |
| 21:CO:31:THR:O     | 21:CO:32:PRO:C     | 2.56                     | 0.42              |
| 25:CS:86:MET:HB3   | 25:CS:94:ASP:CB    | 2.50                     | 0.42              |
| 26:CT:90:GLY:O     | 26:CT:91:GLN:HG3   | 2.19                     | 0.42              |
| 30:CX:22:LEU:HD22  | 30:CX:25:GLN:NE2   | 2.34                     | 0.42              |
| 32:CZ:21:VAL:HG22  | 32:CZ:22:MET:N     | 2.34                     | 0.42              |
| 33:DA:44:A:OP1     | 48:DP:11:ALA:HB1   | 2.19                     | 0.42              |
| 33:DA:238:A:C4     | 33:DA:239:U:C6     | 3.07                     | 0.42              |
| 33:DA:303:A:C6     | 33:DA:304:U:C6     | 3.08                     | 0.42              |
| 33:DA:303:A:C2     | 33:DA:304:U:H1'    | 2.55                     | 0.42              |
| 33:DA:328:C:H4'    | 33:DA:329:A:O5'    | 2.20                     | 0.42              |
| 33:DA:407:U:C4'    | 36:DD:115:GLN:OE1  | 2.68                     | 0.42              |
| 33:DA:512:U:H3     | 33:DA:539:A:H2     | 1.68                     | 0.42              |
| 33:DA:583:A:C2     | 33:DA:759:A:C6     | 3.07                     | 0.42              |
| 33:DA:671:G:C4     | 33:DA:672:U:C6     | 3.07                     | 0.42              |
| 33:DA:734:G:H4'    | 50:DR:59:LYS:HZ2   | 1.84                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:909:A:H3'   | 33:DA:910:C:C6     | 2.54                     | 0.42              |
| 33:DA:924:C:H2'   | 33:DA:925:G:H8     | 1.85                     | 0.42              |
| 33:DA:936:C:N4    | 33:DA:1379:G:H1    | 2.18                     | 0.42              |
| 33:DA:1079:G:N1   | 33:DA:1080:A:N1    | 2.67                     | 0.42              |
| 33:DA:1196:A:C3'  | 33:DA:1197:A:H5''  | 2.49                     | 0.42              |
| 33:DA:1289:A:H3'  | 33:DA:1290:G:C8    | 2.55                     | 0.42              |
| 33:DA:1315:U:C6   | 33:DA:1316:G:C8    | 3.08                     | 0.42              |
| 33:DA:1324:A:H5'' | 33:DA:1325:C:OP2   | 2.20                     | 0.42              |
| 33:DA:1451:U:H5'  | 33:DA:1451:U:N1    | 2.34                     | 0.42              |
| 33:DA:1454:G:N2   | 33:DA:1455:G:C5    | 2.88                     | 0.42              |
| 33:DA:1479:C:N4   | 33:DA:1480:A:N6    | 2.63                     | 0.42              |
| 34:DB:80:LYS:HB2  | 34:DB:80:LYS:HE3   | 1.77                     | 0.42              |
| 34:DB:146:SER:C   | 34:DB:148:GLY:H    | 2.22                     | 0.42              |
| 35:DC:10:ARG:CG   | 35:DC:10:ARG:NH1   | 2.64                     | 0.42              |
| 35:DC:145:ALA:HA  | 35:DC:202:PHE:O    | 2.19                     | 0.42              |
| 37:DE:89:THR:C    | 37:DE:91:SER:N     | 2.70                     | 0.42              |
| 38:DF:42:TRP:CE3  | 38:DF:45:ARG:NH1   | 2.88                     | 0.42              |
| 39:DG:16:LYS:O    | 39:DG:43:TYR:OH    | 2.36                     | 0.42              |
| 39:DG:96:ASN:HD22 | 39:DG:96:ASN:H     | 1.67                     | 0.42              |
| 42:DJ:98:VAL:O    | 42:DJ:100:ILE:HG13 | 2.19                     | 0.42              |
| 43:DK:60:PHE:O    | 43:DK:63:GLN:HB2   | 2.19                     | 0.42              |
| 44:DL:9:LYS:HA    | 44:DL:10:PRO:HD3   | 1.73                     | 0.42              |
| 45:DM:1:ALA:O     | 45:DM:9:PRO:HD3    | 2.19                     | 0.42              |
| 46:DN:92:ILE:HG22 | 46:DN:95:LEU:HB2   | 2.01                     | 0.42              |
| 50:DR:44:THR:C    | 50:DR:46:THR:N     | 2.73                     | 0.42              |
| 52:DT:85:LEU:O    | 52:DT:86:ALA:HB2   | 2.20                     | 0.42              |
| 1:A0:9:ARG:O      | 1:A0:10:SER:C      | 2.58                     | 0.42              |
| 1:A0:19:ASP:HB3   | 1:A0:20:ALA:H      | 1.68                     | 0.42              |
| 5:A4:5:ALA:O      | 5:A4:7:VAL:HG22    | 2.20                     | 0.42              |
| 5:A4:24:ARG:HG2   | 5:A4:26:ILE:H      | 1.85                     | 0.42              |
| 7:AA:8:C:H5'      | 21:AO:27:VAL:HG11  | 2.00                     | 0.42              |
| 7:AA:42:C:N4      | 7:AA:43:C:N4       | 2.68                     | 0.42              |
| 7:AA:42:C:H4'     | 12:AF:63:LYS:CG    | 2.50                     | 0.42              |
| 8:AB:166:U:H2'    | 8:AB:167:A:H5'     | 2.01                     | 0.42              |
| 8:AB:283:G:C6     | 8:AB:284:U:C5      | 3.08                     | 0.42              |
| 8:AB:442:G:H21    | 11:AE:44:ARG:HB2   | 1.85                     | 0.42              |
| 8:AB:486:C:O4'    | 25:AS:60:HIS:NE2   | 2.52                     | 0.42              |
| 8:AB:598:U:H2'    | 8:AB:599:A:O4'     | 2.20                     | 0.42              |
| 8:AB:637:A:H4'    | 8:AB:638:G:H4'     | 2.02                     | 0.42              |
| 8:AB:644:A:H2     | 8:AB:646:U:C4      | 2.37                     | 0.42              |
| 8:AB:700:G:O2'    | 8:AB:1632:A:H1'    | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:727:A:H3'    | 8:AB:728:G:C8     | 2.55                     | 0.42              |
| 8:AB:838:C:C2     | 8:AB:941:A:N6     | 2.88                     | 0.42              |
| 8:AB:949:G:N1     | 8:AB:950:G:C5     | 2.88                     | 0.42              |
| 8:AB:988:A:H2     | 8:AB:989:G:H21    | 1.67                     | 0.42              |
| 8:AB:1198:U:O5'   | 8:AB:1198:U:H6    | 2.03                     | 0.42              |
| 8:AB:1218:G:N1    | 8:AB:1219:U:C2    | 2.88                     | 0.42              |
| 8:AB:1262:A:C6    | 8:AB:1263:U:C4    | 3.08                     | 0.42              |
| 8:AB:1275:A:N3    | 8:AB:1275:A:H5''  | 2.35                     | 0.42              |
| 8:AB:1408:G:C8    | 8:AB:1409:U:C5    | 3.08                     | 0.42              |
| 8:AB:1429:G:C8    | 8:AB:1429:G:C5'   | 2.98                     | 0.42              |
| 8:AB:1453:A:H8    | 8:AB:1453:A:C5'   | 2.27                     | 0.42              |
| 8:AB:1804:C:OP1   | 9:AC:254:LYS:CG   | 2.63                     | 0.42              |
| 8:AB:1915:U:C5    | 8:AB:1916:A:N7    | 2.88                     | 0.42              |
| 8:AB:1973:G:C8    | 8:AB:1973:G:C3'   | 3.02                     | 0.42              |
| 8:AB:1998:A:OP2   | 10:AD:141:ARG:NH2 | 2.50                     | 0.42              |
| 8:AB:2028:U:H3'   | 8:AB:2029:G:C8    | 2.54                     | 0.42              |
| 8:AB:2246:G:H2'   | 8:AB:2247:A:C8    | 2.55                     | 0.42              |
| 8:AB:2265:U:O2    | 8:AB:2276:G:C2    | 2.73                     | 0.42              |
| 8:AB:2439:A:H1'   | 8:AB:2587:A:OP1   | 2.19                     | 0.42              |
| 8:AB:2448:A:H5'   | 8:AB:2449:U:OP2   | 2.20                     | 0.42              |
| 8:AB:2511:U:H2'   | 8:AB:2512:C:H5'   | 2.02                     | 0.42              |
| 8:AB:2531:A:N3    | 8:AB:2532:G:C8    | 2.88                     | 0.42              |
| 8:AB:2591:C:C5    | 8:AB:2592:G:N7    | 2.88                     | 0.42              |
| 8:AB:2595:G:H1    | 9:AC:237:ARG:HH22 | 1.68                     | 0.42              |
| 8:AB:2621:G:O2'   | 10:AD:164:GLN:CB  | 2.63                     | 0.42              |
| 8:AB:2645:G:C3'   | 8:AB:2646:C:C5'   | 2.90                     | 0.42              |
| 8:AB:2666:C:O2    | 8:AB:2666:C:O4'   | 2.36                     | 0.42              |
| 8:AB:2736:A:C2    | 8:AB:2737:G:C4    | 3.08                     | 0.42              |
| 8:AB:2776:A:O5'   | 8:AB:2776:A:C2'   | 2.67                     | 0.42              |
| 9:AC:145:MET:HA   | 9:AC:183:VAL:HG21 | 2.02                     | 0.42              |
| 9:AC:158:GLY:CA   | 9:AC:197:ALA:HB2  | 2.50                     | 0.42              |
| 9:AC:208:GLY:HA2  | 9:AC:212:TRP:H    | 1.84                     | 0.42              |
| 9:AC:267:VAL:HG21 | 9:AC:269:ARG:NH1  | 2.35                     | 0.42              |
| 10:AD:15:PHE:O    | 10:AD:16:THR:HB   | 2.19                     | 0.42              |
| 10:AD:34:VAL:CG1  | 10:AD:48:ILE:HG22 | 2.49                     | 0.42              |
| 10:AD:131:ASP:OD2 | 10:AD:134:HIS:CG  | 2.72                     | 0.42              |
| 11:AE:1:MET:CG    | 11:AE:2:GLU:N     | 2.81                     | 0.42              |
| 12:AF:38:GLY:O    | 12:AF:39:VAL:C    | 2.57                     | 0.42              |
| 12:AF:50:ASP:CG   | 12:AF:51:ASN:N    | 2.73                     | 0.42              |
| 16:AJ:43:GLU:N    | 23:AQ:63:ARG:HH12 | 2.18                     | 0.42              |
| 16:AJ:113:PRO:CA  | 16:AJ:116:ARG:HB2 | 2.46                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AJ:129:GLU:O    | 16:AJ:130:HIS:HB2  | 2.19                     | 0.42              |
| 18:AL:33:ARG:HH11  | 18:AL:33:ARG:CB    | 2.32                     | 0.42              |
| 18:AL:101:ILE:HG13 | 18:AL:105:ILE:HG21 | 2.02                     | 0.42              |
| 19:AM:18:ARG:HD2   | 19:AM:19:GLY:N     | 2.35                     | 0.42              |
| 20:AN:69:ARG:HH11  | 20:AN:69:ARG:HG3   | 1.83                     | 0.42              |
| 20:AN:97:ILE:O     | 20:AN:98:LEU:HD23  | 2.20                     | 0.42              |
| 21:AO:51:ALA:HB3   | 21:AO:78:VAL:CG1   | 2.50                     | 0.42              |
| 23:AQ:75:TYR:CE1   | 23:AQ:79:ILE:HD11  | 2.54                     | 0.42              |
| 23:AQ:111:LYS:HZ3  | 24:AR:52:PRO:C     | 2.23                     | 0.42              |
| 25:AS:71:VAL:H     | 25:AS:107:VAL:HA   | 1.84                     | 0.42              |
| 25:AS:87:PRO:HB2   | 25:AS:88:ARG:H     | 1.74                     | 0.42              |
| 27:AU:5:ARG:HE     | 27:AU:6:ARG:HG2    | 1.85                     | 0.42              |
| 30:AX:2:LYS:O      | 30:AX:5:GLU:OE1    | 2.38                     | 0.42              |
| 30:AX:50:VAL:O     | 30:AX:53:VAL:HB    | 2.19                     | 0.42              |
| 32:AZ:48:GLN:NE2   | 32:AZ:49:ARG:HB3   | 2.34                     | 0.42              |
| 33:BA:10:A:H2'     | 33:BA:11:G:H8      | 1.85                     | 0.42              |
| 33:BA:54:C:C5      | 33:BA:352:C:C5     | 3.08                     | 0.42              |
| 33:BA:109:A:C2     | 33:BA:327:A:H2     | 2.37                     | 0.42              |
| 33:BA:139:A:H2'    | 33:BA:140:U:O4'    | 2.20                     | 0.42              |
| 33:BA:145:G:N2     | 33:BA:177:G:O6     | 2.51                     | 0.42              |
| 33:BA:172:A:N6     | 33:BA:174:A:C5     | 2.87                     | 0.42              |
| 33:BA:173:U:H5'    | 33:BA:197:A:O4'    | 2.20                     | 0.42              |
| 33:BA:185:U:O2'    | 52:BT:75:LYS:HD2   | 2.19                     | 0.42              |
| 33:BA:228:A:O2'    | 48:BP:2:VAL:HG11   | 2.19                     | 0.42              |
| 33:BA:247:G:OP1    | 33:BA:247:G:H4'    | 2.20                     | 0.42              |
| 33:BA:274:A:H4'    | 33:BA:275:G:O5'    | 2.19                     | 0.42              |
| 33:BA:332:G:H2'    | 33:BA:333:U:H6     | 1.84                     | 0.42              |
| 33:BA:446:G:H8     | 33:BA:446:G:O5'    | 2.02                     | 0.42              |
| 33:BA:518:C:H6     | 33:BA:530:G:C4     | 2.37                     | 0.42              |
| 33:BA:584:G:O5'    | 33:BA:584:G:C8     | 2.67                     | 0.42              |
| 33:BA:632:U:H3'    | 33:BA:633:G:H5'    | 2.00                     | 0.42              |
| 33:BA:644:U:H2'    | 33:BA:645:G:C5'    | 2.50                     | 0.42              |
| 33:BA:678:U:O2     | 33:BA:777:A:H4'    | 2.20                     | 0.42              |
| 33:BA:1059:C:OP2   | 35:BC:198:LYS:NZ   | 2.50                     | 0.42              |
| 33:BA:1077:G:C2    | 33:BA:1081:A:N1    | 2.88                     | 0.42              |
| 33:BA:1078:U:C4    | 33:BA:1079:G:N2    | 2.87                     | 0.42              |
| 33:BA:1147:C:C2    | 33:BA:1148:U:C5    | 3.07                     | 0.42              |
| 33:BA:1296:C:O2'   | 33:BA:1302:C:N3    | 2.44                     | 0.42              |
| 33:BA:1320:C:N4    | 33:BA:1321:U:C4    | 2.88                     | 0.42              |
| 33:BA:1435:G:H8    | 33:BA:1435:G:O5'   | 2.03                     | 0.42              |
| 34:BB:128:LEU:HB3  | 34:BB:129:THR:H    | 1.63                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BC:23:ALA:HB1  | 35:BC:27:GLU:CG   | 2.50                     | 0.42              |
| 35:BC:51:VAL:CG2  | 35:BC:52:SER:H    | 2.33                     | 0.42              |
| 36:BD:164:ARG:N   | 36:BD:164:ARG:HD3 | 2.33                     | 0.42              |
| 39:BG:144:ALA:C   | 39:BG:146:ALA:H   | 2.23                     | 0.42              |
| 40:BH:58:LEU:HD22 | 40:BH:60:LEU:CD1  | 2.50                     | 0.42              |
| 46:BN:25:GLU:O    | 46:BN:29:ILE:HG13 | 2.20                     | 0.42              |
| 52:BT:8:LYS:C     | 52:BT:10:ALA:N    | 2.73                     | 0.42              |
| 52:BT:34:VAL:HG11 | 52:BT:78:LEU:HD22 | 2.01                     | 0.42              |
| 1:C0:49:ARG:HB3   | 1:C0:50:GLY:H     | 1.73                     | 0.42              |
| 8:CB:3:U:H2'      | 8:CB:4:U:C6       | 2.54                     | 0.42              |
| 8:CB:83:A:H2      | 8:CB:104:A:N1     | 2.15                     | 0.42              |
| 8:CB:323:C:C4     | 8:CB:333:G:C8     | 3.08                     | 0.42              |
| 8:CB:362:A:C4     | 8:CB:363:G:C8     | 3.08                     | 0.42              |
| 8:CB:448:U:C4'    | 8:CB:448:U:OP2    | 2.66                     | 0.42              |
| 8:CB:554:U:C2'    | 8:CB:555:G:O5'    | 2.68                     | 0.42              |
| 8:CB:563:A:N6     | 8:CB:2018:G:C5    | 2.88                     | 0.42              |
| 8:CB:583:G:C2     | 8:CB:584:C:C2     | 3.08                     | 0.42              |
| 8:CB:686:U:O2'    | 8:CB:686:U:C6     | 2.70                     | 0.42              |
| 8:CB:742:A:N1     | 8:CB:756:A:N1     | 2.68                     | 0.42              |
| 8:CB:862:G:C8     | 8:CB:862:G:C3'    | 3.03                     | 0.42              |
| 8:CB:948:C:C2'    | 8:CB:949:G:O5'    | 2.67                     | 0.42              |
| 8:CB:1099:G:H5'   | 8:CB:1099:G:H8    | 1.79                     | 0.42              |
| 8:CB:1275:A:N1    | 8:CB:1296:G:H1'   | 2.35                     | 0.42              |
| 8:CB:1376:C:N3    | 8:CB:1377:G:C5    | 2.88                     | 0.42              |
| 8:CB:1460:U:H4'   | 8:CB:1461:C:OP2   | 2.20                     | 0.42              |
| 8:CB:1469:A:C2    | 8:CB:1470:A:N3    | 2.88                     | 0.42              |
| 8:CB:1633:G:O2'   | 8:CB:1634:A:H5''  | 2.20                     | 0.42              |
| 8:CB:1661:G:H2'   | 8:CB:1662:U:C5'   | 2.49                     | 0.42              |
| 8:CB:1686:C:H6    | 8:CB:1686:C:O5'   | 2.02                     | 0.42              |
| 8:CB:1750:G:H2'   | 8:CB:1751:U:H5'   | 2.01                     | 0.42              |
| 8:CB:1853:A:O2'   | 8:CB:1854:A:H5'   | 2.20                     | 0.42              |
| 8:CB:1916:A:H2'   | 8:CB:1917:U:O4'   | 2.20                     | 0.42              |
| 8:CB:1929:G:H2'   | 8:CB:1929:G:N3    | 2.35                     | 0.42              |
| 8:CB:1998:A:C8    | 8:CB:1998:A:C3'   | 3.02                     | 0.42              |
| 8:CB:2026:U:N3    | 8:CB:2027:G:N7    | 2.68                     | 0.42              |
| 8:CB:2181:U:H2'   | 8:CB:2181:U:O2    | 2.19                     | 0.42              |
| 8:CB:2311:A:O2'   | 12:CF:84:ILE:HD11 | 2.20                     | 0.42              |
| 8:CB:2355:G:N1    | 8:CB:2356:U:O2    | 2.52                     | 0.42              |
| 8:CB:2469:A:N6    | 8:CB:2470:G:C4    | 2.88                     | 0.42              |
| 8:CB:2543:G:C2    | 8:CB:2765:A:C4    | 3.08                     | 0.42              |
| 8:CB:2567:G:C4    | 8:CB:2568:U:C5    | 3.07                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:2578:G:O2'   | 10:CD:138:LEU:HD21 | 2.20                     | 0.42              |
| 8:CB:2666:C:O4'   | 8:CB:2666:C:O2     | 2.37                     | 0.42              |
| 8:CB:2740:A:C2    | 8:CB:2741:A:C5     | 3.08                     | 0.42              |
| 8:CB:2775:G:H3'   | 8:CB:2775:G:C8     | 2.54                     | 0.42              |
| 8:CB:2901:C:C5'   | 8:CB:2901:C:H6     | 2.33                     | 0.42              |
| 10:CD:208:LYS:O   | 10:CD:209:ALA:C    | 2.58                     | 0.42              |
| 11:CE:111:GLU:OE1 | 11:CE:181:ILE:HD13 | 2.19                     | 0.42              |
| 12:CF:72:SER:O    | 12:CF:74:ALA:N     | 2.52                     | 0.42              |
| 12:CF:120:SER:O   | 12:CF:127:TYR:HD1  | 2.02                     | 0.42              |
| 13:CG:97:VAL:HG21 | 13:CG:123:GLU:HA   | 2.01                     | 0.42              |
| 13:CG:145:ALA:C   | 13:CG:147:LEU:H    | 2.24                     | 0.42              |
| 14:CH:1:MET:HG3   | 14:CH:21:VAL:CG2   | 2.41                     | 0.42              |
| 14:CH:35:LYS:HE2  | 14:CH:35:LYS:HB2   | 1.64                     | 0.42              |
| 16:CJ:15:TRP:CD1  | 16:CJ:15:TRP:N     | 2.88                     | 0.42              |
| 16:CJ:114:LEU:C   | 16:CJ:116:ARG:H    | 2.23                     | 0.42              |
| 18:CL:77:ILE:HD12 | 18:CL:110:VAL:HA   | 1.94                     | 0.42              |
| 18:CL:124:GLY:C   | 18:CL:125:LEU:CG   | 2.86                     | 0.42              |
| 19:CM:71:LYS:HZ3  | 19:CM:91:TYR:HB3   | 1.85                     | 0.42              |
| 20:CN:101:GLY:C   | 20:CN:102:PHE:CG   | 2.91                     | 0.42              |
| 21:CO:84:GLU:O    | 21:CO:87:ILE:HG23  | 2.20                     | 0.42              |
| 23:CQ:46:TYR:CE1  | 24:CR:89:HIS:ND1   | 2.87                     | 0.42              |
| 24:CR:74:ILE:HG13 | 24:CR:76:LYS:HE3   | 2.02                     | 0.42              |
| 24:CR:87:GLN:HG2  | 24:CR:87:GLN:H     | 1.62                     | 0.42              |
| 27:CU:11:ILE:HD13 | 27:CU:11:ILE:HA    | 1.70                     | 0.42              |
| 28:CV:29:ILE:HD11 | 28:CV:37:PRO:HA    | 2.01                     | 0.42              |
| 31:CY:2:LYS:HZ2   | 31:CY:37:ARG:HG3   | 1.84                     | 0.42              |
| 31:CY:54:VAL:CG1  | 31:CY:55:LYS:N     | 2.82                     | 0.42              |
| 33:DA:92:U:C6     | 33:DA:92:U:H5''    | 2.55                     | 0.42              |
| 33:DA:131:A:N6    | 33:DA:231:U:H3     | 2.18                     | 0.42              |
| 33:DA:183:C:H6    | 33:DA:183:C:H2'    | 1.59                     | 0.42              |
| 33:DA:274:A:H4'   | 33:DA:275:G:O5'    | 2.20                     | 0.42              |
| 33:DA:293:G:C5    | 33:DA:294:U:H5     | 2.37                     | 0.42              |
| 33:DA:360:G:O2'   | 33:DA:361:G:H5'    | 2.20                     | 0.42              |
| 33:DA:425:G:C2    | 33:DA:426:U:C2     | 3.08                     | 0.42              |
| 33:DA:544:G:N3    | 33:DA:545:C:C6     | 2.88                     | 0.42              |
| 33:DA:668:G:H8    | 33:DA:668:G:OP2    | 2.02                     | 0.42              |
| 33:DA:681:A:C2    | 33:DA:710:G:C4     | 3.08                     | 0.42              |
| 33:DA:722:G:N3    | 33:DA:722:G:H2'    | 2.34                     | 0.42              |
| 33:DA:797:C:OP1   | 43:DK:125:LYS:O    | 2.37                     | 0.42              |
| 33:DA:940:C:C6    | 33:DA:940:C:H3'    | 2.54                     | 0.42              |
| 33:DA:998:C:N4    | 33:DA:1043:G:N1    | 2.61                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DA:1455:G:C4    | 33:DA:1456:A:N7    | 2.88                     | 0.42              |
| 34:DB:184:ALA:HB3  | 34:DB:195:VAL:HG13 | 2.01                     | 0.42              |
| 35:DC:76:ILE:HA    | 35:DC:83:VAL:CG2   | 2.50                     | 0.42              |
| 35:DC:146:LYS:HB2  | 35:DC:203:LYS:O    | 2.19                     | 0.42              |
| 35:DC:203:LYS:HB3  | 35:DC:204:GLY:H    | 1.61                     | 0.42              |
| 41:DI:104:THR:HG22 | 41:DI:105:ARG:N    | 2.35                     | 0.42              |
| 44:DL:14:LYS:HD3   | 44:DL:14:LYS:O     | 2.20                     | 0.42              |
| 46:DN:65:GLN:HB2   | 46:DN:78:LEU:CD1   | 2.49                     | 0.42              |
| 50:DR:24:ASP:O     | 50:DR:25:ILE:C     | 2.57                     | 0.42              |
| 51:DS:46:LEU:O     | 51:DS:60:PHE:HA    | 2.20                     | 0.42              |
| 53:DU:28:LEU:C     | 53:DU:30:GLU:N     | 2.72                     | 0.42              |
| 1:A0:1:ALA:N       | 8:AB:2056:G:N2     | 2.68                     | 0.42              |
| 1:A0:48:TYR:CD2    | 1:A0:48:TYR:C      | 2.93                     | 0.42              |
| 4:A3:12:ARG:O      | 4:A3:12:ARG:HG2    | 2.19                     | 0.42              |
| 7:AA:32:U:C2'      | 7:AA:33:G:H8       | 2.13                     | 0.42              |
| 7:AA:75:G:C4       | 7:AA:76:G:C8       | 3.08                     | 0.42              |
| 8:AB:4:U:C2        | 8:AB:2900:A:H2     | 2.38                     | 0.42              |
| 8:AB:88:G:O2'      | 8:AB:89:A:H5'      | 2.20                     | 0.42              |
| 8:AB:122:G:O5'     | 8:AB:122:G:H8      | 2.03                     | 0.42              |
| 8:AB:271:G:C2      | 8:AB:272:A:C6      | 3.08                     | 0.42              |
| 8:AB:407:G:N2      | 8:AB:421:C:N1      | 2.68                     | 0.42              |
| 8:AB:498:G:N1      | 8:AB:499:U:C5      | 2.88                     | 0.42              |
| 8:AB:590:A:N7      | 8:AB:591:U:C4      | 2.88                     | 0.42              |
| 8:AB:758:C:O2      | 8:AB:1981:A:H2     | 2.02                     | 0.42              |
| 8:AB:814:C:N3      | 8:AB:1194:A:C2     | 2.88                     | 0.42              |
| 8:AB:964:C:O5'     | 8:AB:964:C:H6      | 2.02                     | 0.42              |
| 8:AB:978:G:N2      | 8:AB:986:C:C2      | 2.88                     | 0.42              |
| 8:AB:997:G:H2'     | 8:AB:998:C:O4'     | 2.20                     | 0.42              |
| 8:AB:1093:G:C8     | 8:AB:1093:G:H3'    | 2.55                     | 0.42              |
| 8:AB:1150:C:H6     | 8:AB:1150:C:O5'    | 2.03                     | 0.42              |
| 8:AB:1196:C:C2     | 8:AB:1197:G:C8     | 3.08                     | 0.42              |
| 8:AB:1236:G:HO2'   | 8:AB:1237:A:P      | 2.42                     | 0.42              |
| 8:AB:1241:A:C8     | 8:AB:1242:U:O4'    | 2.73                     | 0.42              |
| 8:AB:1241:A:H2'    | 8:AB:1242:U:O5'    | 2.20                     | 0.42              |
| 8:AB:1282:U:H3'    | 8:AB:1282:U:H6     | 1.85                     | 0.42              |
| 8:AB:1399:C:H5''   | 26:AT:26:LYS:HE3   | 2.02                     | 0.42              |
| 8:AB:1409:U:H2'    | 8:AB:1410:G:O4'    | 2.20                     | 0.42              |
| 8:AB:1618:A:O2'    | 8:AB:1619:G:H5'    | 2.20                     | 0.42              |
| 8:AB:1625:C:H2'    | 8:AB:1626:A:O4'    | 2.20                     | 0.42              |
| 8:AB:1768:C:H3'    | 8:AB:1768:C:H6     | 1.81                     | 0.42              |
| 8:AB:1773:A:N7     | 8:AB:1829:A:C1'    | 2.83                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1974:C:H6    | 8:AB:1974:C:H3'    | 1.85                     | 0.42              |
| 8:AB:1998:A:N6    | 8:AB:1999:C:C4     | 2.88                     | 0.42              |
| 8:AB:2031:A:N1    | 8:AB:2498:C:N1     | 2.68                     | 0.42              |
| 8:AB:2051:A:C4    | 8:AB:2614:A:N6     | 2.88                     | 0.42              |
| 8:AB:2407:A:C2    | 8:AB:2408:U:C4     | 3.07                     | 0.42              |
| 8:AB:2453:A:H2    | 8:AB:2504:U:O2     | 2.00                     | 0.42              |
| 8:AB:2529:G:H5'   | 8:AB:2530:A:O5'    | 2.20                     | 0.42              |
| 8:AB:2531:A:C2'   | 8:AB:2532:G:H5'    | 2.49                     | 0.42              |
| 8:AB:2533:U:H2'   | 8:AB:2534:A:O4'    | 2.19                     | 0.42              |
| 8:AB:2635:A:OP1   | 10:AD:77:ARG:HG2   | 2.19                     | 0.42              |
| 8:AB:2684:U:H6    | 8:AB:2684:U:C3'    | 2.33                     | 0.42              |
| 8:AB:2689:U:OP2   | 8:AB:2719:G:N2     | 2.49                     | 0.42              |
| 8:AB:2692:G:C2    | 8:AB:2693:G:C4     | 3.08                     | 0.42              |
| 8:AB:2717:C:H2'   | 8:AB:2718:G:O5'    | 2.20                     | 0.42              |
| 9:AC:161:VAL:HB   | 9:AC:193:GLU:OE2   | 2.20                     | 0.42              |
| 9:AC:253:GLY:HA2  | 9:AC:254:LYS:HZ2   | 1.84                     | 0.42              |
| 10:AD:98:VAL:CG2  | 10:AD:101:PHE:CE2  | 2.96                     | 0.42              |
| 10:AD:143:PRO:C   | 10:AD:145:SER:H    | 2.23                     | 0.42              |
| 11:AE:43:THR:HG23 | 11:AE:44:ARG:HE    | 1.85                     | 0.42              |
| 11:AE:133:LEU:HB3 | 11:AE:136:GLN:CD   | 2.40                     | 0.42              |
| 14:AH:58:LEU:HA   | 14:AH:62:LEU:HB2   | 2.02                     | 0.42              |
| 15:AI:99:LYS:HE3  | 15:AI:99:LYS:HB2   | 1.85                     | 0.42              |
| 18:AL:29:LYS:HB3  | 18:AL:29:LYS:HE3   | 1.52                     | 0.42              |
| 18:AL:38:GLN:HA   | 18:AL:41:ARG:CZ    | 2.50                     | 0.42              |
| 18:AL:74:THR:HG22 | 18:AL:107:PHE:N    | 2.34                     | 0.42              |
| 18:AL:94:THR:N    | 18:AL:96:LYS:NZ    | 2.68                     | 0.42              |
| 18:AL:96:LYS:NZ   | 18:AL:101:ILE:HG22 | 2.35                     | 0.42              |
| 19:AM:101:VAL:O   | 19:AM:102:LEU:HB2  | 2.19                     | 0.42              |
| 22:AP:47:ILE:HG21 | 22:AP:49:ILE:HG13  | 2.01                     | 0.42              |
| 24:AR:84:ARG:HH12 | 24:AR:86:GLN:CG    | 2.33                     | 0.42              |
| 25:AS:85:ILE:HA   | 25:AS:85:ILE:HD13  | 1.82                     | 0.42              |
| 26:AT:11:LEU:HD23 | 26:AT:32:LEU:HD22  | 2.02                     | 0.42              |
| 26:AT:60:THR:HA   | 26:AT:82:LYS:O     | 2.20                     | 0.42              |
| 28:AV:65:VAL:HG13 | 28:AV:68:LYS:HG3   | 2.01                     | 0.42              |
| 32:AZ:3:LYS:HE3   | 32:AZ:8:LYS:N      | 2.35                     | 0.42              |
| 32:AZ:5:ILE:H     | 32:AZ:5:ILE:CD1    | 2.29                     | 0.42              |
| 32:AZ:13:THR:HG21 | 32:AZ:25:ARG:NH1   | 2.35                     | 0.42              |
| 33:BA:332:G:OP2   | 52:BT:2:ASN:HB3    | 2.19                     | 0.42              |
| 33:BA:533:A:C4    | 33:BA:536:C:C5     | 3.08                     | 0.42              |
| 33:BA:547:A:N3    | 33:BA:548:G:H1'    | 2.35                     | 0.42              |
| 33:BA:586:C:C6    | 33:BA:586:C:C3'    | 3.03                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:606:G:H3'   | 33:BA:607:A:C5'   | 2.50                     | 0.42              |
| 33:BA:628:G:N1    | 33:BA:629:A:C2    | 2.88                     | 0.42              |
| 33:BA:644:U:H2'   | 33:BA:645:G:H5''  | 2.02                     | 0.42              |
| 33:BA:644:U:C4    | 33:BA:645:G:N7    | 2.88                     | 0.42              |
| 33:BA:663:A:H2'   | 33:BA:664:G:C8    | 2.54                     | 0.42              |
| 33:BA:671:G:N1    | 33:BA:672:U:O2    | 2.53                     | 0.42              |
| 33:BA:722:G:C6    | 33:BA:724:G:N3    | 2.88                     | 0.42              |
| 33:BA:756:C:O2'   | 33:BA:823:C:H1'   | 2.19                     | 0.42              |
| 33:BA:804:U:H4'   | 33:BA:805:C:OP2   | 2.20                     | 0.42              |
| 33:BA:849:G:C2    | 33:BA:850:U:O2    | 2.73                     | 0.42              |
| 33:BA:909:A:H2'   | 33:BA:910:C:C6    | 2.37                     | 0.42              |
| 33:BA:978:A:O2'   | 33:BA:979:C:H5'   | 2.20                     | 0.42              |
| 33:BA:1001:C:C6   | 33:BA:1001:C:C3'  | 3.03                     | 0.42              |
| 33:BA:1076:U:O4   | 33:BA:1081:A:N6   | 2.53                     | 0.42              |
| 33:BA:1155:A:C2   | 33:BA:1156:G:H1'  | 2.55                     | 0.42              |
| 33:BA:1195:C:H3'  | 33:BA:1196:A:C5'  | 2.50                     | 0.42              |
| 33:BA:1215:G:N2   | 33:BA:1216:A:H1'  | 2.34                     | 0.42              |
| 33:BA:1236:A:C2   | 33:BA:1237:C:N4   | 2.88                     | 0.42              |
| 33:BA:1321:U:C4   | 33:BA:1322:C:C4   | 3.07                     | 0.42              |
| 55:BA:5107:HOH:O  | 44:BL:84:GLY:HA2  | 2.19                     | 0.42              |
| 34:BB:163:ILE:CG2 | 34:BB:164:ASP:N   | 2.74                     | 0.42              |
| 36:BD:64:TYR:C    | 36:BD:66:VAL:H    | 2.24                     | 0.42              |
| 42:BJ:40:ILE:HG13 | 42:BJ:73:LEU:HB3  | 2.02                     | 0.42              |
| 43:BK:88:PRO:C    | 43:BK:92:ARG:HG2  | 2.40                     | 0.42              |
| 46:BN:33:VAL:O    | 46:BN:35:ALA:N    | 2.50                     | 0.42              |
| 51:BS:37:SER:HB3  | 51:BS:70:LEU:HB3  | 2.01                     | 0.42              |
| 3:C2:9:VAL:HG23   | 3:C2:10:LEU:H     | 1.85                     | 0.42              |
| 3:C2:24:THR:HB    | 3:C2:27:GLY:HA3   | 2.01                     | 0.42              |
| 7:CA:12:C:N4      | 29:CW:50:VAL:HG12 | 2.35                     | 0.42              |
| 7:CA:34:A:O2'     | 7:CA:35:C:O5'     | 2.37                     | 0.42              |
| 7:CA:78:A:N6      | 7:CA:98:G:O2'     | 2.45                     | 0.42              |
| 8:CB:30:G:H2'     | 8:CB:31:C:C6      | 2.55                     | 0.42              |
| 8:CB:90:U:O4      | 8:CB:91:A:N7      | 2.52                     | 0.42              |
| 8:CB:161:A:N6     | 8:CB:162:U:H5     | 2.17                     | 0.42              |
| 8:CB:188:G:H1     | 8:CB:209:C:N4     | 2.17                     | 0.42              |
| 8:CB:200:U:H2'    | 8:CB:201:C:H5'    | 2.01                     | 0.42              |
| 8:CB:292:U:O5'    | 8:CB:292:U:C6     | 2.60                     | 0.42              |
| 8:CB:310:A:C4     | 8:CB:330:A:C6     | 3.07                     | 0.42              |
| 8:CB:332:A:C8     | 8:CB:335:C:C4     | 3.07                     | 0.42              |
| 8:CB:339:U:C6     | 8:CB:339:U:H3'    | 2.55                     | 0.42              |
| 8:CB:567:U:O2     | 8:CB:568:U:C6     | 2.72                     | 0.42              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:576:U:H2'     | 8:CB:577:G:C8      | 2.55                     | 0.42              |
| 8:CB:585:G:C6      | 8:CB:1251:C:C4     | 3.08                     | 0.42              |
| 8:CB:599:A:C2      | 8:CB:659:G:C2      | 3.08                     | 0.42              |
| 8:CB:647:G:H21     | 8:CB:2350:C:H4'    | 1.85                     | 0.42              |
| 8:CB:682:G:C2'     | 8:CB:683:U:H5'     | 2.50                     | 0.42              |
| 8:CB:1050:A:C6     | 8:CB:1051:G:C6     | 3.08                     | 0.42              |
| 8:CB:1216:G:C2     | 8:CB:1217:U:C6     | 3.07                     | 0.42              |
| 8:CB:1256:G:H2'    | 8:CB:1257:C:C6     | 2.53                     | 0.42              |
| 8:CB:1299:G:N1     | 8:CB:1640:A:OP2    | 2.46                     | 0.42              |
| 8:CB:1307:A:C8     | 8:CB:1307:A:H3'    | 2.55                     | 0.42              |
| 8:CB:1385:A:C4     | 8:CB:1386:C:C5     | 3.07                     | 0.42              |
| 8:CB:1385:A:C5     | 8:CB:1386:C:C4     | 3.08                     | 0.42              |
| 8:CB:1620:G:H2'    | 8:CB:1621:U:H5'    | 2.02                     | 0.42              |
| 8:CB:1707:G:N1     | 8:CB:1708:C:N3     | 2.68                     | 0.42              |
| 8:CB:1734:G:H2'    | 8:CB:1735:A:H8     | 1.84                     | 0.42              |
| 8:CB:1773:A:N7     | 8:CB:1829:A:C1'    | 2.83                     | 0.42              |
| 8:CB:2020:A:N6     | 8:CB:2022:U:N3     | 2.68                     | 0.42              |
| 8:CB:2459:A:C6     | 8:CB:2494:G:N3     | 2.88                     | 0.42              |
| 8:CB:2530:A:P      | 8:CB:2535:G:H22    | 2.43                     | 0.42              |
| 8:CB:2547:A:N3     | 8:CB:2562:U:O2     | 2.53                     | 0.42              |
| 8:CB:2553:G:N2     | 8:CB:2583:G:H1'    | 2.34                     | 0.42              |
| 8:CB:2592:G:N3     | 8:CB:2592:G:H2'    | 2.35                     | 0.42              |
| 8:CB:2617:U:O2'    | 8:CB:2618:G:H5'    | 2.20                     | 0.42              |
| 8:CB:2658:C:O2'    | 8:CB:2659:G:H5'    | 2.19                     | 0.42              |
| 8:CB:2679:A:N3     | 8:CB:2680:U:C6     | 2.88                     | 0.42              |
| 8:CB:2684:U:H6     | 8:CB:2684:U:C3'    | 2.32                     | 0.42              |
| 8:CB:2722:G:H1'    | 20:CN:4:ARG:HD3    | 2.01                     | 0.42              |
| 9:CC:135:PRO:C     | 9:CC:137:GLY:N     | 2.74                     | 0.42              |
| 10:CD:13:ARG:HA    | 10:CD:13:ARG:CZ    | 2.50                     | 0.42              |
| 10:CD:59:ARG:O     | 10:CD:60:VAL:C     | 2.59                     | 0.42              |
| 10:CD:151:THR:C    | 10:CD:153:GLY:N    | 2.73                     | 0.42              |
| 11:CE:58:LYS:HA    | 11:CE:59:PRO:HD3   | 1.51                     | 0.42              |
| 11:CE:134:LEU:CD2  | 11:CE:135:ALA:H    | 2.32                     | 0.42              |
| 11:CE:159:LEU:C    | 11:CE:161:ALA:N    | 2.73                     | 0.42              |
| 11:CE:187:VAL:O    | 11:CE:187:VAL:CG2  | 2.67                     | 0.42              |
| 12:CF:27:VAL:HA    | 12:CF:28:PRO:HD3   | 1.80                     | 0.42              |
| 13:CG:51:PHE:HE1   | 13:CG:53:PRO:HG3   | 1.85                     | 0.42              |
| 14:CH:117:LEU:HD12 | 14:CH:130:VAL:CG2  | 2.50                     | 0.42              |
| 15:CI:27:LEU:CD1   | 15:CI:58:ILE:HD13  | 2.50                     | 0.42              |
| 15:CI:104:GLN:O    | 15:CI:108:ILE:HG13 | 2.20                     | 0.42              |
| 18:CL:124:GLY:O    | 18:CL:125:LEU:HD12 | 2.20                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 19:CM:110:GLU:CD  | 19:CM:126:ILE:HD12 | 2.39                     | 0.42              |
| 20:CN:72:ASP:OD1  | 20:CN:75:ILE:HG22  | 2.20                     | 0.42              |
| 21:CO:8:ILE:O     | 21:CO:11:ALA:CB    | 2.67                     | 0.42              |
| 21:CO:94:ARG:NE   | 21:CO:94:ARG:CA    | 2.81                     | 0.42              |
| 22:CP:27:VAL:CG2  | 22:CP:84:SER:O     | 2.47                     | 0.42              |
| 29:CW:76:ARG:O    | 29:CW:78:PHE:N     | 2.53                     | 0.42              |
| 31:CY:32:GLY:O    | 31:CY:33:HIS:C     | 2.58                     | 0.42              |
| 31:CY:52:PHE:O    | 31:CY:53:MET:O     | 2.37                     | 0.42              |
| 32:CZ:3:LYS:HD3   | 32:CZ:9:TYR:HD1    | 1.83                     | 0.42              |
| 33:DA:59:A:C6     | 33:DA:354:G:C5     | 3.07                     | 0.42              |
| 33:DA:110:C:O2    | 33:DA:110:C:C2'    | 2.68                     | 0.42              |
| 33:DA:124:C:H2'   | 33:DA:125:U:O5'    | 2.20                     | 0.42              |
| 33:DA:133:U:H4'   | 33:DA:325:A:O2'    | 2.19                     | 0.42              |
| 33:DA:359:G:H2'   | 33:DA:360:G:O4'    | 2.19                     | 0.42              |
| 33:DA:400:C:H3'   | 33:DA:400:C:C6     | 2.55                     | 0.42              |
| 33:DA:408:A:C8    | 33:DA:409:U:C5     | 3.08                     | 0.42              |
| 33:DA:542:G:N1    | 33:DA:543:U:C4     | 2.88                     | 0.42              |
| 33:DA:617:G:N2    | 33:DA:624:C:N4     | 2.68                     | 0.42              |
| 33:DA:669:G:C2    | 33:DA:670:G:N9     | 2.88                     | 0.42              |
| 33:DA:705:G:C8    | 33:DA:705:G:C3'    | 3.03                     | 0.42              |
| 33:DA:715:A:H1'   | 33:DA:777:A:N6     | 2.35                     | 0.42              |
| 33:DA:825:A:C2    | 33:DA:826:C:N1     | 2.88                     | 0.42              |
| 33:DA:841:C:H6    | 33:DA:843:U:OP2    | 2.01                     | 0.42              |
| 33:DA:953:G:H5'   | 33:DA:954:G:OP2    | 2.20                     | 0.42              |
| 33:DA:958:A:C8    | 51:DS:54:ARG:NH1   | 2.86                     | 0.42              |
| 33:DA:1035:A:H2'  | 33:DA:1036:A:O4'   | 2.20                     | 0.42              |
| 33:DA:1051:C:C4   | 33:DA:1052:U:C5    | 3.08                     | 0.42              |
| 33:DA:1078:U:C4'  | 37:DE:137:ARG:HH12 | 2.33                     | 0.42              |
| 33:DA:1233:G:C2   | 33:DA:1234:C:C2    | 3.08                     | 0.42              |
| 33:DA:1295:U:O2'  | 33:DA:1296:C:H5'   | 2.19                     | 0.42              |
| 33:DA:1323:G:C2   | 33:DA:1324:A:C6    | 3.08                     | 0.42              |
| 33:DA:1368:A:C2   | 33:DA:1369:C:C2    | 3.07                     | 0.42              |
| 33:DA:1392:G:H21  | 33:DA:1502:A:C1'   | 2.33                     | 0.42              |
| 33:DA:1420:U:C6   | 33:DA:1420:U:C3'   | 3.03                     | 0.42              |
| 33:DA:1477:U:C6   | 33:DA:1478:U:C5    | 3.08                     | 0.42              |
| 33:DA:1494:G:C8   | 33:DA:1494:G:H3'   | 2.55                     | 0.42              |
| 34:DB:14:HIS:CG   | 34:DB:15:PHE:N     | 2.87                     | 0.42              |
| 34:DB:18:GLN:C    | 34:DB:37:VAL:HG23  | 2.40                     | 0.42              |
| 35:DC:110:LEU:O   | 35:DC:110:LEU:CG   | 2.68                     | 0.42              |
| 35:DC:156:LEU:HB2 | 35:DC:163:ARG:CZ   | 2.50                     | 0.42              |
| 35:DC:180:ASP:O   | 35:DC:203:LYS:HD3  | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:DE:11:GLN:OE1  | 37:DE:41:GLY:HA3  | 2.20                     | 0.42              |
| 37:DE:21:SER:HG   | 37:DE:28:ARG:HB2  | 1.84                     | 0.42              |
| 37:DE:45:VAL:CG1  | 37:DE:117:ALA:HB2 | 2.50                     | 0.42              |
| 38:DF:51:ILE:C    | 38:DF:53:LYS:N    | 2.74                     | 0.42              |
| 39:DG:96:ASN:N    | 39:DG:96:ASN:ND2  | 2.68                     | 0.42              |
| 39:DG:96:ASN:O    | 39:DG:100:MET:CG  | 2.68                     | 0.42              |
| 41:DI:66:VAL:HG11 | 41:DI:78:ILE:HD11 | 2.01                     | 0.42              |
| 43:DK:43:TRP:HE3  | 43:DK:44:ALA:HA   | 1.85                     | 0.42              |
| 46:DN:30:ILE:HG23 | 46:DN:41:TRP:HB3  | 2.01                     | 0.42              |
| 47:DO:25:GLU:HA   | 47:DO:80:LEU:HD12 | 2.01                     | 0.42              |
| 51:DS:48:ILE:HD12 | 51:DS:61:VAL:HG21 | 2.02                     | 0.42              |
| 4:A3:58:ILE:O     | 4:A3:59:ALA:HB3   | 2.20                     | 0.41              |
| 7:AA:74:U:C4      | 7:AA:75:G:C6      | 3.07                     | 0.41              |
| 8:AB:128:C:H2'    | 8:AB:129:C:H6     | 1.85                     | 0.41              |
| 8:AB:196:A:N7     | 18:AL:50:PHE:CE2  | 2.88                     | 0.41              |
| 8:AB:244:A:H3'    | 8:AB:244:A:C8     | 2.54                     | 0.41              |
| 8:AB:266:G:C6     | 8:AB:267:C:C4     | 3.08                     | 0.41              |
| 8:AB:269:C:N3     | 8:AB:424:G:C2     | 2.88                     | 0.41              |
| 8:AB:300:A:C5'    | 8:AB:300:A:C8     | 3.03                     | 0.41              |
| 8:AB:411:G:OP2    | 8:AB:2407:A:OP2   | 2.37                     | 0.41              |
| 8:AB:553:G:C8     | 8:AB:553:G:C3'    | 3.03                     | 0.41              |
| 8:AB:626:A:N1     | 18:AL:79:LEU:HD13 | 2.35                     | 0.41              |
| 8:AB:899:A:H8     | 8:AB:899:A:C5'    | 2.33                     | 0.41              |
| 8:AB:976:G:H4'    | 8:AB:1156:A:H62   | 1.84                     | 0.41              |
| 8:AB:1084:A:C5    | 8:AB:1085:A:N7    | 2.88                     | 0.41              |
| 8:AB:1196:C:O4'   | 8:AB:1226:A:C6    | 2.73                     | 0.41              |
| 8:AB:1225:G:O2'   | 8:AB:1226:A:H5'   | 2.20                     | 0.41              |
| 8:AB:1226:A:H5''  | 23:AQ:15:LYS:NZ   | 2.34                     | 0.41              |
| 8:AB:1241:A:N7    | 8:AB:1242:U:N1    | 2.68                     | 0.41              |
| 8:AB:1268:A:C2'   | 8:AB:1269:A:O5'   | 2.67                     | 0.41              |
| 8:AB:1345:C:H3'   | 8:AB:1345:C:H6    | 1.84                     | 0.41              |
| 8:AB:1426:G:C4    | 8:AB:1427:A:N7    | 2.88                     | 0.41              |
| 8:AB:1495:A:C2'   | 8:AB:1496:A:H5'   | 2.50                     | 0.41              |
| 8:AB:1499:C:C6    | 8:AB:1499:C:C3'   | 3.03                     | 0.41              |
| 8:AB:1505:A:C6    | 8:AB:1506:U:C4    | 3.08                     | 0.41              |
| 8:AB:1663:G:N1    | 8:AB:1998:A:C6    | 2.88                     | 0.41              |
| 8:AB:1684:G:N2    | 8:AB:1705:A:C4    | 2.88                     | 0.41              |
| 8:AB:1702:G:H2'   | 8:AB:1703:G:O5'   | 2.20                     | 0.41              |
| 8:AB:1707:G:C5    | 8:AB:1756:G:C6    | 3.08                     | 0.41              |
| 8:AB:1714:U:O2    | 8:AB:1714:U:H2'   | 2.20                     | 0.41              |
| 8:AB:1758:U:H3    | 8:AB:2696:U:H5'   | 1.85                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1782:U:O5'    | 8:AB:1782:U:H6     | 2.03                     | 0.41              |
| 8:AB:1831:G:C6     | 8:AB:1832:C:N4     | 2.88                     | 0.41              |
| 8:AB:1883:U:H2'    | 8:AB:1884:G:O4'    | 2.20                     | 0.41              |
| 8:AB:1891:G:H2'    | 8:AB:1892:C:H6     | 1.83                     | 0.41              |
| 8:AB:1967:C:N4     | 8:AB:1968:G:C4     | 2.88                     | 0.41              |
| 8:AB:2027:G:C4     | 8:AB:2028:U:C6     | 3.08                     | 0.41              |
| 8:AB:2088:A:H2     | 8:AB:2232:C:C2     | 2.38                     | 0.41              |
| 8:AB:2201:G:N2     | 8:AB:2223:G:H1'    | 2.35                     | 0.41              |
| 8:AB:2262:U:O4     | 8:AB:2279:G:C6     | 2.73                     | 0.41              |
| 8:AB:2270:A:H5''   | 29:AW:18:LYS:HA    | 2.00                     | 0.41              |
| 8:AB:2391:G:N2     | 8:AB:2424:C:C6     | 2.88                     | 0.41              |
| 8:AB:2446:G:C2     | 8:AB:2501:C:C4     | 3.08                     | 0.41              |
| 8:AB:2526:G:C4     | 8:AB:2527:C:C5     | 3.07                     | 0.41              |
| 8:AB:2560:A:C6     | 8:AB:2561:U:N3     | 2.88                     | 0.41              |
| 8:AB:2604:U:O2     | 8:AB:2605:U:C6     | 2.73                     | 0.41              |
| 8:AB:2615:U:O2     | 8:AB:2616:C:C6     | 2.73                     | 0.41              |
| 8:AB:2744:G:N2     | 8:AB:2761:A:C4     | 2.87                     | 0.41              |
| 8:AB:2897:U:C4     | 8:AB:2898:U:C4     | 3.08                     | 0.41              |
| 9:AC:84:PRO:C      | 9:AC:86:ARG:N      | 2.71                     | 0.41              |
| 9:AC:161:VAL:HG12  | 9:AC:173:LEU:CD2   | 2.50                     | 0.41              |
| 9:AC:167:ASP:CG    | 9:AC:172:THR:HG23  | 2.40                     | 0.41              |
| 9:AC:208:GLY:O     | 9:AC:212:TRP:N     | 2.53                     | 0.41              |
| 10:AD:81:GLU:O     | 10:AD:82:PHE:CB    | 2.68                     | 0.41              |
| 11:AE:60:TRP:HZ3   | 11:AE:67:ARG:HB2   | 1.80                     | 0.41              |
| 11:AE:158:PHE:CZ   | 11:AE:169:VAL:HG12 | 2.55                     | 0.41              |
| 12:AF:107:VAL:N    | 12:AF:108:PRO:CD   | 2.81                     | 0.41              |
| 16:AJ:41:LYS:HE2   | 16:AJ:50:THR:OG1   | 2.21                     | 0.41              |
| 18:AL:135:ILE:CG2  | 18:AL:138:ALA:HB3  | 2.47                     | 0.41              |
| 19:AM:24:THR:HG23  | 19:AM:24:THR:O     | 2.20                     | 0.41              |
| 20:AN:70:THR:O     | 20:AN:70:THR:CG2   | 2.68                     | 0.41              |
| 21:AO:40:ILE:HD13  | 21:AO:40:ILE:H     | 1.85                     | 0.41              |
| 22:AP:54:LEU:O     | 22:AP:55:HIS:O     | 2.38                     | 0.41              |
| 23:AQ:27:ARG:NH1   | 23:AQ:32:ARG:NH2   | 2.67                     | 0.41              |
| 23:AQ:108:LEU:HD23 | 23:AQ:111:LYS:HZ1  | 1.84                     | 0.41              |
| 27:AU:48:VAL:O     | 27:AU:53:GLN:CG    | 2.68                     | 0.41              |
| 31:AY:52:PHE:O     | 31:AY:53:MET:C     | 2.58                     | 0.41              |
| 33:BA:72:A:N1      | 33:BA:99:C:H1'     | 2.34                     | 0.41              |
| 33:BA:89:U:C5      | 33:BA:90:C:C5      | 3.08                     | 0.41              |
| 33:BA:109:A:N7     | 33:BA:326:G:N3     | 2.68                     | 0.41              |
| 33:BA:357:G:C2     | 33:BA:358:U:C4     | 3.07                     | 0.41              |
| 33:BA:446:G:C5'    | 33:BA:446:G:C8     | 3.02                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BA:697:U:C2     | 33:BA:798:U:H1'   | 2.55                     | 0.41              |
| 33:BA:723:U:H3'    | 33:BA:724:G:C5'   | 2.49                     | 0.41              |
| 33:BA:959:A:N3     | 33:BA:985:C:H1'   | 2.35                     | 0.41              |
| 33:BA:965:U:H6     | 33:BA:965:U:H2'   | 1.62                     | 0.41              |
| 33:BA:1002:G:C5    | 33:BA:1003:G:C8   | 3.08                     | 0.41              |
| 33:BA:1120:C:C2    | 33:BA:1154:G:C2   | 3.08                     | 0.41              |
| 33:BA:1284:C:C5    | 33:BA:1285:A:C8   | 3.08                     | 0.41              |
| 33:BA:1338:G:H2'   | 33:BA:1339:A:C8   | 2.54                     | 0.41              |
| 33:BA:1435:G:C6    | 33:BA:1436:U:O4   | 2.73                     | 0.41              |
| 35:BC:73:GLY:C     | 35:BC:75:VAL:H    | 2.23                     | 0.41              |
| 35:BC:89:VAL:C     | 35:BC:91:ALA:H    | 2.23                     | 0.41              |
| 35:BC:147:GLY:O    | 35:BC:201:ILE:HA  | 2.20                     | 0.41              |
| 41:BI:42:THR:OG1   | 41:BI:43:ALA:N    | 2.52                     | 0.41              |
| 43:BK:43:TRP:HA    | 43:BK:69:CYS:SG   | 2.59                     | 0.41              |
| 43:BK:123:PRO:C    | 43:BK:125:LYS:N   | 2.72                     | 0.41              |
| 44:BL:24:GLU:HB3   | 44:BL:26:CYS:HG   | 1.84                     | 0.41              |
| 44:BL:62:VAL:HG22  | 44:BL:63:THR:N    | 2.31                     | 0.41              |
| 44:BL:106:VAL:HG22 | 44:BL:116:TYR:HB3 | 2.00                     | 0.41              |
| 51:BS:74:ALA:HA    | 51:BS:75:PRO:HD3  | 1.81                     | 0.41              |
| 53:BU:46:ARG:C     | 53:BU:48:LYS:N    | 2.73                     | 0.41              |
| 2:C1:36:LYS:NZ     | 8:CB:2344:U:N3    | 2.61                     | 0.41              |
| 4:C3:6:VAL:O       | 4:C3:10:ALA:HB2   | 2.20                     | 0.41              |
| 7:CA:43:C:OP2      | 7:CA:43:C:H6      | 2.02                     | 0.41              |
| 8:CB:2:G:H2'       | 8:CB:3:U:C6       | 2.55                     | 0.41              |
| 8:CB:19:A:C6       | 8:CB:20:C:C4      | 3.08                     | 0.41              |
| 8:CB:58:G:C2       | 8:CB:70:G:C2      | 3.07                     | 0.41              |
| 8:CB:103:A:N7      | 8:CB:104:A:C2     | 2.87                     | 0.41              |
| 8:CB:248:G:N7      | 8:CB:250:G:H1'    | 2.35                     | 0.41              |
| 8:CB:284:U:O2      | 8:CB:356:G:O6     | 2.38                     | 0.41              |
| 8:CB:303:G:C2'     | 8:CB:304:U:O5'    | 2.69                     | 0.41              |
| 8:CB:321:U:O4      | 8:CB:341:C:H4'    | 2.20                     | 0.41              |
| 8:CB:324:A:H61     | 8:CB:338:G:C2'    | 2.33                     | 0.41              |
| 8:CB:341:C:H2'     | 8:CB:342:A:C8     | 2.55                     | 0.41              |
| 8:CB:398:C:O5'     | 32:CZ:49:ARG:NH2  | 2.53                     | 0.41              |
| 8:CB:538:A:C2      | 8:CB:539:G:C4     | 3.08                     | 0.41              |
| 8:CB:566:U:H4'     | 55:CB:5161:HOH:O  | 2.20                     | 0.41              |
| 8:CB:582:A:C4      | 8:CB:583:G:C8     | 3.08                     | 0.41              |
| 8:CB:592:A:C2      | 8:CB:593:U:C2     | 3.08                     | 0.41              |
| 8:CB:773:U:C4'     | 8:CB:774:G:OP2    | 2.67                     | 0.41              |
| 8:CB:784:G:H5''    | 9:CC:225:ASN:CG   | 2.38                     | 0.41              |
| 8:CB:814:C:C4      | 8:CB:815:C:C5     | 3.08                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:870:U:OP1     | 8:CB:870:U:H4'    | 2.20                     | 0.41              |
| 8:CB:1074:G:N2     | 8:CB:1075:C:C2    | 2.88                     | 0.41              |
| 8:CB:1268:A:C6     | 8:CB:1269:A:C4    | 3.08                     | 0.41              |
| 8:CB:1288:G:C8     | 8:CB:1327:A:C6    | 3.08                     | 0.41              |
| 8:CB:1420:A:C4     | 8:CB:2211:A:C8    | 3.08                     | 0.41              |
| 8:CB:1566:A:C2     | 9:CC:213:ARG:NE   | 2.88                     | 0.41              |
| 8:CB:1796:U:H2'    | 8:CB:1797:G:O4'   | 2.20                     | 0.41              |
| 8:CB:1941:C:H6     | 8:CB:1941:C:C5'   | 2.26                     | 0.41              |
| 8:CB:2100:G:N1     | 8:CB:2101:A:C4    | 2.88                     | 0.41              |
| 8:CB:2285:C:H3'    | 8:CB:2285:C:C6    | 2.54                     | 0.41              |
| 8:CB:2314:A:H5''   | 12:CF:32:LYS:NZ   | 2.35                     | 0.41              |
| 8:CB:2316:G:O5'    | 8:CB:2316:G:C8    | 2.73                     | 0.41              |
| 8:CB:2352:A:N1     | 29:CW:29:SER:HB3  | 2.34                     | 0.41              |
| 8:CB:2367:G:C8     | 8:CB:2367:G:O5'   | 2.71                     | 0.41              |
| 8:CB:2510:C:H2'    | 8:CB:2511:U:H5'   | 2.02                     | 0.41              |
| 8:CB:2648:G:C2     | 8:CB:2673:G:C4    | 3.08                     | 0.41              |
| 8:CB:2694:G:H5'    | 8:CB:2694:G:C8    | 2.54                     | 0.41              |
| 9:CC:83:ASP:CB     | 9:CC:90:ILE:HD12  | 2.47                     | 0.41              |
| 9:CC:134:ILE:HD13  | 9:CC:135:PRO:N    | 2.34                     | 0.41              |
| 9:CC:158:GLY:CA    | 9:CC:197:ALA:HB2  | 2.50                     | 0.41              |
| 10:CD:181:ASP:O    | 10:CD:184:ARG:HB2 | 2.20                     | 0.41              |
| 11:CE:88:ARG:HB3   | 11:CE:89:PRO:HD2  | 2.02                     | 0.41              |
| 12:CF:64:PRO:HA    | 12:CF:88:VAL:HG22 | 2.01                     | 0.41              |
| 13:CG:62:ALA:C     | 13:CG:64:ALA:N    | 2.72                     | 0.41              |
| 13:CG:112:VAL:HG12 | 13:CG:113:ASP:H   | 1.85                     | 0.41              |
| 15:CI:14:ALA:HB2   | 15:CI:51:GLY:H    | 1.85                     | 0.41              |
| 16:CJ:40:HIS:O     | 16:CJ:41:LYS:O    | 2.38                     | 0.41              |
| 16:CJ:68:LYS:HD3   | 16:CJ:72:LYS:HB2  | 2.02                     | 0.41              |
| 18:CL:14:LYS:O     | 18:CL:15:ALA:C    | 2.58                     | 0.41              |
| 19:CM:36:VAL:HB    | 28:CV:82:TYR:HD1  | 1.84                     | 0.41              |
| 20:CN:20:MET:HE3   | 20:CN:20:MET:HB3  | 1.79                     | 0.41              |
| 22:CP:14:GLN:HG2   | 22:CP:14:GLN:O    | 2.20                     | 0.41              |
| 22:CP:71:ARG:NH2   | 22:CP:102:ARG:CB  | 2.83                     | 0.41              |
| 23:CQ:56:PHE:O     | 23:CQ:60:TRP:CD2  | 2.73                     | 0.41              |
| 23:CQ:61:ILE:HG21  | 23:CQ:75:TYR:OH   | 2.20                     | 0.41              |
| 25:CS:24:ILE:HD12  | 25:CS:36:LEU:CD1  | 2.50                     | 0.41              |
| 25:CS:88:ARG:NH1   | 25:CS:88:ARG:HG3  | 2.34                     | 0.41              |
| 26:CT:55:VAL:HG12  | 26:CT:56:GLU:N    | 2.35                     | 0.41              |
| 27:CU:82:VAL:C     | 27:CU:92:VAL:HG21 | 2.40                     | 0.41              |
| 27:CU:85:ARG:C     | 27:CU:87:GLU:H    | 2.23                     | 0.41              |
| 30:CX:27:ASN:O     | 30:CX:29:ARG:N    | 2.53                     | 0.41              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 32:CZ:25:ARG:CG    | 32:CZ:26:SER:N   | 2.83                     | 0.41              |
| 33:DA:34:C:H2'     | 33:DA:35:G:H8    | 1.75                     | 0.41              |
| 33:DA:146:G:O2'    | 33:DA:147:G:H5'  | 2.19                     | 0.41              |
| 33:DA:204:G:H21    | 33:DA:466:A:N6   | 2.18                     | 0.41              |
| 33:DA:239:U:O2     | 33:DA:239:U:C2'  | 2.68                     | 0.41              |
| 33:DA:363:A:N6     | 33:DA:364:A:N1   | 2.67                     | 0.41              |
| 33:DA:493:A:H5'    | 33:DA:494:G:OP2  | 2.20                     | 0.41              |
| 33:DA:501:C:C6     | 33:DA:501:C:C3'  | 3.03                     | 0.41              |
| 33:DA:586:C:H2'    | 33:DA:587:G:O5'  | 2.20                     | 0.41              |
| 33:DA:592:G:C2     | 33:DA:648:A:N3   | 2.88                     | 0.41              |
| 33:DA:604:G:H5''   | 33:DA:604:G:H8   | 1.83                     | 0.41              |
| 33:DA:711:G:H5''   | 33:DA:711:G:C8   | 2.53                     | 0.41              |
| 33:DA:975:A:H4'    | 33:DA:976:G:O5'  | 2.19                     | 0.41              |
| 33:DA:1068:G:O6    | 33:DA:1108:G:C4  | 2.73                     | 0.41              |
| 33:DA:1224:U:O2'   | 33:DA:1225:A:OP1 | 2.30                     | 0.41              |
| 33:DA:1287:A:H61   | 33:DA:1371:G:C1' | 2.31                     | 0.41              |
| 33:DA:1293:C:O5'   | 33:DA:1293:C:H6  | 2.02                     | 0.41              |
| 33:DA:1300:G:N2    | 33:DA:1335:U:O4' | 2.53                     | 0.41              |
| 33:DA:1419:G:C2    | 33:DA:1420:U:C2  | 3.08                     | 0.41              |
| 33:DA:1421:G:O6    | 33:DA:1480:A:N6  | 2.53                     | 0.41              |
| 33:DA:1465:A:C8    | 33:DA:1466:C:H5  | 2.38                     | 0.41              |
| 33:DA:1488:G:N1    | 33:DA:1489:G:C4  | 2.88                     | 0.41              |
| 34:DB:23:ASN:O     | 34:DB:24:PRO:C   | 2.58                     | 0.41              |
| 34:DB:45:THR:O     | 34:DB:49:PHE:CE1 | 2.73                     | 0.41              |
| 34:DB:134:LEU:HD23 | 34:DB:134:LEU:O  | 2.20                     | 0.41              |
| 37:DE:94:PHE:CD1   | 37:DE:94:PHE:O   | 2.73                     | 0.41              |
| 38:DF:29:ILE:HG13  | 38:DF:29:ILE:H   | 1.71                     | 0.41              |
| 48:DP:3:THR:HA     | 48:DP:66:THR:H   | 1.85                     | 0.41              |
| 3:A2:12:ARG:HG2    | 8:AB:686:U:N3    | 2.32                     | 0.41              |
| 7:AA:61:G:H2'      | 7:AA:62:C:H6     | 1.85                     | 0.41              |
| 7:AA:78:A:C6       | 7:AA:99:A:C8     | 3.08                     | 0.41              |
| 8:AB:61:C:H1'      | 30:AX:41:HIS:NE2 | 2.32                     | 0.41              |
| 8:AB:78:U:O5'      | 8:AB:78:U:H6     | 2.02                     | 0.41              |
| 8:AB:100:U:O2'     | 8:AB:101:A:O5'   | 2.38                     | 0.41              |
| 8:AB:139:U:OP2     | 8:AB:140:C:N3    | 2.53                     | 0.41              |
| 8:AB:153:U:C6      | 8:AB:153:U:C3'   | 3.02                     | 0.41              |
| 8:AB:194:G:N3      | 8:AB:195:A:C8    | 2.88                     | 0.41              |
| 8:AB:201:C:C5      | 8:AB:202:U:C6    | 3.07                     | 0.41              |
| 8:AB:260:G:O6      | 8:AB:261:G:C5    | 2.73                     | 0.41              |
| 8:AB:266:G:O6      | 8:AB:267:C:C4    | 2.74                     | 0.41              |
| 8:AB:285:G:C5      | 8:AB:286:U:C5    | 3.08                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AB:326:G:H2'     | 8:AB:327:G:H8     | 1.86                     | 0.41              |
| 8:AB:393:C:H2'     | 8:AB:394:C:H6     | 1.84                     | 0.41              |
| 8:AB:439:A:C8      | 8:AB:439:A:H3'    | 2.54                     | 0.41              |
| 8:AB:675:A:C5      | 8:AB:676:A:C6     | 3.07                     | 0.41              |
| 8:AB:838:C:N3      | 8:AB:941:A:C6     | 2.88                     | 0.41              |
| 8:AB:982:C:H6      | 8:AB:2029:G:OP1   | 2.04                     | 0.41              |
| 8:AB:1191:G:C8     | 8:AB:1191:G:C3'   | 3.02                     | 0.41              |
| 8:AB:1194:A:H5''   | 8:AB:1194:A:H8    | 1.85                     | 0.41              |
| 8:AB:1218:G:C5     | 8:AB:1232:G:O6    | 2.73                     | 0.41              |
| 8:AB:1247:A:N7     | 8:AB:1249:U:C5    | 2.87                     | 0.41              |
| 8:AB:1291:C:C6     | 8:AB:1291:C:C4'   | 3.03                     | 0.41              |
| 8:AB:1306:C:H5''   | 8:AB:1606:C:N4    | 2.35                     | 0.41              |
| 8:AB:1351:C:N3     | 8:AB:1381:G:O6    | 2.53                     | 0.41              |
| 8:AB:1434:A:N6     | 8:AB:1558:C:H42   | 2.17                     | 0.41              |
| 8:AB:1459:G:H3'    | 8:AB:1459:G:C8    | 2.55                     | 0.41              |
| 8:AB:1632:A:O2'    | 8:AB:1633:G:O4'   | 2.38                     | 0.41              |
| 8:AB:1664:A:O5'    | 8:AB:1664:A:C8    | 2.74                     | 0.41              |
| 8:AB:1692:U:H3'    | 8:AB:1694:C:H41   | 1.85                     | 0.41              |
| 8:AB:1725:U:H2'    | 8:AB:1726:C:C6    | 2.55                     | 0.41              |
| 8:AB:1791:A:C2'    | 8:AB:1792:G:O5'   | 2.68                     | 0.41              |
| 8:AB:1866:A:N7     | 8:AB:1876:A:N6    | 2.68                     | 0.41              |
| 8:AB:1947:C:N3     | 8:AB:1948:G:C8    | 2.88                     | 0.41              |
| 8:AB:1959:G:C8     | 8:AB:1959:G:C3'   | 3.03                     | 0.41              |
| 8:AB:1973:G:C2     | 8:AB:1974:C:C2    | 3.08                     | 0.41              |
| 8:AB:1974:C:H3'    | 8:AB:1974:C:C6    | 2.55                     | 0.41              |
| 8:AB:2252:G:H2'    | 8:AB:2253:G:H5'   | 2.02                     | 0.41              |
| 8:AB:2319:G:C8     | 8:AB:2319:G:O5'   | 2.73                     | 0.41              |
| 8:AB:2677:G:C6     | 8:AB:2731:G:N1    | 2.88                     | 0.41              |
| 8:AB:2727:A:C5     | 8:AB:2728:U:C4    | 3.08                     | 0.41              |
| 8:AB:2838:G:OP1    | 20:AN:5:LYS:NZ    | 2.53                     | 0.41              |
| 9:AC:140:VAL:HB    | 9:AC:141:HIS:H    | 1.52                     | 0.41              |
| 9:AC:206:LYS:O     | 9:AC:207:ALA:C    | 2.58                     | 0.41              |
| 9:AC:224:MET:HG2   | 9:AC:233:GLY:H    | 1.84                     | 0.41              |
| 10:AD:21:SER:O     | 10:AD:23:PRO:HD3  | 2.21                     | 0.41              |
| 10:AD:86:GLU:CG    | 10:AD:87:GLY:N    | 2.79                     | 0.41              |
| 11:AE:17:THR:HG1   | 11:AE:20:GLY:HA2  | 1.85                     | 0.41              |
| 12:AF:65:LEU:N     | 12:AF:86:CYS:O    | 2.52                     | 0.41              |
| 13:AG:10:VAL:CG1   | 13:AG:47:ASN:HA   | 2.50                     | 0.41              |
| 13:AG:106:LEU:N    | 13:AG:106:LEU:CD1 | 2.82                     | 0.41              |
| 13:AG:132:LEU:CD2  | 13:AG:144:ALA:HB2 | 2.50                     | 0.41              |
| 14:AH:104:THR:HG23 | 14:AH:104:THR:O   | 2.20                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AI:130:GLY:C   | 15:AI:132:ALA:N   | 2.74                     | 0.41              |
| 19:AM:70:ASP:O    | 19:AM:71:LYS:CB   | 2.66                     | 0.41              |
| 21:AO:8:ILE:C     | 21:AO:10:ARG:H    | 2.22                     | 0.41              |
| 21:AO:114:GLY:O   | 21:AO:115:LEU:O   | 2.39                     | 0.41              |
| 22:AP:15:ASP:OD1  | 22:AP:15:ASP:N    | 2.52                     | 0.41              |
| 24:AR:2:TYR:CE1   | 24:AR:46:GLU:CG   | 3.02                     | 0.41              |
| 24:AR:14:VAL:O    | 24:AR:15:SER:O    | 2.38                     | 0.41              |
| 24:AR:84:ARG:HH12 | 24:AR:86:GLN:HG2  | 1.85                     | 0.41              |
| 26:AT:7:LEU:O     | 26:AT:7:LEU:CD1   | 2.58                     | 0.41              |
| 29:AW:16:GLU:N    | 29:AW:18:LYS:NZ   | 2.68                     | 0.41              |
| 33:BA:120:A:N6    | 33:BA:122:G:N1    | 2.68                     | 0.41              |
| 33:BA:224:U:H3'   | 33:BA:224:U:C6    | 2.55                     | 0.41              |
| 33:BA:389:A:N1    | 33:BA:390:U:H1'   | 2.34                     | 0.41              |
| 33:BA:426:U:H2'   | 33:BA:427:U:H6    | 1.85                     | 0.41              |
| 33:BA:521:G:N1    | 33:BA:522:C:C5    | 2.88                     | 0.41              |
| 33:BA:557:G:C2    | 33:BA:558:G:N2    | 2.89                     | 0.41              |
| 33:BA:636:U:C6    | 33:BA:636:U:C3'   | 3.02                     | 0.41              |
| 33:BA:717:U:C2'   | 33:BA:734:G:H8    | 2.33                     | 0.41              |
| 33:BA:764:C:C4    | 33:BA:812:G:N1    | 2.87                     | 0.41              |
| 33:BA:832:G:N3    | 33:BA:855:U:C2    | 2.89                     | 0.41              |
| 33:BA:860:A:C8    | 33:BA:861:G:C8    | 3.08                     | 0.41              |
| 33:BA:935:A:N6    | 39:BG:2:ARG:HD2   | 2.27                     | 0.41              |
| 33:BA:1082:A:H2'  | 33:BA:1083:U:O4'  | 2.19                     | 0.41              |
| 33:BA:1087:G:C2   | 33:BA:1099:G:C2   | 3.07                     | 0.41              |
| 33:BA:1206:G:H2'  | 33:BA:1207:G:C8   | 2.54                     | 0.41              |
| 33:BA:1238:A:N6   | 33:BA:1239:A:N6   | 2.63                     | 0.41              |
| 33:BA:1356:G:N1   | 33:BA:1357:A:C6   | 2.88                     | 0.41              |
| 33:BA:1412:C:C2   | 33:BA:1413:A:C8   | 3.08                     | 0.41              |
| 33:BA:1426:G:C6   | 33:BA:1427:C:C4   | 3.08                     | 0.41              |
| 33:BA:1502:A:C8   | 33:BA:1505:G:N2   | 2.77                     | 0.41              |
| 33:BA:1525:G:H2'  | 33:BA:1526:G:O5'  | 2.21                     | 0.41              |
| 35:BC:63:ILE:HG13 | 35:BC:98:ALA:HB2  | 2.01                     | 0.41              |
| 36:BD:22:SER:O    | 36:BD:24:VAL:HG22 | 2.20                     | 0.41              |
| 36:BD:75:TYR:CD1  | 36:BD:75:TYR:C    | 2.93                     | 0.41              |
| 40:BH:6:ILE:HD13  | 40:BH:6:ILE:N     | 2.35                     | 0.41              |
| 41:BI:20:ILE:HA   | 41:BI:61:ASP:O    | 2.20                     | 0.41              |
| 42:BJ:10:LEU:HB2  | 42:BJ:72:ARG:O    | 2.20                     | 0.41              |
| 49:BQ:24:ILE:HG22 | 49:BQ:25:GLU:O    | 2.20                     | 0.41              |
| 52:BT:69:ASN:O    | 52:BT:73:ARG:N    | 2.49                     | 0.41              |
| 2:C1:40:PRO:HB2   | 2:C1:42:VAL:CG2   | 2.50                     | 0.41              |
| 3:C2:36:ALA:O     | 3:C2:38:GLY:N     | 2.53                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 4:C3:58:ILE:CG2  | 18:CL:51:GLU:HG3 | 2.48                     | 0.41              |
| 5:C4:8:LYS:H     | 5:C4:8:LYS:HG2   | 1.57                     | 0.41              |
| 5:C4:26:ILE:HD13 | 5:C4:33:HIS:C    | 2.40                     | 0.41              |
| 7:CA:46:A:H4'    | 21:CO:1:MET:CB   | 2.50                     | 0.41              |
| 8:CB:201:C:C5    | 8:CB:202:U:C6    | 3.08                     | 0.41              |
| 8:CB:387:U:C6    | 8:CB:388:G:C5    | 3.09                     | 0.41              |
| 8:CB:559:G:H2'   | 8:CB:560:C:C6    | 2.55                     | 0.41              |
| 8:CB:632:A:H2'   | 8:CB:633:A:C8    | 2.55                     | 0.41              |
| 8:CB:633:A:C8    | 8:CB:633:A:C3'   | 3.03                     | 0.41              |
| 8:CB:647:G:H5''  | 8:CB:647:G:C8    | 2.51                     | 0.41              |
| 8:CB:727:A:H2'   | 8:CB:728:G:C8    | 2.54                     | 0.41              |
| 8:CB:762:U:H4'   | 8:CB:763:G:C5'   | 2.50                     | 0.41              |
| 8:CB:1274:A:H2'  | 8:CB:1275:A:C5'  | 2.50                     | 0.41              |
| 8:CB:1341:G:C6   | 26:CT:84:TYR:HE2 | 2.38                     | 0.41              |
| 8:CB:1364:G:N1   | 8:CB:1366:A:H5'' | 2.35                     | 0.41              |
| 8:CB:1405:U:C2   | 8:CB:1406:U:C5   | 3.08                     | 0.41              |
| 8:CB:1613:G:H3'  | 8:CB:1614:A:H5'  | 2.01                     | 0.41              |
| 8:CB:1628:G:C5   | 8:CB:1629:U:C5   | 3.08                     | 0.41              |
| 8:CB:1654:A:OP2  | 20:CN:3:HIS:CE1  | 2.73                     | 0.41              |
| 8:CB:1687:G:N3   | 8:CB:1688:U:C5   | 2.88                     | 0.41              |
| 8:CB:1786:A:N1   | 8:CB:1938:A:N3   | 2.68                     | 0.41              |
| 8:CB:1791:A:H2'  | 8:CB:1792:G:O4'  | 2.20                     | 0.41              |
| 8:CB:1801:A:C5   | 8:CB:2203:U:C5   | 3.08                     | 0.41              |
| 8:CB:1891:G:O2'  | 8:CB:2235:G:O2'  | 2.33                     | 0.41              |
| 8:CB:1945:G:C6   | 8:CB:1946:U:C4   | 3.09                     | 0.41              |
| 8:CB:2021:C:H3'  | 8:CB:2022:U:H5'  | 2.01                     | 0.41              |
| 8:CB:2076:U:H3'  | 8:CB:2076:U:O2   | 2.20                     | 0.41              |
| 8:CB:2239:G:O5'  | 8:CB:2239:G:C8   | 2.70                     | 0.41              |
| 8:CB:2259:U:C6   | 8:CB:2427:C:C4   | 3.08                     | 0.41              |
| 8:CB:2376:A:H1'  | 21:CO:99:TYR:OH  | 2.20                     | 0.41              |
| 8:CB:2405:G:C2   | 8:CB:2413:G:O6   | 2.73                     | 0.41              |
| 8:CB:2522:U:H2'  | 8:CB:2523:G:H5'  | 2.01                     | 0.41              |
| 8:CB:2592:G:N1   | 8:CB:2593:U:N3   | 2.69                     | 0.41              |
| 8:CB:2677:G:C5   | 8:CB:2678:C:C5   | 3.08                     | 0.41              |
| 8:CB:2753:A:N1   | 8:CB:2754:U:C4   | 2.88                     | 0.41              |
| 8:CB:2813:A:C6   | 8:CB:2814:A:C6   | 3.08                     | 0.41              |
| 8:CB:2880:C:N3   | 8:CB:2881:U:C4   | 2.88                     | 0.41              |
| 9:CC:117:SER:HB3 | 9:CC:127:ASN:ND2 | 2.36                     | 0.41              |
| 10:CD:14:ILE:CG2 | 22:CP:79:VAL:HB  | 2.49                     | 0.41              |
| 10:CD:62:LYS:H   | 10:CD:62:LYS:NZ  | 2.08                     | 0.41              |
| 10:CD:139:SER:O  | 10:CD:140:HIS:O  | 2.37                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:CF:136:ILE:O    | 12:CF:138:PRO:HD3  | 2.20                     | 0.41              |
| 12:CF:169:LEU:HD23 | 12:CF:169:LEU:HA   | 1.79                     | 0.41              |
| 14:CH:95:GLY:CA    | 14:CH:99:ILE:HG23  | 2.50                     | 0.41              |
| 14:CH:119:ASN:HB3  | 14:CH:121:VAL:HG13 | 2.02                     | 0.41              |
| 15:CI:36:GLU:HB3   | 15:CI:66:PHE:CZ    | 2.55                     | 0.41              |
| 17:CK:19:VAL:HB    | 17:CK:41:ILE:CD1   | 2.32                     | 0.41              |
| 19:CM:90:GLU:HA    | 19:CM:91:TYR:CD1   | 2.55                     | 0.41              |
| 20:CN:28:LEU:HD23  | 20:CN:48:VAL:HG21  | 2.01                     | 0.41              |
| 21:CO:56:LYS:CB    | 21:CO:62:LEU:HG    | 2.37                     | 0.41              |
| 22:CP:92:ARG:HG2   | 22:CP:110:LYS:O    | 2.20                     | 0.41              |
| 25:CS:29:VAL:O     | 25:CS:29:VAL:HG12  | 2.20                     | 0.41              |
| 25:CS:85:ILE:CD1   | 25:CS:86:MET:N     | 2.83                     | 0.41              |
| 31:CY:7:THR:H      | 31:CY:7:THR:HG1    | 1.63                     | 0.41              |
| 33:DA:89:U:H2'     | 33:DA:90:C:H6      | 1.84                     | 0.41              |
| 33:DA:198:G:H8     | 33:DA:198:G:C5'    | 2.33                     | 0.41              |
| 33:DA:410:G:N1     | 33:DA:429:U:O2     | 2.53                     | 0.41              |
| 33:DA:613:C:O5'    | 33:DA:613:C:H6     | 2.02                     | 0.41              |
| 33:DA:640:A:C6     | 33:DA:641:U:C4     | 3.07                     | 0.41              |
| 33:DA:719:C:H5     | 33:DA:720:C:C2     | 2.38                     | 0.41              |
| 33:DA:838:G:H8     | 33:DA:838:G:O5'    | 2.02                     | 0.41              |
| 33:DA:908:A:H2     | 33:DA:909:A:C4     | 2.28                     | 0.41              |
| 33:DA:912:C:H2'    | 33:DA:913:A:H5'    | 2.02                     | 0.41              |
| 33:DA:950:U:O2'    | 33:DA:971:G:C8     | 2.72                     | 0.41              |
| 33:DA:951:G:C6     | 33:DA:1231:G:C6    | 3.07                     | 0.41              |
| 33:DA:978:A:C6     | 33:DA:1318:A:C6    | 3.08                     | 0.41              |
| 33:DA:979:C:OP2    | 33:DA:981:U:C4     | 2.73                     | 0.41              |
| 33:DA:1019:A:C2    | 33:DA:1020:G:C5    | 3.08                     | 0.41              |
| 33:DA:1237:C:H5''  | 33:DA:1238:A:C8    | 2.56                     | 0.41              |
| 33:DA:1253:G:N2    | 33:DA:1355:G:H4'   | 2.34                     | 0.41              |
| 33:DA:1311:A:N1    | 33:DA:1327:C:N3    | 2.68                     | 0.41              |
| 33:DA:1375:A:C2    | 33:DA:1376:U:C2    | 3.09                     | 0.41              |
| 33:DA:1397:C:H4'   | 33:DA:1398:A:OP2   | 2.18                     | 0.41              |
| 33:DA:1415:G:H21   | 33:DA:1416:G:H1'   | 1.82                     | 0.41              |
| 33:DA:1507:A:H2'   | 33:DA:1508:A:C8    | 2.55                     | 0.41              |
| 34:DB:98:GLY:HA2   | 34:DB:101:THR:CG2  | 2.49                     | 0.41              |
| 34:DB:170:ILE:O    | 34:DB:174:GLU:HB2  | 2.20                     | 0.41              |
| 35:DC:106:ARG:CD   | 35:DC:106:ARG:N    | 2.83                     | 0.41              |
| 35:DC:173:PRO:HB2  | 35:DC:176:THR:HG23 | 2.02                     | 0.41              |
| 37:DE:35:LEU:O     | 37:DE:36:THR:HB    | 2.19                     | 0.41              |
| 37:DE:64:GLU:C     | 37:DE:66:ALA:H     | 2.23                     | 0.41              |
| 38:DF:3:HIS:CD2    | 38:DF:3:HIS:H      | 2.38                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:DF:60:VAL:CG1  | 38:DF:61:LEU:H    | 2.06                     | 0.41              |
| 38:DF:67:PRO:C    | 38:DF:69:GLU:H    | 2.22                     | 0.41              |
| 40:DH:48:PHE:CD2  | 40:DH:48:PHE:C    | 2.94                     | 0.41              |
| 42:DJ:84:VAL:HA   | 42:DJ:88:MET:HE3  | 2.02                     | 0.41              |
| 44:DL:43:LYS:HB2  | 44:DL:43:LYS:HE3  | 1.80                     | 0.41              |
| 44:DL:82:ARG:HE   | 44:DL:82:ARG:HB3  | 1.24                     | 0.41              |
| 45:DM:68:LEU:HD22 | 45:DM:69:ARG:HD3  | 2.01                     | 0.41              |
| 45:DM:104:ASN:H   | 45:DM:106:ARG:NH1 | 2.19                     | 0.41              |
| 48:DP:70:ARG:O    | 48:DP:73:ALA:N    | 2.53                     | 0.41              |
| 49:DQ:45:VAL:HG22 | 49:DQ:72:TRP:CB   | 2.49                     | 0.41              |
| 50:DR:34:GLU:HB2  | 53:DU:18:PHE:CE1  | 2.55                     | 0.41              |
| 51:DS:47:THR:HG23 | 51:DS:60:PHE:CD2  | 2.55                     | 0.41              |
| 51:DS:52:ASN:HB2  | 51:DS:53:GLY:H    | 1.59                     | 0.41              |
| 53:DU:41:THR:O    | 53:DU:45:LYS:HB2  | 2.21                     | 0.41              |
| 1:A0:36:LYS:C     | 1:A0:37:HIS:O     | 2.59                     | 0.41              |
| 4:A3:31:ILE:O     | 4:A3:32:LEU:HB2   | 2.20                     | 0.41              |
| 4:A3:61:LEU:HD22  | 4:A3:63:TYR:CZ    | 2.54                     | 0.41              |
| 7:AA:38:C:C4'     | 21:AO:100:HIS:NE2 | 2.83                     | 0.41              |
| 8:AB:4:U:N3       | 8:AB:2900:A:C2    | 2.89                     | 0.41              |
| 8:AB:36:G:C6      | 8:AB:445:C:N4     | 2.88                     | 0.41              |
| 8:AB:58:G:C6      | 8:AB:59:U:C4      | 3.07                     | 0.41              |
| 8:AB:80:G:C2'     | 8:AB:294:A:N1     | 2.83                     | 0.41              |
| 8:AB:187:G:C2     | 8:AB:210:C:C2     | 3.08                     | 0.41              |
| 8:AB:197:A:H2     | 8:AB:2434:A:N6    | 2.18                     | 0.41              |
| 8:AB:201:C:C2'    | 8:AB:202:U:H5'    | 2.50                     | 0.41              |
| 8:AB:244:A:C2     | 8:AB:245:G:H1'    | 2.54                     | 0.41              |
| 8:AB:323:C:H3'    | 8:AB:323:C:OP2    | 2.20                     | 0.41              |
| 8:AB:375:G:O6     | 8:AB:400:G:C2     | 2.73                     | 0.41              |
| 8:AB:402:A:N7     | 8:AB:403:U:C6     | 2.88                     | 0.41              |
| 8:AB:410:G:H2'    | 8:AB:2407:A:N7    | 2.35                     | 0.41              |
| 8:AB:451:U:OP1    | 11:AE:49:ARG:HD3  | 2.19                     | 0.41              |
| 8:AB:482:A:C8     | 8:AB:506:G:C2     | 3.08                     | 0.41              |
| 8:AB:510:C:C4     | 8:AB:511:U:C5     | 3.08                     | 0.41              |
| 8:AB:579:G:N2     | 8:AB:1262:A:C4    | 2.88                     | 0.41              |
| 8:AB:606:U:H6     | 8:AB:606:U:H3'    | 1.85                     | 0.41              |
| 8:AB:626:A:C6     | 18:AL:79:LEU:HD13 | 2.55                     | 0.41              |
| 8:AB:824:U:C5     | 8:AB:825:A:N7     | 2.87                     | 0.41              |
| 8:AB:944:C:H6     | 8:AB:944:C:H5''   | 1.85                     | 0.41              |
| 8:AB:992:C:OP1    | 24:AR:79:ARG:NH2  | 2.54                     | 0.41              |
| 8:AB:1048:A:H2'   | 8:AB:1049:C:C6    | 2.48                     | 0.41              |
| 8:AB:1095:A:C5    | 8:AB:1096:A:N6    | 2.87                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:1131:G:C8    | 16:AJ:77:HIS:CE1   | 3.09                     | 0.41              |
| 8:AB:1153:C:H2'   | 8:AB:1154:G:O4'    | 2.20                     | 0.41              |
| 8:AB:1223:G:O6    | 8:AB:1227:G:C6     | 2.73                     | 0.41              |
| 8:AB:1264:A:H8    | 8:AB:1264:A:O5'    | 2.02                     | 0.41              |
| 8:AB:1286:A:N6    | 8:AB:1289:C:N3     | 2.69                     | 0.41              |
| 8:AB:1310:G:N2    | 8:AB:1313:U:C4     | 2.88                     | 0.41              |
| 8:AB:1359:A:N7    | 8:AB:1373:A:N1     | 2.69                     | 0.41              |
| 8:AB:1368:G:O2'   | 8:AB:1369:G:H5'    | 2.21                     | 0.41              |
| 8:AB:1531:C:H2'   | 8:AB:1532:A:C8     | 2.51                     | 0.41              |
| 8:AB:1701:A:N3    | 33:BA:1474:U:H4'   | 2.34                     | 0.41              |
| 8:AB:1734:G:H2'   | 8:AB:1735:A:H8     | 1.85                     | 0.41              |
| 8:AB:1858:A:H61   | 8:AB:1884:G:H1'    | 1.85                     | 0.41              |
| 8:AB:1973:G:C6    | 8:AB:1974:C:N3     | 2.89                     | 0.41              |
| 8:AB:2009:A:C8    | 8:AB:2009:A:C3'    | 3.03                     | 0.41              |
| 8:AB:2044:C:N4    | 8:AB:2045:C:N4     | 2.64                     | 0.41              |
| 8:AB:2179:C:C2'   | 8:AB:2180:U:H6     | 2.31                     | 0.41              |
| 8:AB:2270:A:C8    | 8:AB:2270:A:H3'    | 2.54                     | 0.41              |
| 8:AB:2604:U:N3    | 8:AB:2605:U:C5     | 2.88                     | 0.41              |
| 9:AC:9:SER:HA     | 9:AC:10:PRO:HD3    | 1.64                     | 0.41              |
| 9:AC:124:LYS:HZ1  | 9:AC:125:PRO:HD2   | 1.85                     | 0.41              |
| 9:AC:183:VAL:O    | 9:AC:184:GLU:C     | 2.58                     | 0.41              |
| 9:AC:198:GLU:O    | 9:AC:198:GLU:HG3   | 2.20                     | 0.41              |
| 10:AD:180:VAL:O   | 10:AD:181:ASP:C    | 2.59                     | 0.41              |
| 11:AE:193:VAL:O   | 11:AE:199:MET:CA   | 2.57                     | 0.41              |
| 12:AF:28:PRO:HA   | 12:AF:158:THR:OG1  | 2.20                     | 0.41              |
| 12:AF:100:GLU:H   | 12:AF:100:GLU:HG3  | 1.64                     | 0.41              |
| 12:AF:113:PHE:HE1 | 12:AF:116:LEU:HD21 | 1.85                     | 0.41              |
| 16:AJ:102:GLU:O   | 16:AJ:103:ILE:HD13 | 2.21                     | 0.41              |
| 18:AL:110:VAL:C   | 18:AL:111:ILE:CG2  | 2.89                     | 0.41              |
| 19:AM:12:MET:CE   | 19:AM:12:MET:HA    | 2.45                     | 0.41              |
| 19:AM:36:VAL:CG1  | 19:AM:125:PRO:HD3  | 2.50                     | 0.41              |
| 21:AO:61:GLN:O    | 21:AO:62:LEU:CB    | 2.67                     | 0.41              |
| 24:AR:5:PHE:O     | 24:AR:12:HIS:ND1   | 2.53                     | 0.41              |
| 24:AR:90:ARG:CZ   | 24:AR:92:TRP:CD1   | 3.03                     | 0.41              |
| 25:AS:39:THR:O    | 25:AS:39:THR:HG23  | 2.20                     | 0.41              |
| 26:AT:93:LEU:HD13 | 26:AT:93:LEU:HA    | 1.89                     | 0.41              |
| 27:AU:77:GLY:O    | 27:AU:78:LYS:HB2   | 2.20                     | 0.41              |
| 28:AV:2:PHE:HB2   | 28:AV:61:LEU:HD22  | 2.02                     | 0.41              |
| 33:BA:148:G:H2'   | 33:BA:149:A:O5'    | 2.20                     | 0.41              |
| 33:BA:233:C:C6    | 33:BA:233:C:C3'    | 3.03                     | 0.41              |
| 33:BA:233:C:H2'   | 33:BA:234:C:H5'    | 2.02                     | 0.41              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 33:BA:577:G:C4    | 33:BA:578:C:C6   | 3.08                     | 0.41              |
| 33:BA:621:A:O2'   | 33:BA:622:A:H5'  | 2.20                     | 0.41              |
| 33:BA:780:A:O2'   | 33:BA:781:A:H5'' | 2.19                     | 0.41              |
| 33:BA:843:U:H5''  | 33:BA:844:G:C8   | 2.56                     | 0.41              |
| 33:BA:851:G:C2    | 33:BA:852:G:C5   | 3.08                     | 0.41              |
| 33:BA:888:G:H8    | 33:BA:888:G:C5'  | 2.34                     | 0.41              |
| 33:BA:927:G:OP2   | 33:BA:1503:A:N7  | 2.54                     | 0.41              |
| 33:BA:1002:G:C2'  | 33:BA:1003:G:H5' | 2.51                     | 0.41              |
| 33:BA:1133:G:N2   | 33:BA:1142:G:C4  | 2.88                     | 0.41              |
| 33:BA:1162:C:C6   | 33:BA:1162:C:C3' | 3.03                     | 0.41              |
| 33:BA:1465:A:H2'  | 33:BA:1466:C:O5' | 2.20                     | 0.41              |
| 33:BA:1476:A:H3'  | 33:BA:1476:A:C8  | 2.54                     | 0.41              |
| 33:BA:1499:A:C8   | 33:BA:1499:A:C5' | 2.94                     | 0.41              |
| 34:BB:23:ASN:HD21 | 34:BB:25:LYS:HG3 | 1.86                     | 0.41              |
| 34:BB:77:GLU:C    | 34:BB:79:VAL:H   | 2.24                     | 0.41              |
| 36:BD:26:ALA:HA   | 36:BD:30:LYS:HE2 | 2.02                     | 0.41              |
| 36:BD:96:ARG:O    | 36:BD:100:VAL:N  | 2.43                     | 0.41              |
| 38:BF:14:GLN:C    | 38:BF:16:GLU:N   | 2.74                     | 0.41              |
| 40:BH:62:LEU:HD12 | 40:BH:62:LEU:N   | 2.35                     | 0.41              |
| 41:BI:56:MET:CA   | 41:BI:59:LYS:HZ2 | 2.33                     | 0.41              |
| 42:BJ:53:ILE:HG13 | 42:BJ:62:ARG:C   | 2.41                     | 0.41              |
| 44:BL:4:ASN:OD1   | 49:BQ:35:LYS:HE3 | 2.21                     | 0.41              |
| 45:BM:77:LYS:HD3  | 45:BM:77:LYS:O   | 2.21                     | 0.41              |
| 45:BM:100:ARG:HD3 | 45:BM:100:ARG:O  | 2.21                     | 0.41              |
| 2:C1:37:LYS:CB    | 8:CB:2344:U:H3'  | 2.50                     | 0.41              |
| 4:C3:46:LYS:HD2   | 4:C3:47:ALA:C    | 2.39                     | 0.41              |
| 7:CA:113:C:C5     | 7:CA:114:C:C5    | 3.06                     | 0.41              |
| 7:CA:115:A:H2'    | 7:CA:116:G:O4'   | 2.20                     | 0.41              |
| 8:CB:23:G:N1      | 8:CB:518:G:C6    | 2.88                     | 0.41              |
| 8:CB:76:C:N3      | 8:CB:111:A:H2    | 2.13                     | 0.41              |
| 8:CB:77:G:N3      | 8:CB:110:G:C2    | 2.88                     | 0.41              |
| 8:CB:130:C:C2'    | 8:CB:131:A:O5'   | 2.68                     | 0.41              |
| 8:CB:221:A:C2     | 8:CB:233:A:N9    | 2.88                     | 0.41              |
| 8:CB:404:A:N1     | 8:CB:421:C:O2    | 2.53                     | 0.41              |
| 8:CB:408:G:H2'    | 8:CB:409:G:O5'   | 2.20                     | 0.41              |
| 8:CB:419:U:H2'    | 8:CB:420:C:H6    | 1.81                     | 0.41              |
| 8:CB:625:G:N2     | 8:CB:626:A:C4    | 2.88                     | 0.41              |
| 8:CB:663:G:O6     | 8:CB:664:G:C6    | 2.73                     | 0.41              |
| 8:CB:748:G:C5     | 8:CB:750:A:N7    | 2.88                     | 0.41              |
| 8:CB:802:A:C6     | 8:CB:803:U:C4    | 3.09                     | 0.41              |
| 8:CB:836:G:C4     | 8:CB:837:C:C5    | 3.09                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:862:G:C8     | 8:CB:863:A:N7     | 2.89                     | 0.41              |
| 8:CB:1006:C:C6    | 8:CB:1138:G:N2    | 2.89                     | 0.41              |
| 8:CB:1027:A:C6    | 8:CB:1126:A:C4    | 3.08                     | 0.41              |
| 8:CB:1198:U:H6    | 8:CB:1198:U:O5'   | 2.03                     | 0.41              |
| 8:CB:1223:G:O6    | 24:CR:90:ARG:NH1  | 2.53                     | 0.41              |
| 8:CB:1350:C:C4    | 8:CB:1351:C:C5    | 3.08                     | 0.41              |
| 8:CB:1523:U:H3'   | 8:CB:1524:G:C5'   | 2.50                     | 0.41              |
| 8:CB:1644:C:C2'   | 8:CB:1645:G:H5'   | 2.50                     | 0.41              |
| 8:CB:1684:G:C8    | 8:CB:1684:G:H3'   | 2.55                     | 0.41              |
| 8:CB:1838:C:N4    | 8:CB:1899:A:N3    | 2.67                     | 0.41              |
| 8:CB:2010:G:H2'   | 8:CB:2011:U:C5'   | 2.50                     | 0.41              |
| 8:CB:2075:U:P     | 55:CB:5382:HOH:O  | 2.78                     | 0.41              |
| 8:CB:2223:G:C3'   | 8:CB:2224:G:H5'   | 2.50                     | 0.41              |
| 8:CB:2252:G:H2'   | 8:CB:2253:G:H5'   | 2.02                     | 0.41              |
| 8:CB:2297:A:N1    | 8:CB:2320:U:O4'   | 2.53                     | 0.41              |
| 8:CB:2335:A:C6    | 8:CB:2337:G:C4    | 3.08                     | 0.41              |
| 8:CB:2376:A:N9    | 21:CO:99:TYR:CE2  | 2.89                     | 0.41              |
| 8:CB:2734:A:C8    | 8:CB:2734:A:H3'   | 2.54                     | 0.41              |
| 8:CB:2745:C:N4    | 8:CB:2759:G:H1    | 2.05                     | 0.41              |
| 8:CB:2816:G:C2    | 8:CB:2817:U:C5    | 3.07                     | 0.41              |
| 9:CC:61:TYR:HD2   | 9:CC:84:PRO:HD2   | 1.84                     | 0.41              |
| 9:CC:94:LEU:HG    | 9:CC:95:TYR:O     | 2.19                     | 0.41              |
| 9:CC:112:GLY:O    | 9:CC:115:ILE:HD11 | 2.20                     | 0.41              |
| 11:CE:49:ARG:N    | 11:CE:49:ARG:CD   | 2.82                     | 0.41              |
| 12:CF:56:LEU:HD23 | 12:CF:56:LEU:C    | 2.40                     | 0.41              |
| 13:CG:41:GLU:OE2  | 13:CG:54:ARG:CZ   | 2.69                     | 0.41              |
| 16:CJ:64:VAL:O    | 16:CJ:65:THR:C    | 2.58                     | 0.41              |
| 18:CL:33:ARG:CD   | 24:CR:85:LYS:HZ3  | 2.31                     | 0.41              |
| 19:CM:53:MET:O    | 19:CM:53:MET:HG2  | 2.20                     | 0.41              |
| 21:CO:27:VAL:CG2  | 21:CO:38:GLN:HB3  | 2.48                     | 0.41              |
| 21:CO:30:ARG:O    | 21:CO:31:THR:O    | 2.38                     | 0.41              |
| 21:CO:44:GLY:HA2  | 21:CO:46:GLU:OE1  | 2.19                     | 0.41              |
| 25:CS:83:LYS:HB2  | 25:CS:83:LYS:HZ2  | 1.79                     | 0.41              |
| 25:CS:85:ILE:CD1  | 25:CS:94:ASP:HB2  | 2.50                     | 0.41              |
| 26:CT:6:ARG:NE    | 26:CT:6:ARG:H     | 2.18                     | 0.41              |
| 26:CT:30:ILE:CG1  | 26:CT:31:VAL:H    | 2.30                     | 0.41              |
| 29:CW:10:ARG:HA   | 29:CW:10:ARG:HD2  | 1.76                     | 0.41              |
| 29:CW:66:VAL:CG1  | 29:CW:67:LYS:H    | 2.24                     | 0.41              |
| 29:CW:67:LYS:HD3  | 29:CW:67:LYS:HA   | 1.87                     | 0.41              |
| 30:CX:1:MET:HB2   | 30:CX:5:GLU:HB3   | 1.99                     | 0.41              |
| 33:DA:160:A:C4    | 33:DA:161:A:C8    | 3.08                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:DA:227:G:C6   | 33:DA:228:A:C5    | 3.07                     | 0.41              |
| 33:DA:233:C:O2'  | 33:DA:264:C:N3    | 2.54                     | 0.41              |
| 33:DA:333:U:C2'  | 33:DA:334:C:H5'   | 2.51                     | 0.41              |
| 33:DA:391:G:N3   | 33:DA:392:C:H1'   | 2.36                     | 0.41              |
| 33:DA:432:A:C8   | 33:DA:433:G:H8    | 2.37                     | 0.41              |
| 33:DA:629:A:N7   | 33:DA:630:A:C8    | 2.87                     | 0.41              |
| 33:DA:639:G:H8   | 33:DA:639:G:C5'   | 2.33                     | 0.41              |
| 33:DA:712:A:C6   | 33:DA:713:G:C2    | 3.09                     | 0.41              |
| 33:DA:713:G:C2   | 33:DA:714:G:N1    | 2.88                     | 0.41              |
| 33:DA:715:A:C2   | 33:DA:716:A:C5    | 3.08                     | 0.41              |
| 33:DA:824:G:N1   | 33:DA:877:G:N1    | 2.68                     | 0.41              |
| 33:DA:1118:U:P   | 41:DI:105:ARG:HG3 | 2.60                     | 0.41              |
| 33:DA:1135:U:H2' | 33:DA:1137:C:N3   | 2.35                     | 0.41              |
| 33:DA:1170:A:H2' | 33:DA:1170:A:N3   | 2.35                     | 0.41              |
| 33:DA:1206:G:O4' | 35:DC:193:GLY:CA  | 2.67                     | 0.41              |
| 33:DA:1220:G:C8  | 33:DA:1220:G:C3'  | 3.03                     | 0.41              |
| 33:DA:1238:A:OP1 | 33:DA:1335:U:O2'  | 2.38                     | 0.41              |
| 33:DA:1250:A:N3  | 33:DA:1370:G:O2'  | 2.40                     | 0.41              |
| 33:DA:1329:A:OP1 | 45:DM:28:ARG:N    | 2.53                     | 0.41              |
| 33:DA:1361:G:C8  | 33:DA:1361:G:C3'  | 3.03                     | 0.41              |
| 33:DA:1450:U:C2  | 33:DA:1452:C:C2   | 3.08                     | 0.41              |
| 33:DA:1526:G:C2' | 33:DA:1527:U:O5'  | 2.69                     | 0.41              |
| 34:DB:8:MET:O    | 34:DB:10:LYS:HG2  | 2.20                     | 0.41              |
| 34:DB:83:ALA:O   | 34:DB:88:GLN:HB2  | 2.20                     | 0.41              |
| 38:DF:67:PRO:C   | 38:DF:69:GLU:N    | 2.73                     | 0.41              |
| 39:DG:22:LEU:O   | 39:DG:26:VAL:HG13 | 2.20                     | 0.41              |
| 42:DJ:8:ILE:HG13 | 42:DJ:74:VAL:HB   | 2.02                     | 0.41              |
| 43:DK:17:ASP:O   | 43:DK:36:ARG:HB3  | 2.21                     | 0.41              |
| 47:DO:81:ILE:O   | 47:DO:85:GLY:N    | 2.49                     | 0.41              |
| 48:DP:70:ARG:C   | 48:DP:72:ALA:N    | 2.72                     | 0.41              |
| 51:DS:35:ARG:C   | 51:DS:37:SER:N    | 2.72                     | 0.41              |
| 52:DT:64:GLY:CA  | 52:DT:67:HIS:CD2  | 3.03                     | 0.41              |
| 3:A2:13:ASN:OD1  | 8:AB:125:A:C4'    | 2.59                     | 0.41              |
| 5:A4:11:CYS:SG   | 5:A4:12:ARG:N     | 2.93                     | 0.41              |
| 5:A4:36:ARG:C    | 5:A4:38:GLY:N     | 2.74                     | 0.41              |
| 7:AA:44:G:H4'    | 7:AA:45:A:H8      | 1.84                     | 0.41              |
| 7:AA:65:U:H2'    | 7:AA:108:A:N6     | 2.36                     | 0.41              |
| 7:AA:113:C:C2'   | 7:AA:114:C:O4'    | 2.68                     | 0.41              |
| 8:AB:129:C:O2'   | 8:AB:130:C:H6     | 2.02                     | 0.41              |
| 8:AB:194:G:C2    | 8:AB:195:A:C8     | 3.08                     | 0.41              |
| 8:AB:295:G:C2'   | 8:AB:296:U:H5'    | 2.50                     | 0.41              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 8:AB:323:C:C4   | 8:AB:333:G:C8     | 3.07                     | 0.41              |
| 8:AB:327:G:H2'  | 8:AB:327:G:N3     | 2.35                     | 0.41              |
| 8:AB:382:A:C2   | 8:AB:383:C:C6     | 3.08                     | 0.41              |
| 8:AB:464:U:O5'  | 8:AB:464:U:H6     | 2.03                     | 0.41              |
| 8:AB:499:U:N3   | 8:AB:500:G:C4     | 2.88                     | 0.41              |
| 8:AB:513:A:H2'  | 8:AB:514:A:H5'    | 2.02                     | 0.41              |
| 8:AB:598:U:H2'  | 8:AB:599:A:C8     | 2.55                     | 0.41              |
| 8:AB:630:G:H1   | 18:AL:69:ARG:HH22 | 1.68                     | 0.41              |
| 8:AB:690:G:C8   | 8:AB:690:G:C5'    | 3.03                     | 0.41              |
| 8:AB:699:A:H61  | 8:AB:733:G:H2'    | 1.84                     | 0.41              |
| 8:AB:797:G:C6   | 8:AB:798:G:C5     | 3.09                     | 0.41              |
| 8:AB:816:C:O2   | 8:AB:816:C:H2'    | 2.21                     | 0.41              |
| 8:AB:839:U:O2'  | 8:AB:1191:G:H1'   | 2.20                     | 0.41              |
| 8:AB:859:G:O3'  | 8:AB:860:U:H6     | 2.03                     | 0.41              |
| 8:AB:915:C:O2   | 8:AB:915:C:H2'    | 2.20                     | 0.41              |
| 8:AB:1188:U:C2' | 8:AB:1189:A:H5'   | 2.49                     | 0.41              |
| 8:AB:1394:U:O5' | 8:AB:1394:U:H6    | 2.04                     | 0.41              |
| 8:AB:1570:A:C2  | 8:AB:1571:A:C4    | 3.09                     | 0.41              |
| 8:AB:1658:C:OP1 | 10:AD:136:ASN:CG  | 2.58                     | 0.41              |
| 8:AB:1683:U:O5' | 8:AB:1683:U:H6    | 2.03                     | 0.41              |
| 8:AB:1693:U:OP2 | 8:AB:1694:C:N4    | 2.43                     | 0.41              |
| 8:AB:1799:G:H4' | 8:AB:1800:C:H6    | 1.84                     | 0.41              |
| 8:AB:1870:C:O2  | 8:AB:1870:C:C2'   | 2.69                     | 0.41              |
| 8:AB:1897:G:C2  | 8:AB:1898:U:O2    | 2.74                     | 0.41              |
| 8:AB:1965:C:N4  | 8:AB:1966:A:N1    | 2.68                     | 0.41              |
| 8:AB:2010:G:H2' | 8:AB:2011:U:H5'   | 2.00                     | 0.41              |
| 8:AB:2023:C:C6  | 8:AB:2023:C:C3'   | 3.04                     | 0.41              |
| 8:AB:2070:A:H2' | 8:AB:2071:A:C8    | 2.55                     | 0.41              |
| 8:AB:2221:G:C2  | 8:AB:2222:C:C2    | 3.08                     | 0.41              |
| 8:AB:2240:U:N3  | 8:AB:2241:A:C8    | 2.88                     | 0.41              |
| 8:AB:2270:A:C2' | 8:AB:2271:G:H5'   | 2.50                     | 0.41              |
| 8:AB:2331:G:O2' | 8:AB:2336:A:N6    | 2.52                     | 0.41              |
| 8:AB:2388:A:O2' | 8:AB:2389:G:H5'   | 2.21                     | 0.41              |
| 8:AB:2697:G:C2  | 8:AB:2711:A:C2    | 3.08                     | 0.41              |
| 8:AB:2869:G:C5  | 8:AB:2870:C:C5    | 3.08                     | 0.41              |
| 9:AC:52:HIS:C   | 9:AC:53:ILE:CG1   | 2.89                     | 0.41              |
| 9:AC:130:PRO:HA | 9:AC:188:ARG:HA   | 2.03                     | 0.41              |
| 9:AC:178:GLY:O  | 9:AC:266:ILE:HB   | 2.21                     | 0.41              |
| 9:AC:252:LYS:O  | 9:AC:253:GLY:O    | 2.38                     | 0.41              |
| 10:AD:88:GLU:H  | 10:AD:91:THR:CG2  | 2.34                     | 0.41              |
| 10:AD:135:GLY:C | 10:AD:137:SER:N   | 2.71                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AD:206:ALA:O    | 10:AD:208:LYS:N    | 2.53                     | 0.41              |
| 11:AE:177:PRO:O    | 11:AE:180:LEU:HB2  | 2.21                     | 0.41              |
| 14:AH:6:LEU:O      | 14:AH:6:LEU:HD12   | 2.19                     | 0.41              |
| 16:AJ:14:ASP:HB3   | 16:AJ:15:TRP:H     | 1.66                     | 0.41              |
| 16:AJ:96:ARG:HH21  | 16:AJ:97:PRO:C     | 2.23                     | 0.41              |
| 18:AL:78:ARG:CZ    | 18:AL:80:SER:CA    | 2.94                     | 0.41              |
| 20:AN:69:ARG:O     | 20:AN:70:THR:CB    | 2.67                     | 0.41              |
| 22:AP:76:HIS:CB    | 22:AP:78:PRO:HD2   | 2.49                     | 0.41              |
| 22:AP:77:SER:N     | 22:AP:78:PRO:HD3   | 2.34                     | 0.41              |
| 23:AQ:52:ARG:HA    | 23:AQ:55:GLN:HB3   | 2.03                     | 0.41              |
| 24:AR:37:GLU:OE1   | 24:AR:62:GLU:HB2   | 2.21                     | 0.41              |
| 26:AT:15:HIS:O     | 26:AT:16:VAL:HG12  | 2.19                     | 0.41              |
| 27:AU:13:LEU:H     | 27:AU:68:ASN:ND2   | 2.19                     | 0.41              |
| 27:AU:95:PHE:CE1   | 27:AU:96:LYS:CD    | 3.01                     | 0.41              |
| 29:AW:31:LEU:HD13  | 29:AW:66:VAL:HG23  | 2.03                     | 0.41              |
| 33:BA:109:A:C5     | 33:BA:327:A:C2     | 3.07                     | 0.41              |
| 33:BA:306:A:O2'    | 33:BA:307:C:O5'    | 2.30                     | 0.41              |
| 33:BA:438:U:C6     | 33:BA:494:G:C6     | 3.08                     | 0.41              |
| 33:BA:516:U:C4     | 33:BA:517:G:C2     | 3.08                     | 0.41              |
| 33:BA:604:G:C5     | 33:BA:635:A:N1     | 2.88                     | 0.41              |
| 33:BA:604:G:C2     | 33:BA:605:U:C2     | 3.08                     | 0.41              |
| 33:BA:634:C:H2'    | 33:BA:635:A:O4'    | 2.20                     | 0.41              |
| 33:BA:706:A:O2'    | 43:BK:30:ILE:CD1   | 2.68                     | 0.41              |
| 33:BA:792:A:C6     | 33:BA:794:A:N1     | 2.88                     | 0.41              |
| 33:BA:891:U:C4     | 33:BA:906:A:C2     | 3.08                     | 0.41              |
| 33:BA:917:G:N1     | 33:BA:918:A:C6     | 2.89                     | 0.41              |
| 33:BA:918:A:C6     | 33:BA:919:A:C2     | 3.08                     | 0.41              |
| 33:BA:940:C:N4     | 33:BA:941:G:O6     | 2.53                     | 0.41              |
| 33:BA:1006:G:O6    | 33:BA:1024:G:H1'   | 2.20                     | 0.41              |
| 33:BA:1054:C:C6    | 33:BA:1054:C:C3'   | 3.03                     | 0.41              |
| 33:BA:1214:C:H5'   | 33:BA:1215:G:OP2   | 2.21                     | 0.41              |
| 33:BA:1277:C:O2'   | 33:BA:1279:G:C1'   | 2.68                     | 0.41              |
| 33:BA:1288:A:N6    | 33:BA:1289:A:C6    | 2.88                     | 0.41              |
| 33:BA:1338:G:C6    | 33:BA:1339:A:N6    | 2.89                     | 0.41              |
| 33:BA:1494:G:H5'   | 33:BA:1494:G:C8    | 2.55                     | 0.41              |
| 34:BB:17:HIS:CG    | 34:BB:18:GLN:H     | 2.39                     | 0.41              |
| 34:BB:75:ALA:HB2   | 34:BB:209:VAL:HG11 | 2.02                     | 0.41              |
| 34:BB:113:LEU:HD22 | 34:BB:151:LYS:HD2  | 2.02                     | 0.41              |
| 34:BB:211:LEU:HD23 | 34:BB:211:LEU:HA   | 1.88                     | 0.41              |
| 34:BB:217:ALA:HB1  | 34:BB:221:ARG:HH21 | 1.85                     | 0.41              |
| 35:BC:69:THR:HG21  | 35:BC:72:PRO:HA    | 2.02                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BC:115:VAL:O   | 35:BC:119:ILE:HB  | 2.19                     | 0.41              |
| 35:BC:166:TRP:HB3 | 35:BC:167:TYR:H   | 1.55                     | 0.41              |
| 38:BF:67:PRO:C    | 38:BF:69:GLU:H    | 2.22                     | 0.41              |
| 38:BF:67:PRO:C    | 38:BF:69:GLU:N    | 2.72                     | 0.41              |
| 40:BH:77:VAL:CG2  | 40:BH:126:CYS:HA  | 2.40                     | 0.41              |
| 42:BJ:38:GLY:HA2  | 42:BJ:39:PRO:HD3  | 1.80                     | 0.41              |
| 43:BK:100:ASN:ND2 | 53:BU:12:ASP:OD1  | 2.53                     | 0.41              |
| 48:BP:36:VAL:HG13 | 48:BP:36:VAL:O    | 2.20                     | 0.41              |
| 49:BQ:62:GLU:O    | 49:BQ:63:CYS:HB2  | 2.21                     | 0.41              |
| 50:BR:32:ILE:HG22 | 50:BR:36:GLY:O    | 2.19                     | 0.41              |
| 52:BT:8:LYS:O     | 52:BT:10:ALA:N    | 2.53                     | 0.41              |
| 52:BT:28:ARG:HA   | 52:BT:31:ILE:HD11 | 2.01                     | 0.41              |
| 53:BU:38:GLU:O    | 53:BU:41:THR:CB   | 2.67                     | 0.41              |
| 1:C0:27:LEU:CG    | 8:CB:2886:A:C5    | 2.99                     | 0.41              |
| 7:CA:104:A:N3     | 7:CA:105:G:C1'    | 2.83                     | 0.41              |
| 8:CB:36:G:C6      | 8:CB:445:C:N4     | 2.88                     | 0.41              |
| 8:CB:64:A:O2'     | 26:CT:74:ILE:CG2  | 2.62                     | 0.41              |
| 8:CB:127:A:OP1    | 8:CB:128:C:H1'    | 2.20                     | 0.41              |
| 8:CB:190:A:N7     | 8:CB:207:A:C5     | 2.88                     | 0.41              |
| 8:CB:230:G:N2     | 8:CB:231:A:C4     | 2.89                     | 0.41              |
| 8:CB:538:A:C2     | 8:CB:556:A:C8     | 3.08                     | 0.41              |
| 8:CB:566:U:C6     | 8:CB:567:U:C5     | 3.05                     | 0.41              |
| 8:CB:575:A:O2'    | 8:CB:576:U:C5'    | 2.68                     | 0.41              |
| 8:CB:625:G:C2     | 8:CB:626:A:C5     | 3.08                     | 0.41              |
| 8:CB:627:A:C6     | 8:CB:637:A:C8     | 3.08                     | 0.41              |
| 8:CB:633:A:C8     | 8:CB:633:A:H3'    | 2.56                     | 0.41              |
| 8:CB:774:G:OP1    | 9:CC:48:ILE:HG12  | 2.21                     | 0.41              |
| 8:CB:788:A:C5'    | 8:CB:790:U:O4     | 2.68                     | 0.41              |
| 8:CB:822:G:O6     | 8:CB:943:A:H2     | 2.04                     | 0.41              |
| 8:CB:917:A:N6     | 8:CB:918:A:C6     | 2.88                     | 0.41              |
| 8:CB:941:A:N3     | 8:CB:941:A:C2'    | 2.83                     | 0.41              |
| 8:CB:1000:A:C5    | 8:CB:1155:A:N7    | 2.88                     | 0.41              |
| 8:CB:1025:G:C5    | 8:CB:1135:C:C6    | 3.08                     | 0.41              |
| 8:CB:1055:G:OP2   | 8:CB:1055:G:C8    | 2.72                     | 0.41              |
| 8:CB:1108:U:C2    | 8:CB:1109:C:C6    | 3.09                     | 0.41              |
| 8:CB:1155:A:N6    | 31:CY:10:ARG:NH1  | 2.68                     | 0.41              |
| 8:CB:1224:U:H4'   | 24:CR:89:HIS:O    | 2.20                     | 0.41              |
| 8:CB:1252:G:C2    | 23:CQ:32:ARG:HG2  | 2.56                     | 0.41              |
| 8:CB:1356:G:O2'   | 8:CB:1357:C:H5'   | 2.20                     | 0.41              |
| 8:CB:1379:U:C6    | 8:CB:1379:U:H5'   | 2.55                     | 0.41              |
| 8:CB:1398:C:H2'   | 8:CB:1399:C:C6    | 2.55                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1425:G:N1    | 8:CB:1426:G:C2    | 2.88                     | 0.41              |
| 8:CB:1452:G:C2    | 8:CB:2702:G:C6    | 3.08                     | 0.41              |
| 8:CB:1498:C:C5    | 8:CB:1499:C:C4    | 3.09                     | 0.41              |
| 8:CB:1562:U:H2'   | 8:CB:1563:U:O4'   | 2.19                     | 0.41              |
| 8:CB:1615:C:N3    | 8:CB:1617:C:C6    | 2.88                     | 0.41              |
| 8:CB:1684:G:H2'   | 8:CB:1685:C:O4'   | 2.20                     | 0.41              |
| 8:CB:1687:G:N3    | 8:CB:1688:U:C6    | 2.88                     | 0.41              |
| 8:CB:1696:G:N3    | 8:CB:1696:G:H2'   | 2.34                     | 0.41              |
| 8:CB:1705:A:C6    | 8:CB:1706:C:C4    | 3.09                     | 0.41              |
| 8:CB:1847:A:N6    | 8:CB:1891:G:OP2   | 2.54                     | 0.41              |
| 8:CB:1847:A:H1'   | 8:CB:1848:A:N7    | 2.35                     | 0.41              |
| 8:CB:1942:C:H3'   | 8:CB:1942:C:H6    | 1.86                     | 0.41              |
| 8:CB:1944:U:O5'   | 8:CB:1944:U:C2'   | 2.67                     | 0.41              |
| 8:CB:1957:C:H6    | 8:CB:1957:C:O5'   | 2.03                     | 0.41              |
| 8:CB:1967:C:N4    | 8:CB:1968:G:C4    | 2.89                     | 0.41              |
| 8:CB:1987:A:C6    | 8:CB:1988:G:C6    | 3.08                     | 0.41              |
| 8:CB:2095:A:N6    | 8:CB:2096:C:C4    | 2.89                     | 0.41              |
| 8:CB:2186:G:H2'   | 8:CB:2187:U:C5'   | 2.50                     | 0.41              |
| 8:CB:2199:A:C6    | 8:CB:2225:A:C5    | 3.09                     | 0.41              |
| 8:CB:2201:G:C6    | 8:CB:2223:G:C6    | 3.09                     | 0.41              |
| 8:CB:2365:G:H4'   | 29:CW:65:LYS:CD   | 2.50                     | 0.41              |
| 8:CB:2392:A:H2'   | 8:CB:2393:U:H6    | 1.86                     | 0.41              |
| 8:CB:2425:A:O4'   | 8:CB:2427:C:C6    | 2.72                     | 0.41              |
| 8:CB:2443:C:O2'   | 8:CB:2444:G:H5'   | 2.20                     | 0.41              |
| 8:CB:2459:A:N6    | 8:CB:2493:U:H3    | 2.18                     | 0.41              |
| 8:CB:2478:A:H3'   | 8:CB:2479:U:C6    | 2.55                     | 0.41              |
| 8:CB:2675:A:C2'   | 8:CB:2676:C:H5'   | 2.50                     | 0.41              |
| 8:CB:2692:G:N2    | 8:CB:2693:G:H1'   | 2.33                     | 0.41              |
| 8:CB:2758:A:H2'   | 8:CB:2759:G:H8    | 1.85                     | 0.41              |
| 8:CB:2813:A:C5    | 8:CB:2814:A:N7    | 2.88                     | 0.41              |
| 9:CC:196:ASN:HB3  | 9:CC:199:HIS:CD2  | 2.55                     | 0.41              |
| 10:CD:99:GLU:OE1  | 10:CD:99:GLU:CA   | 2.60                     | 0.41              |
| 10:CD:108:ASP:OD2 | 10:CD:108:ASP:O   | 2.38                     | 0.41              |
| 10:CD:157:LYS:HE3 | 10:CD:157:LYS:HB3 | 1.97                     | 0.41              |
| 14:CH:113:SER:OG  | 14:CH:132:PHE:HE2 | 2.03                     | 0.41              |
| 14:CH:121:VAL:HB  | 14:CH:122:LEU:H   | 1.47                     | 0.41              |
| 15:CI:54:ILE:HA   | 15:CI:55:PRO:HD2  | 1.87                     | 0.41              |
| 16:CJ:42:ALA:HA   | 23:CQ:63:ARG:HH12 | 1.86                     | 0.41              |
| 16:CJ:58:ASN:C    | 16:CJ:60:ASP:H    | 2.23                     | 0.41              |
| 18:CL:92:LEU:HD22 | 18:CL:96:LYS:HB3  | 2.02                     | 0.41              |
| 19:CM:34:LYS:O    | 19:CM:125:PRO:HD2 | 2.21                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:CM:95:LEU:H     | 19:CM:95:LEU:CD2   | 2.32                     | 0.41              |
| 20:CN:38:LEU:O     | 20:CN:39:PRO:C     | 2.58                     | 0.41              |
| 21:CO:17:LYS:CD    | 21:CO:20:GLU:HG3   | 2.48                     | 0.41              |
| 21:CO:19:GLN:NE2   | 29:CW:76:ARG:HG2   | 2.03                     | 0.41              |
| 22:CP:12:MET:HA    | 22:CP:12:MET:HE3   | 2.03                     | 0.41              |
| 23:CQ:63:ARG:HH11  | 23:CQ:63:ARG:CB    | 2.20                     | 0.41              |
| 23:CQ:93:ILE:HG13  | 24:CR:10:LYS:NZ    | 2.34                     | 0.41              |
| 24:CR:32:THR:HA    | 24:CR:66:HIS:HD2   | 1.84                     | 0.41              |
| 24:CR:65:ALA:HB3   | 24:CR:100:GLY:N    | 2.34                     | 0.41              |
| 26:CT:6:ARG:O      | 26:CT:8:LEU:N      | 2.53                     | 0.41              |
| 26:CT:54:GLU:OE1   | 26:CT:91:GLN:CD    | 2.58                     | 0.41              |
| 26:CT:63:VAL:O     | 26:CT:64:LYS:HD2   | 2.21                     | 0.41              |
| 28:CV:26:PHE:HE1   | 28:CV:42:LEU:HD12  | 1.86                     | 0.41              |
| 29:CW:47:GLY:CA    | 29:CW:72:GLY:CA    | 2.91                     | 0.41              |
| 31:CY:2:LYS:HB2    | 31:CY:37:ARG:H     | 1.77                     | 0.41              |
| 31:CY:8:GLN:O      | 31:CY:9:THR:C      | 2.59                     | 0.41              |
| 32:CZ:44:PHE:CG    | 32:CZ:45:THR:N     | 2.86                     | 0.41              |
| 33:DA:64:G:O5'     | 33:DA:64:G:H2'     | 2.20                     | 0.41              |
| 33:DA:72:A:C2'     | 33:DA:73:C:H5'     | 2.50                     | 0.41              |
| 33:DA:128:G:O2'    | 33:DA:129:A:H5'    | 2.20                     | 0.41              |
| 33:DA:182:A:H5''   | 33:DA:182:A:N3     | 2.36                     | 0.41              |
| 33:DA:333:U:O2'    | 33:DA:334:C:H5'    | 2.20                     | 0.41              |
| 33:DA:355:C:C2     | 33:DA:356:A:C8     | 3.09                     | 0.41              |
| 33:DA:373:A:C4     | 33:DA:482:A:N7     | 2.88                     | 0.41              |
| 33:DA:491:G:H2'    | 33:DA:492:C:C6     | 2.52                     | 0.41              |
| 33:DA:518:C:OP2    | 33:DA:530:G:H1'    | 2.20                     | 0.41              |
| 33:DA:540:G:C6     | 33:DA:541:G:C6     | 3.09                     | 0.41              |
| 33:DA:720:C:O5'    | 33:DA:720:C:H6     | 2.03                     | 0.41              |
| 33:DA:937:A:H2'    | 33:DA:938:A:C8     | 2.56                     | 0.41              |
| 33:DA:1084:G:C4    | 33:DA:1085:U:C5    | 3.08                     | 0.41              |
| 33:DA:1139:G:H1    | 33:DA:1143:G:N2    | 2.17                     | 0.41              |
| 33:DA:1217:C:O2    | 33:DA:1217:C:C2'   | 2.64                     | 0.41              |
| 33:DA:1307:U:C5'   | 45:DM:107:THR:HG21 | 2.50                     | 0.41              |
| 33:DA:1356:G:H8    | 33:DA:1356:G:O5'   | 2.03                     | 0.41              |
| 33:DA:1434:A:N6    | 33:DA:1435:G:C6    | 2.88                     | 0.41              |
| 33:DA:1442:G:N1    | 33:DA:1461:G:C2    | 2.88                     | 0.41              |
| 34:DB:83:ALA:CB    | 34:DB:90:PHE:CG    | 3.03                     | 0.41              |
| 34:DB:90:PHE:N     | 34:DB:149:GLY:O    | 2.52                     | 0.41              |
| 34:DB:113:LEU:HD23 | 34:DB:114:LYS:N    | 2.35                     | 0.41              |
| 34:DB:136:ARG:O    | 34:DB:139:GLU:CB   | 2.67                     | 0.41              |
| 36:DD:98:ASP:HB2   | 36:DD:114:ARG:HB2  | 2.02                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 36:DD:124:VAL:C    | 36:DD:126:GLY:H   | 2.24                     | 0.41              |
| 36:DD:170:LEU:HD12 | 36:DD:170:LEU:N   | 2.36                     | 0.41              |
| 37:DE:154:ALA:HB1  | 40:DH:65:PHE:CE1  | 2.56                     | 0.41              |
| 38:DF:74:LEU:O     | 38:DF:75:GLU:C    | 2.59                     | 0.41              |
| 39:DG:25:PHE:HB2   | 39:DG:100:MET:HE2 | 2.02                     | 0.41              |
| 39:DG:148:LYS:HG3  | 39:DG:151:ALA:CA  | 2.50                     | 0.41              |
| 42:DJ:54:SER:CB    | 42:DJ:58:ASN:HD22 | 2.33                     | 0.41              |
| 43:DK:21:HIS:HB2   | 43:DK:32:THR:HG22 | 2.02                     | 0.41              |
| 43:DK:23:HIS:HA    | 43:DK:86:LYS:HB2  | 2.01                     | 0.41              |
| 43:DK:43:TRP:CE3   | 43:DK:44:ALA:HA   | 2.54                     | 0.41              |
| 51:DS:29:PRO:HA    | 51:DS:47:THR:HB   | 2.02                     | 0.41              |
| 52:DT:20:ASN:O     | 52:DT:21:ALA:C    | 2.59                     | 0.41              |
| 52:DT:38:ILE:O     | 52:DT:40:ALA:N    | 2.53                     | 0.41              |
| 52:DT:77:ASN:HB3   | 55:DT:5003:HOH:O  | 2.19                     | 0.41              |
| 52:DT:79:THR:CA    | 52:DT:82:ILE:HG12 | 2.48                     | 0.41              |
| 1:A0:29:VAL:HG13   | 1:A0:41:HIS:NE2   | 2.35                     | 0.41              |
| 1:A0:29:VAL:CG1    | 1:A0:30:ASP:N     | 2.83                     | 0.41              |
| 2:A1:15:GLY:HA3    | 2:A1:47:ILE:CB    | 2.49                     | 0.41              |
| 3:A2:42:LEU:HD11   | 3:A2:44:VAL:HG22  | 2.03                     | 0.41              |
| 7:AA:23:G:C5       | 7:AA:24:G:O6      | 2.73                     | 0.41              |
| 7:AA:84:G:C6       | 7:AA:85:G:N7      | 2.88                     | 0.41              |
| 8:AB:58:G:C4       | 8:AB:59:U:C5      | 3.09                     | 0.41              |
| 8:AB:121:G:H1'     | 8:AB:131:A:C2     | 2.56                     | 0.41              |
| 8:AB:190:A:C4      | 8:AB:207:A:C2     | 3.09                     | 0.41              |
| 8:AB:277:G:N3      | 8:AB:277:G:C2'    | 2.83                     | 0.41              |
| 8:AB:325:G:H2'     | 8:AB:326:G:H5''   | 2.03                     | 0.41              |
| 8:AB:338:G:H5''    | 8:AB:338:G:H8     | 1.85                     | 0.41              |
| 8:AB:348:A:H2'     | 8:AB:349:U:H6     | 1.86                     | 0.41              |
| 8:AB:396:G:H2'     | 8:AB:397:U:O4'    | 2.21                     | 0.41              |
| 8:AB:483:A:H3'     | 8:AB:484:C:H6     | 1.86                     | 0.41              |
| 8:AB:523:C:O2'     | 8:AB:554:U:H1'    | 2.20                     | 0.41              |
| 8:AB:671:C:C2      | 8:AB:672:C:C5     | 3.08                     | 0.41              |
| 8:AB:688:U:H5'     | 8:AB:1780:A:H2    | 1.86                     | 0.41              |
| 8:AB:1058:U:H6     | 8:AB:1058:U:O5'   | 2.03                     | 0.41              |
| 8:AB:1131:G:O2'    | 8:AB:1133:A:N7    | 2.51                     | 0.41              |
| 8:AB:1238:G:N2     | 8:AB:1239:G:C4    | 2.89                     | 0.41              |
| 8:AB:1272:A:OP1    | 55:AB:4460:HOH:O  | 2.22                     | 0.41              |
| 8:AB:1326:U:C4     | 8:AB:1327:A:N7    | 2.89                     | 0.41              |
| 8:AB:1376:C:N3     | 8:AB:1377:G:C5    | 2.89                     | 0.41              |
| 8:AB:1416:G:C4     | 8:AB:1417:C:C5    | 3.09                     | 0.41              |
| 8:AB:1453:A:N1     | 20:AN:74:GLU:HA   | 2.36                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1523:U:O5'    | 8:AB:1523:U:C6     | 2.73                     | 0.41              |
| 8:AB:1672:A:C2     | 8:AB:1673:G:C4     | 3.08                     | 0.41              |
| 8:AB:1684:G:C6     | 8:AB:1685:C:C4     | 3.09                     | 0.41              |
| 8:AB:1727:C:N4     | 8:AB:1728:C:N4     | 2.69                     | 0.41              |
| 8:AB:1729:U:H3'    | 8:AB:1730:C:C5'    | 2.50                     | 0.41              |
| 8:AB:1736:U:C4     | 8:AB:1737:G:C5     | 3.09                     | 0.41              |
| 8:AB:1881:C:H2'    | 8:AB:1882:U:O4'    | 2.20                     | 0.41              |
| 8:AB:1930:G:H2'    | 8:AB:1968:G:O6     | 2.20                     | 0.41              |
| 8:AB:2020:A:N7     | 8:AB:2022:U:C4     | 2.88                     | 0.41              |
| 8:AB:2098:U:C2     | 8:AB:2099:U:C5     | 3.08                     | 0.41              |
| 8:AB:2291:U:H2'    | 8:AB:2292:U:C6     | 2.55                     | 0.41              |
| 8:AB:2519:U:N1     | 8:AB:2542:A:N6     | 2.68                     | 0.41              |
| 8:AB:2543:G:C6     | 8:AB:2765:A:N1     | 2.88                     | 0.41              |
| 8:AB:2569:G:C2     | 8:AB:2570:G:C8     | 3.08                     | 0.41              |
| 8:AB:2631:G:C6     | 8:AB:2632:A:N7     | 2.89                     | 0.41              |
| 8:AB:2674:G:C2'    | 8:AB:2675:A:O5'    | 2.69                     | 0.41              |
| 8:AB:2685:G:N3     | 8:AB:2686:G:C8     | 2.88                     | 0.41              |
| 8:AB:2691:C:O2'    | 8:AB:2692:G:H5'    | 2.20                     | 0.41              |
| 8:AB:2876:G:H2'    | 8:AB:2877:G:O4'    | 2.20                     | 0.41              |
| 8:AB:2900:A:C8     | 8:AB:2900:A:H3'    | 2.55                     | 0.41              |
| 9:AC:31:PRO:C      | 9:AC:32:LEU:HD12   | 2.41                     | 0.41              |
| 9:AC:119:VAL:HG13  | 9:AC:133:ASN:ND2   | 2.36                     | 0.41              |
| 10:AD:149:ASN:O    | 10:AD:151:THR:CG2  | 2.69                     | 0.41              |
| 11:AE:130:LYS:HB3  | 11:AE:130:LYS:HE2  | 1.88                     | 0.41              |
| 11:AE:148:ILE:O    | 11:AE:149:ILE:HG23 | 2.21                     | 0.41              |
| 13:AG:32:LEU:CD1   | 13:AG:74:MET:HB3   | 2.48                     | 0.41              |
| 13:AG:154:GLU:HA   | 13:AG:155:PRO:HD2  | 1.76                     | 0.41              |
| 16:AJ:35:ARG:NE    | 16:AJ:35:ARG:HA    | 2.35                     | 0.41              |
| 18:AL:126:ARG:HH11 | 18:AL:127:VAL:N    | 2.16                     | 0.41              |
| 19:AM:9:PHE:CE1    | 19:AM:11:LYS:HE3   | 2.56                     | 0.41              |
| 19:AM:110:GLU:CA   | 19:AM:126:ILE:HG21 | 2.50                     | 0.41              |
| 20:AN:77:ALA:O     | 20:AN:81:ASN:N     | 2.54                     | 0.41              |
| 21:AO:33:ARG:HB3   | 21:AO:34:HIS:CE1   | 2.54                     | 0.41              |
| 21:AO:84:GLU:HA    | 21:AO:87:ILE:HG22  | 2.02                     | 0.41              |
| 22:AP:50:ARG:HB2   | 22:AP:50:ARG:NH1   | 2.35                     | 0.41              |
| 25:AS:11:ARG:O     | 25:AS:12:SER:CB    | 2.62                     | 0.41              |
| 27:AU:63:ALA:O     | 27:AU:64:ILE:HG22  | 2.21                     | 0.41              |
| 28:AV:51:GLN:HB2   | 28:AV:51:GLN:HE21  | 1.62                     | 0.41              |
| 29:AW:36:ILE:HG13  | 29:AW:37:VAL:N     | 2.36                     | 0.41              |
| 29:AW:55:ASP:OD1   | 29:AW:56:HIS:N     | 2.51                     | 0.41              |
| 30:AX:19:LEU:O     | 30:AX:22:LEU:HB2   | 2.20                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:AZ:34:LEU:O    | 32:AZ:35:ASP:C     | 2.58                     | 0.41              |
| 33:BA:47:C:C5     | 33:BA:365:U:H2'    | 2.55                     | 0.41              |
| 33:BA:74:A:C6     | 33:BA:75:G:C5      | 3.08                     | 0.41              |
| 33:BA:133:U:O2    | 33:BA:230:G:N1     | 2.53                     | 0.41              |
| 33:BA:239:U:O2    | 33:BA:239:U:C2'    | 2.69                     | 0.41              |
| 33:BA:254:G:H1'   | 49:BQ:16:MET:HB3   | 2.02                     | 0.41              |
| 33:BA:301:G:O6    | 33:BA:302:G:C6     | 2.74                     | 0.41              |
| 33:BA:325:A:C8    | 33:BA:326:G:C8     | 3.08                     | 0.41              |
| 33:BA:488:C:H6    | 33:BA:488:C:H3'    | 1.86                     | 0.41              |
| 33:BA:488:C:C2'   | 33:BA:489:C:H5'    | 2.50                     | 0.41              |
| 33:BA:506:G:C8    | 33:BA:507:C:C5     | 3.09                     | 0.41              |
| 33:BA:597:G:O2'   | 49:BQ:36:PHE:CE1   | 2.73                     | 0.41              |
| 33:BA:602:A:C8    | 33:BA:602:A:H3'    | 2.54                     | 0.41              |
| 33:BA:706:A:H5''  | 33:BA:706:A:C8     | 2.56                     | 0.41              |
| 33:BA:720:C:N4    | 33:BA:721:G:N2     | 2.68                     | 0.41              |
| 33:BA:749:A:H2'   | 33:BA:750:C:H6     | 1.85                     | 0.41              |
| 33:BA:792:A:C2    | 33:BA:794:A:C4     | 3.09                     | 0.41              |
| 33:BA:1107:C:C4   | 33:BA:1108:G:N7    | 2.89                     | 0.41              |
| 33:BA:1144:G:N2   | 33:BA:1145:A:C5    | 2.89                     | 0.41              |
| 33:BA:1152:A:C5   | 33:BA:1153:G:N7    | 2.89                     | 0.41              |
| 33:BA:1154:G:C2'  | 33:BA:1155:A:H5''  | 2.51                     | 0.41              |
| 33:BA:1163:A:C2   | 33:BA:1164:G:C5    | 3.08                     | 0.41              |
| 33:BA:1197:A:C2   | 33:BA:1198:G:N7    | 2.87                     | 0.41              |
| 33:BA:1257:A:N3   | 33:BA:1257:A:H2'   | 2.35                     | 0.41              |
| 33:BA:1355:G:N2   | 33:BA:1368:A:C4    | 2.89                     | 0.41              |
| 33:BA:1385:G:C6   | 33:BA:1386:G:C5    | 3.08                     | 0.41              |
| 34:BB:13:VAL:HG13 | 34:BB:207:ARG:HB3  | 2.02                     | 0.41              |
| 34:BB:71:THR:O    | 34:BB:72:LYS:C     | 2.59                     | 0.41              |
| 35:BC:70:ALA:CB   | 35:BC:114:LEU:HD11 | 2.51                     | 0.41              |
| 36:BD:94:GLU:C    | 36:BD:96:ARG:H     | 2.24                     | 0.41              |
| 40:BH:31:LEU:HD12 | 40:BH:31:LEU:HA    | 1.92                     | 0.41              |
| 40:BH:94:VAL:HG11 | 40:BH:100:ILE:N    | 2.36                     | 0.41              |
| 43:BK:21:HIS:ND1  | 43:BK:34:THR:CG2   | 2.84                     | 0.41              |
| 46:BN:1:ALA:HB2   | 46:BN:67:GLY:N     | 2.35                     | 0.41              |
| 48:BP:18:GLN:NE2  | 48:BP:35:ARG:NH1   | 2.69                     | 0.41              |
| 53:BU:16:ARG:H    | 53:BU:16:ARG:CD    | 2.31                     | 0.41              |
| 3:C2:1:MET:HE2    | 3:C2:1:MET:HB2     | 1.91                     | 0.41              |
| 4:C3:12:ARG:HD2   | 18:CL:62:PRO:CG    | 2.48                     | 0.41              |
| 5:C4:29:ALA:O     | 5:C4:30:GLU:CG     | 2.64                     | 0.41              |
| 7:CA:30:C:H1'     | 7:CA:58:A:N1       | 2.35                     | 0.41              |
| 8:CB:27:G:O2'     | 8:CB:28:A:O5'      | 2.37                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:CB:171:U:O2'    | 8:CB:172:A:H5'     | 2.21                     | 0.41              |
| 8:CB:278:A:N1     | 8:CB:362:A:C6      | 2.88                     | 0.41              |
| 8:CB:324:A:P      | 11:CE:162:ARG:HH21 | 2.44                     | 0.41              |
| 8:CB:374:A:C5     | 8:CB:401:A:N7      | 2.89                     | 0.41              |
| 8:CB:379:G:N2     | 8:CB:396:G:C8      | 2.88                     | 0.41              |
| 8:CB:478:A:N6     | 8:CB:480:A:N6      | 2.68                     | 0.41              |
| 8:CB:871:U:OP1    | 19:CM:7:THR:O      | 2.38                     | 0.41              |
| 8:CB:956:G:O2'    | 19:CM:81:ARG:NH2   | 2.52                     | 0.41              |
| 8:CB:963:U:N3     | 8:CB:964:C:N4      | 2.69                     | 0.41              |
| 8:CB:968:C:N3     | 8:CB:969:G:C8      | 2.88                     | 0.41              |
| 8:CB:969:G:N3     | 8:CB:970:U:C6      | 2.87                     | 0.41              |
| 8:CB:978:G:N2     | 8:CB:986:C:C1'     | 2.84                     | 0.41              |
| 8:CB:1108:U:C4    | 8:CB:1109:C:C5     | 3.05                     | 0.41              |
| 8:CB:1179:G:C2    | 8:CB:1180:U:C2     | 3.08                     | 0.41              |
| 8:CB:1191:G:C8    | 8:CB:1191:G:H3'    | 2.54                     | 0.41              |
| 8:CB:1218:G:H8    | 8:CB:1218:G:H5''   | 1.86                     | 0.41              |
| 8:CB:1224:U:H4'   | 24:CR:90:ARG:O     | 2.20                     | 0.41              |
| 8:CB:1444:G:H2'   | 8:CB:1445:G:H8     | 1.86                     | 0.41              |
| 8:CB:1524:G:C2    | 8:CB:1525:A:H1'    | 2.56                     | 0.41              |
| 8:CB:1567:G:C8    | 8:CB:1567:G:C5'    | 3.02                     | 0.41              |
| 8:CB:1632:A:O2'   | 8:CB:1633:G:O4'    | 2.37                     | 0.41              |
| 8:CB:1933:G:H1    | 8:CB:1967:C:H42    | 1.66                     | 0.41              |
| 8:CB:1973:G:H2'   | 8:CB:1974:C:C5'    | 2.51                     | 0.41              |
| 8:CB:2077:A:C4    | 8:CB:2435:A:C8     | 3.08                     | 0.41              |
| 8:CB:2092:U:HO2'  | 8:CB:2092:U:H6     | 1.68                     | 0.41              |
| 8:CB:2320:U:OP2   | 8:CB:2320:U:O2     | 2.37                     | 0.41              |
| 8:CB:2361:G:H2'   | 8:CB:2362:C:O4'    | 2.20                     | 0.41              |
| 8:CB:2412:A:N7    | 8:CB:2413:G:N7     | 2.68                     | 0.41              |
| 8:CB:2462:C:H2'   | 8:CB:2462:C:O2     | 2.20                     | 0.41              |
| 8:CB:2685:G:C4    | 8:CB:2686:G:C8     | 3.09                     | 0.41              |
| 8:CB:2768:U:O4    | 8:CB:2769:U:C4     | 2.74                     | 0.41              |
| 8:CB:2842:G:C4    | 8:CB:2876:G:N1     | 2.89                     | 0.41              |
| 8:CB:2880:C:H6    | 20:CN:91:ALA:HB3   | 1.81                     | 0.41              |
| 9:CC:42:ARG:C     | 9:CC:43:ASN:ND2    | 2.73                     | 0.41              |
| 9:CC:178:GLY:O    | 9:CC:179:GLU:O     | 2.38                     | 0.41              |
| 9:CC:253:GLY:CA   | 9:CC:254:LYS:NZ    | 2.77                     | 0.41              |
| 12:CF:33:ILE:HG22 | 12:CF:155:ILE:CG1  | 2.45                     | 0.41              |
| 16:CJ:23:LYS:H    | 16:CJ:23:LYS:HG3   | 1.71                     | 0.41              |
| 17:CK:24:VAL:HG21 | 17:CK:31:ARG:O     | 2.20                     | 0.41              |
| 20:CN:115:LEU:N   | 20:CN:115:LEU:CD2  | 2.79                     | 0.41              |
| 22:CP:71:ARG:HB3  | 22:CP:72:VAL:HG13  | 2.01                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 23:CQ:8:ILE:O      | 23:CQ:9:ALA:O     | 2.38                     | 0.41              |
| 23:CQ:57:ARG:HH21  | 23:CQ:92:LYS:NZ   | 2.17                     | 0.41              |
| 24:CR:20:VAL:CG1   | 24:CR:97:LYS:HA   | 2.51                     | 0.41              |
| 24:CR:79:ARG:HG2   | 24:CR:80:ARG:N    | 2.36                     | 0.41              |
| 27:CU:72:PHE:CD1   | 27:CU:73:ASN:N    | 2.87                     | 0.41              |
| 30:CX:27:ASN:HB3   | 30:CX:28:LEU:H    | 1.73                     | 0.41              |
| 32:CZ:66:ILE:CB    | 32:CZ:67:PRO:HD3  | 2.49                     | 0.41              |
| 33:DA:11:G:C6      | 33:DA:12:U:C5     | 3.08                     | 0.41              |
| 33:DA:66:A:O4'     | 33:DA:173:U:C4    | 2.74                     | 0.41              |
| 33:DA:155:A:C2     | 33:DA:156:C:C4    | 3.08                     | 0.41              |
| 33:DA:172:A:C5     | 33:DA:174:A:N7    | 2.88                     | 0.41              |
| 33:DA:338:A:C6     | 33:DA:339:C:C4    | 3.08                     | 0.41              |
| 33:DA:495:A:C4'    | 33:DA:496:A:O5'   | 2.52                     | 0.41              |
| 33:DA:538:G:N1     | 33:DA:539:A:N3    | 2.69                     | 0.41              |
| 33:DA:725:G:N3     | 33:DA:726:C:C6    | 2.88                     | 0.41              |
| 33:DA:742:G:HO2'   | 33:DA:743:A:P     | 2.43                     | 0.41              |
| 33:DA:764:C:N4     | 33:DA:812:G:N1    | 2.67                     | 0.41              |
| 33:DA:793:U:C2     | 33:DA:1516:G:O2'  | 2.64                     | 0.41              |
| 33:DA:795:C:H4'    | 43:DK:127:ARG:HE  | 1.85                     | 0.41              |
| 33:DA:892:A:C6     | 33:DA:893:C:N4    | 2.89                     | 0.41              |
| 33:DA:1053:G:C5'   | 33:DA:1054:C:H5'  | 2.50                     | 0.41              |
| 33:DA:1065:U:C5    | 33:DA:1190:G:N3   | 2.88                     | 0.41              |
| 33:DA:1154:G:H2'   | 33:DA:1154:G:N3   | 2.35                     | 0.41              |
| 33:DA:1160:G:H2'   | 33:DA:1161:C:C5   | 2.55                     | 0.41              |
| 33:DA:1234:C:N4    | 33:DA:1235:U:C4   | 2.88                     | 0.41              |
| 33:DA:1355:G:H1    | 33:DA:1367:C:N4   | 2.18                     | 0.41              |
| 33:DA:1356:G:C2    | 33:DA:1357:A:C6   | 3.08                     | 0.41              |
| 33:DA:1386:G:N1    | 33:DA:1387:G:C6   | 2.88                     | 0.41              |
| 33:DA:1434:A:C5    | 33:DA:1435:G:C5   | 3.07                     | 0.41              |
| 33:DA:1476:A:C5    | 33:DA:1477:U:C4   | 3.08                     | 0.41              |
| 34:DB:141:GLU:CG   | 34:DB:142:LYS:N   | 2.83                     | 0.41              |
| 34:DB:164:ASP:O    | 34:DB:167:HIS:HB3 | 2.21                     | 0.41              |
| 35:DC:26:LYS:HG3   | 35:DC:27:GLU:N    | 2.35                     | 0.41              |
| 35:DC:102:ILE:HD12 | 35:DC:102:ILE:HA  | 1.83                     | 0.41              |
| 35:DC:112:ALA:H    | 35:DC:201:ILE:CD1 | 2.31                     | 0.41              |
| 37:DE:125:LYS:CD   | 37:DE:127:TYR:HB3 | 2.50                     | 0.41              |
| 38:DF:11:HIS:CE1   | 38:DF:12:PRO:HD2  | 2.56                     | 0.41              |
| 38:DF:18:VAL:O     | 38:DF:22:ILE:HG13 | 2.20                     | 0.41              |
| 40:DH:9:MET:HE1    | 40:DH:35:ILE:HD13 | 2.02                     | 0.41              |
| 40:DH:31:LEU:C     | 40:DH:33:VAL:N    | 2.74                     | 0.41              |
| 42:DJ:98:VAL:O     | 42:DJ:98:VAL:HG23 | 2.21                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 43:DK:21:HIS:ND1 | 43:DK:34:THR:CG2  | 2.83                     | 0.41              |
| 43:DK:35:ASP:OD1 | 43:DK:39:ASN:N    | 2.52                     | 0.41              |
| 43:DK:93:GLU:HG2 | 53:DU:20:ARG:HH22 | 1.85                     | 0.41              |
| 45:DM:76:ILE:O   | 45:DM:80:MET:HB3  | 2.19                     | 0.41              |
| 48:DP:11:ALA:O   | 48:DP:12:LYS:C    | 2.59                     | 0.41              |
| 48:DP:39:PHE:HD2 | 48:DP:41:PRO:HD3  | 1.86                     | 0.41              |
| 52:DT:66:ILE:O   | 52:DT:67:HIS:O    | 2.37                     | 0.41              |
| 4:A3:56:LEU:O    | 4:A3:57:VAL:C     | 2.59                     | 0.41              |
| 7:AA:42:C:C4     | 7:AA:43:C:N4      | 2.89                     | 0.41              |
| 8:AB:14:A:N6     | 8:AB:526:A:C2     | 2.89                     | 0.41              |
| 8:AB:44:A:H2'    | 8:AB:45:G:O4'     | 2.20                     | 0.41              |
| 8:AB:65:U:OP1    | 26:AT:76:ARG:HB2  | 2.18                     | 0.41              |
| 8:AB:147:C:H6    | 8:AB:147:C:H3'    | 1.85                     | 0.41              |
| 8:AB:396:G:O3'   | 32:AZ:28:VAL:CG2  | 2.66                     | 0.41              |
| 8:AB:431:U:H6    | 8:AB:431:U:O5'    | 2.04                     | 0.41              |
| 8:AB:529:A:C6    | 8:AB:2042:A:N3    | 2.88                     | 0.41              |
| 8:AB:530:G:C8    | 8:AB:2036:C:OP2   | 2.73                     | 0.41              |
| 8:AB:588:U:O5'   | 8:AB:588:U:H6     | 2.04                     | 0.41              |
| 8:AB:617:G:OP1   | 11:AE:102:ARG:HD3 | 2.20                     | 0.41              |
| 8:AB:719:C:H2'   | 8:AB:720:U:H5'    | 2.02                     | 0.41              |
| 8:AB:759:G:O4'   | 8:AB:1981:A:C2    | 2.72                     | 0.41              |
| 8:AB:761:A:N3    | 8:AB:761:A:H2'    | 2.36                     | 0.41              |
| 8:AB:783:A:H2'   | 8:AB:784:G:O5'    | 2.21                     | 0.41              |
| 8:AB:977:G:N1    | 8:AB:978:G:C5     | 2.89                     | 0.41              |
| 8:AB:1229:C:H2'  | 8:AB:1230:A:C8    | 2.55                     | 0.41              |
| 8:AB:1263:U:N3   | 8:AB:1264:A:C2    | 2.89                     | 0.41              |
| 8:AB:1274:A:H2'  | 8:AB:1275:A:C5'   | 2.50                     | 0.41              |
| 8:AB:1371:G:O5'  | 8:AB:1371:G:C8    | 2.69                     | 0.41              |
| 8:AB:1585:C:N4   | 8:AB:1586:A:N1    | 2.67                     | 0.41              |
| 8:AB:1660:G:O2'  | 8:AB:1661:G:H5'   | 2.20                     | 0.41              |
| 8:AB:1670:C:H1'  | 8:AB:1993:U:O2    | 2.21                     | 0.41              |
| 8:AB:1831:G:O2'  | 8:AB:1832:C:H5'   | 2.19                     | 0.41              |
| 8:AB:1877:A:C8   | 8:AB:1877:A:C3'   | 3.03                     | 0.41              |
| 8:AB:1931:U:H2'  | 8:AB:1932:A:O4'   | 2.20                     | 0.41              |
| 8:AB:2033:A:C2   | 8:AB:2036:C:C5    | 3.08                     | 0.41              |
| 8:AB:2199:A:C3'  | 8:AB:2200:C:H5'   | 2.51                     | 0.41              |
| 8:AB:2281:A:C2   | 8:AB:2282:G:C5    | 3.09                     | 0.41              |
| 8:AB:2313:C:O4'  | 12:AF:36:ASN:OD1  | 2.38                     | 0.41              |
| 8:AB:2373:G:C2   | 8:AB:2381:A:N3    | 2.88                     | 0.41              |
| 8:AB:2430:A:N3   | 8:AB:2430:A:C2'   | 2.82                     | 0.41              |
| 8:AB:2679:A:C2   | 8:AB:2680:U:C5    | 3.08                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2731:G:N2    | 8:AB:2732:G:C6    | 2.89                     | 0.41              |
| 8:AB:2768:U:O4    | 8:AB:2769:U:C4    | 2.72                     | 0.41              |
| 8:AB:2809:A:N6    | 8:AB:2891:U:O4'   | 2.53                     | 0.41              |
| 9:AC:42:ARG:C     | 9:AC:43:ASN:ND2   | 2.74                     | 0.41              |
| 9:AC:160:TYR:HA   | 9:AC:193:GLU:HG2  | 2.03                     | 0.41              |
| 10:AD:13:ARG:NE   | 10:AD:13:ARG:CA   | 2.76                     | 0.41              |
| 10:AD:52:THR:CA   | 10:AD:75:ALA:HB1  | 2.51                     | 0.41              |
| 11:AE:98:LYS:O    | 11:AE:100:MET:N   | 2.54                     | 0.41              |
| 11:AE:146:VAL:O   | 11:AE:148:ILE:N   | 2.53                     | 0.41              |
| 11:AE:187:VAL:O   | 11:AE:187:VAL:CG2 | 2.67                     | 0.41              |
| 12:AF:33:ILE:HD11 | 12:AF:90:LEU:CB   | 2.44                     | 0.41              |
| 12:AF:36:ASN:HA   | 12:AF:87:LYS:H    | 1.85                     | 0.41              |
| 13:AG:8:VAL:O     | 13:AG:48:THR:HA   | 2.21                     | 0.41              |
| 14:AH:2:GLN:HE22  | 14:AH:20:ASN:C    | 2.24                     | 0.41              |
| 14:AH:68:ARG:O    | 14:AH:72:ILE:HG22 | 2.20                     | 0.41              |
| 14:AH:134:VAL:O   | 14:AH:135:HIS:HD2 | 2.04                     | 0.41              |
| 15:AI:52:LEU:HD12 | 15:AI:52:LEU:H    | 1.84                     | 0.41              |
| 16:AJ:16:TYR:O    | 16:AJ:17:VAL:HG23 | 2.20                     | 0.41              |
| 16:AJ:120:ARG:NH2 | 16:AJ:123:LYS:HZ2 | 2.18                     | 0.41              |
| 16:AJ:127:GLY:O   | 16:AJ:128:ASN:C   | 2.58                     | 0.41              |
| 17:AK:76:VAL:O    | 22:AP:74:GLN:CB   | 2.63                     | 0.41              |
| 19:AM:42:THR:CG2  | 19:AM:45:GLN:NE2  | 2.84                     | 0.41              |
| 24:AR:5:PHE:CA    | 24:AR:12:HIS:ND1  | 2.84                     | 0.41              |
| 24:AR:40:MET:HA   | 24:AR:54:VAL:HG13 | 2.01                     | 0.41              |
| 27:AU:85:ARG:HE   | 27:AU:86:PHE:HE1  | 1.67                     | 0.41              |
| 30:AX:22:LEU:CA   | 30:AX:47:ARG:NH2  | 2.77                     | 0.41              |
| 30:AX:49:ASP:CB   | 30:AX:52:ARG:HG3  | 2.28                     | 0.41              |
| 31:AY:5:LYS:H     | 31:AY:36:GLU:HB3  | 1.85                     | 0.41              |
| 31:AY:52:PHE:O    | 31:AY:53:MET:O    | 2.38                     | 0.41              |
| 32:AZ:3:LYS:CG    | 32:AZ:6:HIS:HB3   | 2.51                     | 0.41              |
| 32:AZ:17:SER:HB3  | 32:AZ:20:ASN:HA   | 2.02                     | 0.41              |
| 32:AZ:59:ARG:HG3  | 32:AZ:62:LYS:CA   | 2.50                     | 0.41              |
| 33:BA:369:G:N1    | 33:BA:370:C:C4    | 2.89                     | 0.41              |
| 33:BA:373:A:H3'   | 33:BA:373:A:P     | 2.60                     | 0.41              |
| 33:BA:585:G:O5'   | 33:BA:585:G:C8    | 2.71                     | 0.41              |
| 33:BA:684:U:H2'   | 33:BA:685:G:C8    | 2.56                     | 0.41              |
| 33:BA:755:G:C8    | 33:BA:755:G:H3'   | 2.56                     | 0.41              |
| 33:BA:884:U:H4'   | 33:BA:885:G:H5''  | 2.01                     | 0.41              |
| 33:BA:955:U:O2    | 33:BA:1225:A:N1   | 2.53                     | 0.41              |
| 33:BA:1053:G:H4'  | 33:BA:1055:A:OP1  | 2.20                     | 0.41              |
| 33:BA:1077:G:H22  | 33:BA:1079:G:H3'  | 1.78                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 33:BA:1095:U:OP1 | 33:BA:1108:G:N2   | 2.49                     | 0.41              |
| 33:BA:1126:U:O2  | 33:BA:1280:A:C3'  | 2.69                     | 0.41              |
| 33:BA:1181:G:C6  | 33:BA:1182:G:N1   | 2.88                     | 0.41              |
| 33:BA:1258:G:N1  | 33:BA:1278:G:N2   | 2.68                     | 0.41              |
| 33:BA:1404:C:N4  | 33:BA:1497:G:H22  | 2.18                     | 0.41              |
| 33:BA:1522:U:O2  | 33:BA:1523:G:C8   | 2.74                     | 0.41              |
| 35:BC:13:ILE:O   | 35:BC:14:VAL:HG23 | 2.21                     | 0.41              |
| 35:BC:163:ARG:CG | 35:BC:164:THR:H   | 2.33                     | 0.41              |
| 40:BH:103:VAL:HA | 40:BH:123:GLU:O   | 2.20                     | 0.41              |
| 42:BJ:80:THR:H   | 42:BJ:84:VAL:HG11 | 1.84                     | 0.41              |
| 42:BJ:96:VAL:O   | 42:BJ:97:ASP:C    | 2.58                     | 0.41              |
| 44:BL:74:GLN:C   | 44:BL:76:HIS:H    | 2.24                     | 0.41              |
| 45:BM:43:LYS:O   | 45:BM:47:LEU:HD13 | 2.20                     | 0.41              |
| 48:BP:1:MET:O    | 48:BP:3:THR:N     | 2.52                     | 0.41              |
| 2:C1:40:PRO:HB2  | 2:C1:41:VAL:H     | 1.65                     | 0.41              |
| 4:C3:33:THR:HG22 | 4:C3:40:LYS:HE2   | 2.03                     | 0.41              |
| 7:CA:17:C:C5     | 7:CA:18:G:N7      | 2.88                     | 0.41              |
| 7:CA:42:C:C6     | 12:CF:65:LEU:HD22 | 2.53                     | 0.41              |
| 7:CA:78:A:C8     | 7:CA:99:A:N6      | 2.89                     | 0.41              |
| 7:CA:112:G:O5'   | 7:CA:112:G:C8     | 2.71                     | 0.41              |
| 8:CB:157:C:H2'   | 8:CB:158:U:O4'    | 2.20                     | 0.41              |
| 8:CB:188:G:OP2   | 32:CZ:12:ILE:CD1  | 2.69                     | 0.41              |
| 8:CB:375:G:O6    | 8:CB:400:G:C2     | 2.74                     | 0.41              |
| 8:CB:387:U:H6    | 8:CB:387:U:H5'    | 1.84                     | 0.41              |
| 8:CB:407:G:N2    | 8:CB:421:C:N1     | 2.69                     | 0.41              |
| 8:CB:475:C:N4    | 8:CB:481:G:O6     | 2.53                     | 0.41              |
| 8:CB:529:A:C4'   | 8:CB:530:G:OP1    | 2.69                     | 0.41              |
| 8:CB:590:A:C2    | 8:CB:668:A:C2     | 3.08                     | 0.41              |
| 8:CB:670:A:O5'   | 8:CB:670:A:C8     | 2.72                     | 0.41              |
| 8:CB:692:C:C5    | 8:CB:693:A:N7     | 2.88                     | 0.41              |
| 8:CB:719:C:C2'   | 8:CB:720:U:H5'    | 2.51                     | 0.41              |
| 8:CB:789:A:OP1   | 8:CB:789:A:H3'    | 2.20                     | 0.41              |
| 8:CB:942:G:OP1   | 18:CL:39:LYS:CD   | 2.68                     | 0.41              |
| 8:CB:979:A:C2    | 8:CB:982:C:O2     | 2.72                     | 0.41              |
| 8:CB:1106:G:H3'  | 8:CB:1106:G:C8    | 2.56                     | 0.41              |
| 8:CB:1150:C:H6   | 8:CB:1150:C:O5'   | 2.04                     | 0.41              |
| 8:CB:1157:G:OP2  | 8:CB:1158:C:OP2   | 2.38                     | 0.41              |
| 8:CB:1218:G:N1   | 8:CB:1219:U:N3    | 2.69                     | 0.41              |
| 8:CB:1270:C:C2'  | 8:CB:1648:U:H5''  | 2.50                     | 0.41              |
| 8:CB:1291:C:O2'  | 8:CB:1292:G:H5'   | 2.20                     | 0.41              |
| 8:CB:1459:G:C8   | 8:CB:1459:G:H3'   | 2.56                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1495:A:C2     | 8:CB:1578:U:O2     | 2.73                     | 0.41              |
| 8:CB:1519:G:C6     | 8:CB:1520:U:C4     | 3.09                     | 0.41              |
| 8:CB:1675:C:O2     | 10:CD:133:THR:CA   | 2.67                     | 0.41              |
| 8:CB:1754:A:C4     | 8:CB:1755:A:N7     | 2.88                     | 0.41              |
| 8:CB:2201:G:N1     | 8:CB:2223:G:C4     | 2.88                     | 0.41              |
| 8:CB:2235:G:N2     | 8:CB:2236:U:H1'    | 2.35                     | 0.41              |
| 8:CB:2320:U:OP2    | 8:CB:2320:U:C2     | 2.74                     | 0.41              |
| 8:CB:2364:C:H2'    | 8:CB:2365:G:O4'    | 2.20                     | 0.41              |
| 8:CB:2511:U:O4     | 8:CB:2512:C:C4     | 2.73                     | 0.41              |
| 8:CB:2522:U:C2'    | 8:CB:2523:G:H5'    | 2.50                     | 0.41              |
| 8:CB:2560:A:C2     | 8:CB:2561:U:H1'    | 2.55                     | 0.41              |
| 9:CC:17:LYS:O      | 9:CC:206:LYS:HD2   | 2.20                     | 0.41              |
| 9:CC:235:GLU:HG3   | 9:CC:236:GLY:N     | 2.36                     | 0.41              |
| 10:CD:32:ASN:C     | 10:CD:34:VAL:H     | 2.23                     | 0.41              |
| 10:CD:101:PHE:O    | 10:CD:103:ASP:N    | 2.53                     | 0.41              |
| 10:CD:181:ASP:HB3  | 10:CD:184:ARG:CB   | 2.45                     | 0.41              |
| 11:CE:58:LYS:NZ    | 11:CE:61:ARG:C     | 2.74                     | 0.41              |
| 12:CF:159:ALA:HB1  | 12:CF:164:GLU:CB   | 2.50                     | 0.41              |
| 13:CG:116:LEU:HD11 | 13:CG:121:THR:HA   | 2.02                     | 0.41              |
| 14:CH:27:ARG:O     | 14:CH:27:ARG:HG3   | 2.21                     | 0.41              |
| 15:CI:82:ALA:HB3   | 15:CI:108:ILE:HD11 | 2.03                     | 0.41              |
| 15:CI:104:GLN:HA   | 15:CI:107:GLU:HB2  | 2.03                     | 0.41              |
| 16:CJ:57:LEU:C     | 16:CJ:58:ASN:OD1   | 2.58                     | 0.41              |
| 16:CJ:78:THR:C     | 16:CJ:80:HIS:H     | 2.23                     | 0.41              |
| 18:CL:14:LYS:HZ1   | 18:CL:15:ALA:HB2   | 1.85                     | 0.41              |
| 18:CL:79:LEU:HA    | 18:CL:82:LEU:HD12  | 2.01                     | 0.41              |
| 18:CL:86:GLU:O     | 18:CL:86:GLU:CG    | 2.68                     | 0.41              |
| 20:CN:6:SER:O      | 20:CN:7:GLY:O      | 2.39                     | 0.41              |
| 21:CO:97:PHE:CD1   | 21:CO:98:GLN:N     | 2.89                     | 0.41              |
| 22:CP:64:SER:HB3   | 22:CP:71:ARG:NH1   | 2.36                     | 0.41              |
| 23:CQ:93:ILE:HG13  | 24:CR:10:LYS:HZ1   | 1.84                     | 0.41              |
| 23:CQ:101:ASP:O    | 23:CQ:102:LYS:C    | 2.58                     | 0.41              |
| 24:CR:74:ILE:O     | 24:CR:75:VAL:HG22  | 2.20                     | 0.41              |
| 30:CX:1:MET:HE3    | 30:CX:5:GLU:CB     | 2.39                     | 0.41              |
| 31:CY:24:LEU:C     | 31:CY:26:LEU:H     | 2.23                     | 0.41              |
| 33:DA:35:G:H2'     | 33:DA:36:C:H6      | 1.84                     | 0.41              |
| 33:DA:39:G:C6      | 33:DA:40:C:C4      | 3.09                     | 0.41              |
| 33:DA:59:A:C4      | 33:DA:354:G:C2     | 3.08                     | 0.41              |
| 33:DA:129:A:O2'    | 33:DA:130:A:C8     | 2.67                     | 0.41              |
| 33:DA:161:A:C4     | 33:DA:162:A:C8     | 3.09                     | 0.41              |
| 33:DA:198:G:C5'    | 33:DA:198:G:C8     | 3.04                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:410:G:P     | 36:DD:25:ARG:HE    | 2.44                     | 0.41              |
| 33:DA:448:A:C6    | 33:DA:449:G:N3     | 2.88                     | 0.41              |
| 33:DA:500:G:H8    | 33:DA:500:G:O5'    | 2.02                     | 0.41              |
| 33:DA:518:C:H6    | 33:DA:529:G:C2     | 2.38                     | 0.41              |
| 33:DA:536:C:O5'   | 33:DA:536:C:C6     | 2.69                     | 0.41              |
| 33:DA:540:G:H21   | 36:DD:39:GLN:NE2   | 2.18                     | 0.41              |
| 33:DA:635:A:H2'   | 33:DA:636:U:C6     | 2.56                     | 0.41              |
| 33:DA:685:G:N3    | 33:DA:686:U:O4     | 2.54                     | 0.41              |
| 33:DA:720:C:H3'   | 33:DA:721:G:H2'    | 2.02                     | 0.41              |
| 33:DA:795:C:H1'   | 33:DA:1506:U:C6    | 2.56                     | 0.41              |
| 33:DA:798:U:N3    | 33:DA:799:G:C8     | 2.87                     | 0.41              |
| 33:DA:921:U:O2    | 37:DE:22:LYS:O     | 2.39                     | 0.41              |
| 33:DA:997:U:C2'   | 33:DA:998:C:H5'    | 2.51                     | 0.41              |
| 33:DA:1009:U:O4   | 33:DA:1020:G:O6    | 2.38                     | 0.41              |
| 33:DA:1118:U:O2   | 33:DA:1179:A:C6    | 2.74                     | 0.41              |
| 33:DA:1133:G:C5   | 33:DA:1134:G:C8    | 3.08                     | 0.41              |
| 33:DA:1138:G:C6   | 33:DA:1140:C:O2    | 2.73                     | 0.41              |
| 33:DA:1142:G:C8   | 33:DA:1142:G:OP2   | 2.73                     | 0.41              |
| 33:DA:1161:C:O2   | 33:DA:1175:G:N1    | 2.49                     | 0.41              |
| 33:DA:1260:G:H21  | 33:DA:1275:A:H62   | 1.68                     | 0.41              |
| 33:DA:1507:A:N1   | 33:DA:1508:A:C6    | 2.88                     | 0.41              |
| 34:DB:16:GLY:HA2  | 34:DB:40:ILE:CG1   | 2.49                     | 0.41              |
| 34:DB:31:PHE:CB   | 34:DB:41:ASN:HB2   | 2.43                     | 0.41              |
| 34:DB:38:HIS:O    | 34:DB:39:ILE:HD13  | 2.20                     | 0.41              |
| 34:DB:140:LEU:O   | 34:DB:141:GLU:C    | 2.59                     | 0.41              |
| 34:DB:217:ALA:O   | 34:DB:221:ARG:HB2  | 2.20                     | 0.41              |
| 35:DC:52:SER:CA   | 35:DC:113:LYS:HD3  | 2.41                     | 0.41              |
| 36:DD:16:THR:HG22 | 36:DD:17:ASP:N     | 2.32                     | 0.41              |
| 36:DD:28:ASP:O    | 36:DD:29:THR:O     | 2.38                     | 0.41              |
| 36:DD:185:PRO:CB  | 36:DD:190:LEU:HD11 | 2.46                     | 0.41              |
| 41:DI:6:TYR:CD1   | 41:DI:7:GLY:N      | 2.88                     | 0.41              |
| 41:DI:71:ILE:HG22 | 41:DI:72:SER:N     | 2.35                     | 0.41              |
| 45:DM:48:SER:C    | 45:DM:50:GLY:N     | 2.71                     | 0.41              |
| 52:DT:71:ALA:O    | 52:DT:74:HIS:N     | 2.53                     | 0.41              |
| 1:A0:38:LEU:O     | 1:A0:39:ARG:NE     | 2.45                     | 0.41              |
| 7:AA:99:A:N3      | 7:AA:100:G:C8      | 2.88                     | 0.41              |
| 8:AB:39:G:C6      | 8:AB:40:U:O4       | 2.74                     | 0.41              |
| 8:AB:83:A:C5      | 8:AB:101:A:OP2     | 2.73                     | 0.41              |
| 8:AB:237:C:C6     | 8:AB:238:C:H5      | 2.39                     | 0.41              |
| 8:AB:349:U:H2'    | 8:AB:350:G:H5'     | 2.01                     | 0.41              |
| 8:AB:535:G:C5     | 8:AB:536:G:C8      | 3.09                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:693:A:H2'    | 8:AB:694:U:O4'     | 2.21                     | 0.41              |
| 8:AB:759:G:C5     | 8:AB:760:G:N7      | 2.89                     | 0.41              |
| 8:AB:861:A:O2'    | 8:AB:862:G:H5'     | 2.21                     | 0.41              |
| 8:AB:925:A:C2     | 8:AB:926:G:C4      | 3.08                     | 0.41              |
| 8:AB:1199:U:H2'   | 8:AB:1200:C:H6     | 1.82                     | 0.41              |
| 8:AB:1263:U:C4    | 8:AB:1264:A:N1     | 2.89                     | 0.41              |
| 8:AB:1285:A:C5    | 8:AB:1329:U:C4     | 3.09                     | 0.41              |
| 8:AB:1477:A:H1'   | 8:AB:1515:A:N6     | 2.35                     | 0.41              |
| 8:AB:1485:U:O2'   | 8:AB:1486:U:H5'    | 2.20                     | 0.41              |
| 8:AB:1668:A:C5    | 8:AB:1674:G:C6     | 3.09                     | 0.41              |
| 8:AB:1670:C:C5'   | 8:AB:1671:U:OP2    | 2.68                     | 0.41              |
| 8:AB:1719:G:C2    | 8:AB:1742:U:O2     | 2.74                     | 0.41              |
| 8:AB:1831:G:C4    | 8:AB:1832:C:C6     | 3.08                     | 0.41              |
| 8:AB:1933:G:H2'   | 8:AB:1934:C:C5'    | 2.51                     | 0.41              |
| 8:AB:1959:G:C2    | 8:AB:1960:A:N3     | 2.89                     | 0.41              |
| 8:AB:1960:A:C8    | 8:AB:1961:C:H5     | 2.39                     | 0.41              |
| 8:AB:1978:A:H2'   | 8:AB:1979:U:O4'    | 2.20                     | 0.41              |
| 8:AB:2010:G:H2'   | 8:AB:2011:U:C5'    | 2.50                     | 0.41              |
| 8:AB:2098:U:C2    | 8:AB:2099:U:C6     | 3.09                     | 0.41              |
| 8:AB:2230:G:C5    | 8:AB:2231:U:C5     | 3.09                     | 0.41              |
| 8:AB:2334:U:OP2   | 21:AO:7:ARG:CG     | 2.68                     | 0.41              |
| 8:AB:2459:A:N6    | 8:AB:2493:U:H3     | 2.18                     | 0.41              |
| 8:AB:2665:A:O2'   | 8:AB:2666:C:H5'    | 2.21                     | 0.41              |
| 8:AB:2746:U:O4'   | 13:AG:138:GLN:HB2  | 2.20                     | 0.41              |
| 8:AB:2885:G:C4    | 8:AB:2886:A:H8     | 2.37                     | 0.41              |
| 9:AC:107:LYS:HB3  | 9:AC:108:GLY:H     | 1.72                     | 0.41              |
| 9:AC:112:GLY:O    | 9:AC:115:ILE:HD11  | 2.20                     | 0.41              |
| 12:AF:12:VAL:O    | 12:AF:14:LYS:N     | 2.47                     | 0.41              |
| 12:AF:159:ALA:HB1 | 12:AF:164:GLU:CB   | 2.51                     | 0.41              |
| 14:AH:73:ASN:HD22 | 14:AH:74:ALA:N     | 2.17                     | 0.41              |
| 16:AJ:24:THR:O    | 16:AJ:25:LEU:O     | 2.39                     | 0.41              |
| 16:AJ:25:LEU:HD12 | 16:AJ:64:VAL:H     | 1.85                     | 0.41              |
| 16:AJ:57:LEU:C    | 16:AJ:58:ASN:OD1   | 2.58                     | 0.41              |
| 18:AL:94:THR:CB   | 18:AL:103:ILE:HG12 | 2.50                     | 0.41              |
| 19:AM:18:ARG:HD2  | 19:AM:18:ARG:N     | 2.32                     | 0.41              |
| 19:AM:25:ASP:CB   | 19:AM:98:PRO:HA    | 2.51                     | 0.41              |
| 20:AN:52:ILE:O    | 20:AN:54:LEU:N     | 2.54                     | 0.41              |
| 20:AN:65:LEU:HB3  | 20:AN:69:ARG:HH11  | 1.78                     | 0.41              |
| 20:AN:96:ARG:HH22 | 20:AN:116:VAL:HG13 | 1.86                     | 0.41              |
| 22:AP:24:THR:HG23 | 22:AP:109:ILE:HG21 | 2.01                     | 0.41              |
| 22:AP:50:ARG:HG2  | 22:AP:99:LEU:N     | 2.35                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AQ:40:LYS:C     | 23:AQ:42:GLY:N     | 2.72                     | 0.41              |
| 24:AR:5:PHE:H      | 24:AR:12:HIS:HB2   | 1.85                     | 0.41              |
| 24:AR:97:LYS:O     | 24:AR:98:ILE:HG12  | 2.21                     | 0.41              |
| 27:AU:40:LEU:HD13  | 27:AU:41:VAL:CG1   | 2.51                     | 0.41              |
| 27:AU:85:ARG:O     | 27:AU:87:GLU:N     | 2.53                     | 0.41              |
| 29:AW:20:LEU:H     | 29:AW:20:LEU:HG    | 1.45                     | 0.41              |
| 31:AY:50:VAL:O     | 31:AY:51:SER:C     | 2.58                     | 0.41              |
| 33:BA:110:C:O2     | 33:BA:110:C:C2'    | 2.68                     | 0.41              |
| 33:BA:111:G:H5''   | 33:BA:112:G:OP2    | 2.20                     | 0.41              |
| 33:BA:115:G:C2     | 33:BA:313:A:C2     | 3.09                     | 0.41              |
| 33:BA:123:U:C4     | 33:BA:124:C:N4     | 2.89                     | 0.41              |
| 33:BA:138:G:O6     | 33:BA:226:G:C6     | 2.73                     | 0.41              |
| 33:BA:290:C:O2'    | 33:BA:291:U:H5'    | 2.21                     | 0.41              |
| 33:BA:318:G:C2     | 33:BA:319:G:C5     | 3.08                     | 0.41              |
| 33:BA:409:U:C2     | 33:BA:410:G:C5     | 3.09                     | 0.41              |
| 33:BA:416:G:H1     | 33:BA:427:U:H3     | 1.67                     | 0.41              |
| 33:BA:505:G:N1     | 33:BA:506:G:C6     | 2.88                     | 0.41              |
| 33:BA:627:G:C2'    | 33:BA:628:G:C8     | 2.99                     | 0.41              |
| 33:BA:628:G:C2     | 33:BA:629:A:C4     | 3.09                     | 0.41              |
| 33:BA:740:U:C2'    | 33:BA:741:G:H5''   | 2.50                     | 0.41              |
| 33:BA:811:C:O2     | 33:BA:811:C:C2'    | 2.68                     | 0.41              |
| 33:BA:867:G:C2     | 33:BA:868:C:C4     | 3.09                     | 0.41              |
| 33:BA:888:G:H1'    | 33:BA:909:A:H61    | 1.85                     | 0.41              |
| 33:BA:910:C:H2'    | 33:BA:911:U:H5'    | 2.02                     | 0.41              |
| 33:BA:981:U:C5     | 33:BA:982:U:O2'    | 2.69                     | 0.41              |
| 33:BA:1048:G:H4'   | 46:BN:2:LYS:HE2    | 2.02                     | 0.41              |
| 33:BA:1080:A:H3'   | 33:BA:1081:A:O4'   | 2.20                     | 0.41              |
| 33:BA:1269:A:N1    | 33:BA:1312:G:O2'   | 2.47                     | 0.41              |
| 33:BA:1323:G:O6    | 51:BS:3:SER:CB     | 2.69                     | 0.41              |
| 33:BA:1372:U:H3'   | 33:BA:1373:G:H8    | 1.85                     | 0.41              |
| 33:BA:1376:U:C5'   | 39:BG:101:ARG:HH22 | 2.33                     | 0.41              |
| 33:BA:1479:C:H6    | 33:BA:1479:C:O5'   | 2.03                     | 0.41              |
| 34:BB:17:HIS:CD2   | 34:BB:18:GLN:HE22  | 2.37                     | 0.41              |
| 34:BB:209:VAL:HG23 | 34:BB:210:THR:N    | 2.36                     | 0.41              |
| 34:BB:213:LEU:HD23 | 34:BB:213:LEU:HA   | 1.90                     | 0.41              |
| 36:BD:41:GLY:O     | 36:BD:45:PRO:HG3   | 2.20                     | 0.41              |
| 38:BF:17:GLN:C     | 38:BF:19:PRO:HD2   | 2.41                     | 0.41              |
| 40:BH:63:LYS:HB3   | 40:BH:63:LYS:HE2   | 1.90                     | 0.41              |
| 45:BM:85:TYR:CZ    | 45:BM:89:ARG:NE    | 2.88                     | 0.41              |
| 46:BN:88:MET:CE    | 46:BN:88:MET:HA    | 2.51                     | 0.41              |
| 48:BP:4:ILE:HG23   | 48:BP:20:VAL:O     | 2.21                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 48:BP:53:ASP:OD1 | 48:BP:56:ARG:HB2  | 2.20                     | 0.41              |
| 53:BU:11:PHE:HA  | 35:DC:71:ARG:HB3  | 2.02                     | 0.41              |
| 7:CA:6:G:C4      | 7:CA:7:G:N7       | 2.89                     | 0.41              |
| 7:CA:46:A:C5     | 7:CA:47:C:C4      | 3.08                     | 0.41              |
| 8:CB:62:U:C2'    | 8:CB:63:A:C8      | 3.00                     | 0.41              |
| 8:CB:200:U:O4    | 8:CB:248:G:C2     | 2.74                     | 0.41              |
| 8:CB:218:A:H2'   | 8:CB:219:A:H8     | 1.85                     | 0.41              |
| 8:CB:247:G:C2'   | 8:CB:248:G:O5'    | 2.69                     | 0.41              |
| 8:CB:309:A:C6    | 8:CB:330:A:N7     | 2.88                     | 0.41              |
| 8:CB:350:G:H2'   | 8:CB:351:C:O4'    | 2.21                     | 0.41              |
| 8:CB:510:C:C4    | 8:CB:511:U:C5     | 3.08                     | 0.41              |
| 8:CB:587:C:C2    | 8:CB:671:C:C6     | 3.09                     | 0.41              |
| 8:CB:673:C:N3    | 8:CB:808:G:C2     | 2.89                     | 0.41              |
| 8:CB:687:C:O2'   | 8:CB:688:U:H5'    | 2.21                     | 0.41              |
| 8:CB:704:G:N3    | 8:CB:726:G:C2     | 2.88                     | 0.41              |
| 8:CB:826:U:C2    | 8:CB:828:U:H1'    | 2.56                     | 0.41              |
| 8:CB:925:A:C6    | 8:CB:926:G:C6     | 3.08                     | 0.41              |
| 8:CB:988:A:N1    | 8:CB:989:G:N2     | 2.69                     | 0.41              |
| 8:CB:1062:G:N2   | 15:CI:91:LYS:HG3  | 2.36                     | 0.41              |
| 8:CB:1071:G:C2   | 8:CB:1072:C:C2    | 3.09                     | 0.41              |
| 8:CB:1100:C:H2'  | 8:CB:1101:U:C5    | 2.56                     | 0.41              |
| 8:CB:1213:A:C4   | 8:CB:1214:A:C8    | 3.09                     | 0.41              |
| 8:CB:1262:A:O2'  | 8:CB:1263:U:H5'   | 2.20                     | 0.41              |
| 8:CB:1353:A:C8   | 8:CB:1378:A:C6    | 3.08                     | 0.41              |
| 8:CB:1557:C:H3'  | 8:CB:1558:C:C5'   | 2.51                     | 0.41              |
| 8:CB:1571:A:C2   | 8:CB:1572:A:N7    | 2.88                     | 0.41              |
| 8:CB:1574:C:C4   | 8:CB:1575:C:N4    | 2.88                     | 0.41              |
| 8:CB:1657:U:P    | 10:CD:141:ARG:HG3 | 2.61                     | 0.41              |
| 8:CB:1681:G:N3   | 8:CB:1762:A:C4    | 2.89                     | 0.41              |
| 8:CB:1761:C:C4   | 8:CB:1762:A:C5    | 3.09                     | 0.41              |
| 8:CB:1761:C:C6   | 8:CB:1762:A:N7    | 2.89                     | 0.41              |
| 8:CB:1805:A:H2'  | 8:CB:1806:C:H5'   | 2.02                     | 0.41              |
| 8:CB:1838:C:C6   | 8:CB:1898:U:H5    | 2.39                     | 0.41              |
| 8:CB:1959:G:N1   | 8:CB:1960:A:C2    | 2.89                     | 0.41              |
| 8:CB:2011:U:C6   | 8:CB:2012:G:C8    | 3.08                     | 0.41              |
| 8:CB:2048:G:C6   | 8:CB:2621:G:N2    | 2.88                     | 0.41              |
| 8:CB:2050:C:C4   | 8:CB:2051:A:N1    | 2.89                     | 0.41              |
| 8:CB:2300:C:H3'  | 8:CB:2300:C:C6    | 2.54                     | 0.41              |
| 8:CB:2359:C:O2'  | 8:CB:2360:G:H5'   | 2.20                     | 0.41              |
| 8:CB:2472:G:C5   | 8:CB:2475:C:C4    | 3.09                     | 0.41              |
| 8:CB:2472:G:C8   | 8:CB:2472:G:H3'   | 2.56                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2583:G:O2'    | 8:CB:2584:U:H5'    | 2.20                     | 0.41              |
| 8:CB:2848:G:HO2'   | 8:CB:2849:U:H5     | 1.67                     | 0.41              |
| 8:CB:2850:A:C5     | 8:CB:2851:A:C8     | 3.08                     | 0.41              |
| 9:CC:35:LYS:O      | 9:CC:63:ILE:HA     | 2.21                     | 0.41              |
| 9:CC:161:VAL:HG23  | 9:CC:193:GLU:OE2   | 2.21                     | 0.41              |
| 9:CC:180:MET:CE    | 9:CC:265:PHE:CE2   | 3.04                     | 0.41              |
| 9:CC:268:ARG:O     | 9:CC:269:ARG:CD    | 2.65                     | 0.41              |
| 10:CD:15:PHE:O     | 10:CD:18:ASP:HB2   | 2.20                     | 0.41              |
| 10:CD:51:THR:O     | 10:CD:52:THR:C     | 2.59                     | 0.41              |
| 10:CD:86:GLU:O     | 10:CD:88:GLU:OE2   | 2.39                     | 0.41              |
| 11:CE:30:GLN:O     | 11:CE:34:ALA:HB2   | 2.20                     | 0.41              |
| 11:CE:58:LYS:HZ2   | 11:CE:61:ARG:C     | 2.24                     | 0.41              |
| 11:CE:191:ASP:C    | 11:CE:194:LYS:NZ   | 2.73                     | 0.41              |
| 12:CF:84:ILE:O     | 12:CF:84:ILE:CG1   | 2.68                     | 0.41              |
| 14:CH:35:LYS:HB2   | 14:CH:36:ALA:H     | 1.76                     | 0.41              |
| 15:CI:18:ASN:N     | 15:CI:19:PRO:HD2   | 2.36                     | 0.41              |
| 15:CI:82:ALA:O     | 15:CI:100:ILE:HG12 | 2.20                     | 0.41              |
| 16:CJ:84:ILE:CG2   | 16:CJ:85:LYS:H     | 2.33                     | 0.41              |
| 17:CK:45:GLU:HA    | 17:CK:45:GLU:OE2   | 2.21                     | 0.41              |
| 18:CL:41:ARG:HG2   | 18:CL:41:ARG:NH1   | 2.35                     | 0.41              |
| 18:CL:126:ARG:HH11 | 18:CL:127:VAL:N    | 2.16                     | 0.41              |
| 19:CM:47:GLU:OE1   | 19:CM:50:ARG:HG2   | 2.21                     | 0.41              |
| 21:CO:23:ALA:HB1   | 21:CO:91:SER:HA    | 2.03                     | 0.41              |
| 21:CO:63:LYS:HB3   | 21:CO:64:TYR:H     | 1.66                     | 0.41              |
| 23:CQ:61:ILE:HG22  | 23:CQ:64:ILE:HD12  | 2.02                     | 0.41              |
| 23:CQ:100:PHE:HE2  | 24:CR:13:ARG:NH2   | 2.19                     | 0.41              |
| 24:CR:82:HIS:CE1   | 24:CR:84:ARG:HH21  | 2.39                     | 0.41              |
| 25:CS:27:LYS:CB    | 25:CS:28:LYS:HD2   | 2.48                     | 0.41              |
| 25:CS:41:LYS:HG3   | 25:CS:42:LYS:H     | 1.83                     | 0.41              |
| 26:CT:16:VAL:O     | 26:CT:17:SER:CB    | 2.65                     | 0.41              |
| 27:CU:1:ALA:N      | 55:CU:5001:HOH:O   | 2.48                     | 0.41              |
| 28:CV:9:ARG:NH1    | 28:CV:27:PRO:HB2   | 2.35                     | 0.41              |
| 29:CW:35:ILE:HG12  | 29:CW:70:VAL:HB    | 2.03                     | 0.41              |
| 30:CX:32:ALA:O     | 30:CX:33:ALA:HB3   | 2.20                     | 0.41              |
| 30:CX:40:SER:CA    | 30:CX:42:LEU:HD23  | 2.51                     | 0.41              |
| 33:DA:27:G:C6      | 33:DA:28:A:C6      | 3.08                     | 0.41              |
| 33:DA:101:A:N6     | 33:DA:102:G:N7     | 2.68                     | 0.41              |
| 33:DA:146:G:H2'    | 33:DA:147:G:H5'    | 2.03                     | 0.41              |
| 33:DA:167:A:C2     | 33:DA:168:G:C8     | 3.08                     | 0.41              |
| 33:DA:182:A:C2     | 33:DA:184:G:C6     | 3.08                     | 0.41              |
| 33:DA:191:G:H8     | 33:DA:191:G:H5''   | 1.85                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:298:A:C2    | 33:DA:299:G:C2     | 3.09                     | 0.41              |
| 33:DA:515:G:N2    | 33:DA:537:G:C1'    | 2.81                     | 0.41              |
| 33:DA:555:U:C2    | 33:DA:556:C:C6     | 3.09                     | 0.41              |
| 33:DA:587:G:H4'   | 40:DH:3:GLN:O      | 2.20                     | 0.41              |
| 33:DA:610:U:O2    | 33:DA:610:U:O4'    | 2.39                     | 0.41              |
| 33:DA:639:G:C8    | 33:DA:639:G:C5'    | 3.04                     | 0.41              |
| 33:DA:669:G:C6    | 33:DA:670:G:N7     | 2.88                     | 0.41              |
| 33:DA:713:G:H5''  | 33:DA:714:G:OP2    | 2.21                     | 0.41              |
| 33:DA:766:A:N6    | 33:DA:767:A:N1     | 2.69                     | 0.41              |
| 33:DA:938:A:H2'   | 33:DA:939:G:O5'    | 2.21                     | 0.41              |
| 33:DA:1064:G:P    | 33:DA:1386:G:H4'   | 2.61                     | 0.41              |
| 33:DA:1149:C:H1'  | 33:DA:1280:A:N6    | 2.36                     | 0.41              |
| 33:DA:1150:A:C6   | 42:DJ:41:PRO:HG2   | 2.55                     | 0.41              |
| 33:DA:1193:G:OP1  | 35:DC:166:TRP:CZ3  | 2.73                     | 0.41              |
| 33:DA:1205:U:C1'  | 35:DC:194:VAL:HG23 | 2.50                     | 0.41              |
| 33:DA:1223:C:H5'' | 33:DA:1224:U:C5'   | 2.39                     | 0.41              |
| 33:DA:1319:A:H2'  | 33:DA:1323:G:C5    | 2.55                     | 0.41              |
| 33:DA:1328:C:OP1  | 45:DM:27:THR:HG21  | 2.21                     | 0.41              |
| 33:DA:1343:G:C2'  | 33:DA:1344:C:H5'   | 2.44                     | 0.41              |
| 33:DA:1408:A:C2'  | 33:DA:1409:C:H5'   | 2.50                     | 0.41              |
| 33:DA:1472:U:H2'  | 33:DA:1473:G:C8    | 2.55                     | 0.41              |
| 33:DA:1504:G:O5'  | 33:DA:1504:G:H2'   | 2.21                     | 0.41              |
| 34:DB:23:ASN:O    | 34:DB:23:ASN:CG    | 2.59                     | 0.41              |
| 34:DB:72:LYS:HE2  | 34:DB:167:HIS:HB2  | 2.02                     | 0.41              |
| 34:DB:153:MET:CE  | 34:DB:157:PRO:HG3  | 2.50                     | 0.41              |
| 35:DC:111:ASP:O   | 35:DC:111:ASP:CG   | 2.59                     | 0.41              |
| 35:DC:149:LYS:HE3 | 35:DC:200:TRP:CE3  | 2.56                     | 0.41              |
| 36:DD:8:LEU:HD11  | 36:DD:12:ARG:HG3   | 2.02                     | 0.41              |
| 36:DD:18:LEU:HD13 | 36:DD:63:ILE:HD12  | 2.02                     | 0.41              |
| 37:DE:15:ILE:N    | 37:DE:15:ILE:HD13  | 2.35                     | 0.41              |
| 39:DG:12:LEU:HD13 | 39:DG:13:PRO:N     | 2.36                     | 0.41              |
| 39:DG:148:LYS:HG3 | 39:DG:151:ALA:HA   | 2.02                     | 0.41              |
| 41:DI:12:LYS:N    | 41:DI:105:ARG:NH1  | 2.69                     | 0.41              |
| 41:DI:79:ARG:HE   | 41:DI:80:HIS:N     | 2.19                     | 0.41              |
| 42:DJ:59:LYS:C    | 42:DJ:61:ALA:N     | 2.74                     | 0.41              |
| 45:DM:65:GLU:HB2  | 45:DM:66:GLY:H     | 1.63                     | 0.41              |
| 45:DM:84:CYS:CB   | 51:DS:72:GLU:HB3   | 2.44                     | 0.41              |
| 47:DO:41:HIS:HD2  | 47:DO:42:PHE:CD1   | 2.39                     | 0.41              |
| 47:DO:49:HIS:O    | 47:DO:52:ARG:N     | 2.53                     | 0.41              |
| 47:DO:77:TYR:OH   | 47:DO:87:ARG:NH1   | 2.54                     | 0.41              |
| 50:DR:51:GLN:NE2  | 50:DR:51:GLN:O     | 2.52                     | 0.41              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 2:A1:11:VAL:CG1  | 2:A1:12:SER:N     | 2.84                     | 0.41              |
| 3:A2:17:GLY:CA   | 3:A2:21:ARG:NH1   | 2.84                     | 0.41              |
| 4:A3:4:LYS:O     | 4:A3:5:THR:C      | 2.59                     | 0.41              |
| 4:A3:16:THR:CG2  | 4:A3:22:LYS:HG2   | 2.51                     | 0.41              |
| 8:AB:201:C:H2'   | 8:AB:202:U:H5'    | 2.03                     | 0.41              |
| 8:AB:269:C:H2'   | 8:AB:270:A:H8     | 1.86                     | 0.41              |
| 8:AB:277:G:N3    | 8:AB:277:G:H2'    | 2.36                     | 0.41              |
| 8:AB:357:C:C6    | 8:AB:357:C:O5'    | 2.74                     | 0.41              |
| 8:AB:456:C:O2    | 26:AT:70:HIS:NE2  | 2.54                     | 0.41              |
| 8:AB:582:A:C4    | 8:AB:583:G:C8     | 3.09                     | 0.41              |
| 8:AB:700:G:N2    | 8:AB:733:G:H1'    | 2.36                     | 0.41              |
| 8:AB:759:G:C1'   | 8:AB:1981:A:C2    | 3.04                     | 0.41              |
| 8:AB:919:U:C5    | 8:AB:920:A:N7     | 2.89                     | 0.41              |
| 8:AB:998:C:N4    | 55:AB:4421:HOH:O  | 2.52                     | 0.41              |
| 8:AB:1030:C:O5'  | 8:AB:1030:C:C6    | 2.67                     | 0.41              |
| 8:AB:1071:G:C2   | 8:AB:1072:C:C2    | 3.08                     | 0.41              |
| 8:AB:1159:U:H2'  | 8:AB:1160:G:C8    | 2.55                     | 0.41              |
| 8:AB:1216:G:H5'' | 8:AB:1216:G:H8    | 1.86                     | 0.41              |
| 8:AB:1289:C:H2'  | 8:AB:1290:C:H6    | 1.86                     | 0.41              |
| 8:AB:1322:A:H4'  | 25:AS:82:MET:HE3  | 2.03                     | 0.41              |
| 8:AB:1421:G:H1'  | 8:AB:2211:A:C6    | 2.56                     | 0.41              |
| 8:AB:1422:G:N3   | 8:AB:1423:G:C8    | 2.89                     | 0.41              |
| 8:AB:1438:U:H2'  | 8:AB:1439:A:C8    | 2.56                     | 0.41              |
| 8:AB:1495:A:C2   | 8:AB:1578:U:O2    | 2.74                     | 0.41              |
| 8:AB:1651:G:C6   | 8:AB:1652:A:C5    | 3.09                     | 0.41              |
| 8:AB:1823:G:C2'  | 8:AB:1824:G:H5'   | 2.51                     | 0.41              |
| 8:AB:1842:G:C6   | 8:AB:1843:C:N3    | 2.88                     | 0.41              |
| 8:AB:2013:A:C2   | 8:AB:2014:A:C4    | 3.08                     | 0.41              |
| 8:AB:2034:U:O2'  | 8:AB:2035:G:O5'   | 2.34                     | 0.41              |
| 8:AB:2250:G:C8   | 8:AB:2250:G:C5'   | 3.03                     | 0.41              |
| 8:AB:2335:A:C6   | 8:AB:2337:G:N9    | 2.89                     | 0.41              |
| 8:AB:2428:G:C5'  | 8:AB:2429:G:OP1   | 2.68                     | 0.41              |
| 8:AB:2513:A:C6   | 8:AB:2574:G:C6    | 3.09                     | 0.41              |
| 8:AB:2591:C:C2'  | 8:AB:2592:G:C8    | 2.82                     | 0.41              |
| 8:AB:2731:G:C2   | 8:AB:2732:G:N1    | 2.89                     | 0.41              |
| 8:AB:2842:G:N2   | 8:AB:2843:G:H1'   | 2.36                     | 0.41              |
| 8:AB:2856:A:C2   | 8:AB:2862:G:C2    | 3.09                     | 0.41              |
| 8:AB:2881:U:H1'  | 20:AN:45:ARG:NH2  | 2.35                     | 0.41              |
| 9:AC:53:ILE:CG1  | 9:AC:218:THR:HA   | 2.50                     | 0.41              |
| 9:AC:253:GLY:CA  | 9:AC:254:LYS:HZ3  | 2.30                     | 0.41              |
| 10:AD:128:ARG:O  | 10:AD:140:HIS:CD2 | 2.74                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AD:181:ASP:O    | 10:AD:184:ARG:HB2  | 2.20                     | 0.41              |
| 11:AE:193:VAL:O    | 11:AE:198:GLU:O    | 2.38                     | 0.41              |
| 12:AF:65:LEU:C     | 12:AF:67:THR:H     | 2.23                     | 0.41              |
| 12:AF:153:ILE:HG22 | 12:AF:154:THR:N    | 2.34                     | 0.41              |
| 18:AL:91:ASP:O     | 18:AL:122:VAL:HG13 | 2.20                     | 0.41              |
| 20:AN:4:ARG:HD3    | 20:AN:4:ARG:HA     | 1.89                     | 0.41              |
| 21:AO:86:GLY:O     | 21:AO:88:LYS:N     | 2.54                     | 0.41              |
| 22:AP:31:VAL:HG12  | 22:AP:33:GLU:N     | 2.36                     | 0.41              |
| 22:AP:76:HIS:HB3   | 22:AP:78:PRO:CD    | 2.49                     | 0.41              |
| 23:AQ:53:LYS:O     | 23:AQ:57:ARG:HB2   | 2.20                     | 0.41              |
| 24:AR:69:GLY:HA3   | 24:AR:96:VAL:HG12  | 2.03                     | 0.41              |
| 27:AU:85:ARG:HH21  | 27:AU:86:PHE:HE1   | 1.63                     | 0.41              |
| 30:AX:25:GLN:HA    | 30:AX:29:ARG:HB2   | 2.03                     | 0.41              |
| 33:BA:12:U:H4'     | 33:BA:526:C:H4'    | 2.03                     | 0.41              |
| 33:BA:35:G:C4      | 33:BA:36:C:C5      | 3.08                     | 0.41              |
| 33:BA:78:A:C8      | 33:BA:78:A:H3'     | 2.56                     | 0.41              |
| 33:BA:109:A:N7     | 33:BA:326:G:C2     | 2.89                     | 0.41              |
| 33:BA:204:G:N2     | 33:BA:465:A:H1'    | 2.36                     | 0.41              |
| 33:BA:448:A:H2'    | 33:BA:449:G:H5'    | 2.02                     | 0.41              |
| 33:BA:499:A:C5     | 33:BA:547:A:N7     | 2.89                     | 0.41              |
| 33:BA:604:G:C4     | 33:BA:635:A:N1     | 2.88                     | 0.41              |
| 33:BA:640:A:H2'    | 40:BH:106:SER:HB3  | 2.03                     | 0.41              |
| 33:BA:700:G:O4'    | 33:BA:704:A:C1'    | 2.69                     | 0.41              |
| 33:BA:714:G:C2'    | 33:BA:715:A:O5'    | 2.69                     | 0.41              |
| 33:BA:785:G:C4     | 33:BA:786:G:C8     | 3.09                     | 0.41              |
| 33:BA:789:U:H1'    | 33:BA:791:G:C8     | 2.56                     | 0.41              |
| 33:BA:797:C:C6     | 33:BA:797:C:C3'    | 3.04                     | 0.41              |
| 33:BA:808:C:N3     | 33:BA:809:G:C8     | 2.88                     | 0.41              |
| 33:BA:834:U:C2'    | 33:BA:835:U:O5'    | 2.69                     | 0.41              |
| 33:BA:925:G:C2     | 33:BA:1392:G:N3    | 2.89                     | 0.41              |
| 33:BA:1183:U:H3'   | 33:BA:1184:G:C5'   | 2.49                     | 0.41              |
| 33:BA:1198:G:C5    | 33:BA:1199:U:N3    | 2.88                     | 0.41              |
| 33:BA:1233:G:H5'   | 41:BI:118:ARG:HH22 | 1.85                     | 0.41              |
| 33:BA:1314:C:H2'   | 33:BA:1315:U:H6    | 1.86                     | 0.41              |
| 33:BA:1418:A:H8    | 33:BA:1418:A:O5'   | 2.02                     | 0.41              |
| 33:BA:1437:A:C2    | 33:BA:1438:G:C8    | 3.09                     | 0.41              |
| 33:BA:1453:G:N2    | 33:BA:1454:G:C4    | 2.89                     | 0.41              |
| 33:BA:1513:A:C2    | 33:BA:1514:G:C5    | 3.07                     | 0.41              |
| 34:BB:93:HIS:ND1   | 34:BB:145:ASN:ND2  | 2.69                     | 0.41              |
| 35:BC:96:VAL:CB    | 35:BC:97:PRO:HD2   | 2.51                     | 0.41              |
| 35:BC:133:MET:O    | 35:BC:137:VAL:HG23 | 2.20                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BD:142:VAL:O   | 36:BD:143:SER:CB   | 2.69                     | 0.41              |
| 37:BE:19:ARG:O    | 37:BE:20:VAL:O     | 2.38                     | 0.41              |
| 38:BF:6:ILE:HB    | 38:BF:89:VAL:HG23  | 2.03                     | 0.41              |
| 38:BF:42:TRP:CZ2  | 38:BF:61:LEU:HD23  | 2.56                     | 0.41              |
| 41:BI:123:ARG:HA  | 41:BI:124:PRO:HD2  | 1.87                     | 0.41              |
| 41:BI:126:PHE:HD1 | 41:BI:126:PHE:O    | 2.04                     | 0.41              |
| 42:BJ:6:ILE:HG12  | 42:BJ:102:LEU:HD21 | 2.03                     | 0.41              |
| 42:BJ:42:LEU:CB   | 42:BJ:43:PRO:HD2   | 2.51                     | 0.41              |
| 43:BK:82:GLU:HG2  | 43:BK:107:THR:HB   | 2.00                     | 0.41              |
| 44:BL:119:LYS:O   | 44:BL:120:ARG:C    | 2.57                     | 0.41              |
| 44:BL:121:PRO:C   | 44:BL:123:ALA:N    | 2.74                     | 0.41              |
| 47:BO:68:TYR:O    | 47:BO:69:LEU:C     | 2.59                     | 0.41              |
| 48:BP:2:VAL:O     | 48:BP:2:VAL:CG2    | 2.65                     | 0.41              |
| 49:BQ:30:HIS:HA   | 49:BQ:31:PRO:HD2   | 1.72                     | 0.41              |
| 2:C1:25:ASN:CG    | 2:C1:26:LYS:H      | 2.24                     | 0.41              |
| 2:C1:36:LYS:CE    | 8:CB:2344:U:C2     | 3.03                     | 0.41              |
| 4:C3:7:ARG:NH2    | 4:C3:11:LYS:HE3    | 2.35                     | 0.41              |
| 7:CA:47:C:OP2     | 7:CA:47:C:H6       | 2.04                     | 0.41              |
| 7:CA:78:A:H2      | 8:CB:861:A:C2      | 2.38                     | 0.41              |
| 8:CB:17:G:C2      | 8:CB:18:U:C2       | 3.09                     | 0.41              |
| 8:CB:66:C:C2      | 8:CB:67:U:C6       | 3.08                     | 0.41              |
| 8:CB:73:A:O5'     | 8:CB:73:A:H8       | 2.04                     | 0.41              |
| 8:CB:136:G:OP2    | 8:CB:136:G:H8      | 2.02                     | 0.41              |
| 8:CB:189:G:C6     | 8:CB:205:G:C4      | 3.09                     | 0.41              |
| 8:CB:579:G:N2     | 8:CB:1262:A:N9     | 2.68                     | 0.41              |
| 8:CB:583:G:C2     | 8:CB:584:C:C6      | 3.09                     | 0.41              |
| 8:CB:584:C:N4     | 8:CB:1256:G:H1     | 2.07                     | 0.41              |
| 8:CB:614:A:C4'    | 8:CB:616:A:N7      | 2.82                     | 0.41              |
| 8:CB:673:C:H2'    | 8:CB:674:G:C5'     | 2.47                     | 0.41              |
| 8:CB:709:U:H6     | 8:CB:709:U:H3'     | 1.86                     | 0.41              |
| 8:CB:757:G:H5''   | 8:CB:757:G:H8      | 1.85                     | 0.41              |
| 8:CB:773:U:C5'    | 8:CB:774:G:OP2     | 2.69                     | 0.41              |
| 8:CB:775:G:H1     | 8:CB:787:C:N4      | 2.18                     | 0.41              |
| 8:CB:783:A:H2'    | 8:CB:784:G:H4'     | 2.01                     | 0.41              |
| 8:CB:795:C:H2'    | 8:CB:796:C:O5'     | 2.21                     | 0.41              |
| 8:CB:820:A:H1'    | 8:CB:943:A:O2'     | 2.21                     | 0.41              |
| 8:CB:873:C:H3'    | 8:CB:873:C:H6      | 1.83                     | 0.41              |
| 8:CB:959:A:C6     | 8:CB:960:A:C6      | 3.09                     | 0.41              |
| 8:CB:997:G:N1     | 8:CB:1159:U:C2     | 2.89                     | 0.41              |
| 8:CB:1021:A:N1    | 8:CB:1023:U:C2     | 2.89                     | 0.41              |
| 8:CB:1225:G:O2'   | 8:CB:1226:A:H5'    | 2.20                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:CB:1231:U:H2'    | 8:CB:1232:G:H8    | 1.84                     | 0.41              |
| 8:CB:1277:G:O2'    | 20:CN:24:MET:HB2  | 2.21                     | 0.41              |
| 8:CB:1300:G:C1'    | 8:CB:1626:A:C2    | 3.03                     | 0.41              |
| 8:CB:1334:G:O5'    | 8:CB:1334:G:C8    | 2.71                     | 0.41              |
| 8:CB:1422:G:N3     | 8:CB:1423:G:C8    | 2.89                     | 0.41              |
| 8:CB:1531:C:H3'    | 8:CB:1531:C:C6    | 2.56                     | 0.41              |
| 8:CB:1547:C:C4     | 8:CB:1548:A:N7    | 2.89                     | 0.41              |
| 8:CB:1676:A:C2     | 8:CB:1677:A:C4    | 3.09                     | 0.41              |
| 8:CB:1853:A:N7     | 8:CB:1889:A:C6    | 2.89                     | 0.41              |
| 8:CB:1873:G:O2'    | 8:CB:1874:C:H5'   | 2.21                     | 0.41              |
| 8:CB:1935:G:C2     | 8:CB:1964:G:C4    | 3.09                     | 0.41              |
| 8:CB:1973:G:C6     | 8:CB:1974:C:N3    | 2.89                     | 0.41              |
| 8:CB:2010:G:P      | 25:CS:41:LYS:HB2  | 2.60                     | 0.41              |
| 8:CB:2046:G:N1     | 8:CB:2047:C:C2    | 2.89                     | 0.41              |
| 8:CB:2201:G:C2     | 8:CB:2223:G:C4    | 3.09                     | 0.41              |
| 8:CB:2258:C:C2     | 8:CB:2426:A:C4'   | 3.04                     | 0.41              |
| 8:CB:2360:G:C5'    | 18:CL:58:TYR:CE1  | 3.02                     | 0.41              |
| 8:CB:2453:A:C2     | 8:CB:2504:U:C2    | 3.09                     | 0.41              |
| 8:CB:2456:C:C5     | 8:CB:2457:U:H5    | 2.38                     | 0.41              |
| 8:CB:2817:U:H1'    | 8:CB:2836:U:O2    | 2.20                     | 0.41              |
| 8:CB:2829:A:H2'    | 8:CB:2830:C:O4'   | 2.21                     | 0.41              |
| 55:CB:5113:HOH:O   | 18:CL:100:ILE:HA  | 2.20                     | 0.41              |
| 9:CC:161:VAL:O     | 9:CC:174:ARG:O    | 2.38                     | 0.41              |
| 9:CC:264:LYS:O     | 9:CC:265:PHE:CB   | 2.61                     | 0.41              |
| 10:CD:4:LEU:HB2    | 10:CD:201:LEU:O   | 2.21                     | 0.41              |
| 10:CD:15:PHE:CG    | 10:CD:16:THR:N    | 2.88                     | 0.41              |
| 10:CD:49:GLN:HG2   | 10:CD:50:VAL:H    | 1.86                     | 0.41              |
| 11:CE:58:LYS:HE2   | 11:CE:70:SER:O    | 2.21                     | 0.41              |
| 11:CE:153:LEU:HG   | 11:CE:172:ALA:HA  | 2.02                     | 0.41              |
| 12:CF:110:ILE:HG22 | 12:CF:112:ASP:H   | 1.84                     | 0.41              |
| 13:CG:21:GLN:O     | 13:CG:23:ILE:HG23 | 2.20                     | 0.41              |
| 13:CG:162:ARG:HD3  | 13:CG:166:GLU:OE1 | 2.21                     | 0.41              |
| 13:CG:169:ARG:HD2  | 13:CG:170:THR:N   | 2.36                     | 0.41              |
| 14:CH:53:GLU:OE2   | 14:CH:57:LYS:CE   | 2.68                     | 0.41              |
| 14:CH:69:ALA:O     | 14:CH:73:ASN:HB2  | 2.21                     | 0.41              |
| 14:CH:115:VAL:HA   | 14:CH:132:PHE:CD1 | 2.55                     | 0.41              |
| 15:CI:57:VAL:HG23  | 15:CI:71:LYS:HZ2  | 1.86                     | 0.41              |
| 16:CJ:39:LYS:O     | 16:CJ:41:LYS:HB3  | 2.20                     | 0.41              |
| 16:CJ:77:HIS:HB2   | 16:CJ:85:LYS:HE2  | 2.02                     | 0.41              |
| 19:CM:77:PRO:HD3   | 19:CM:86:LYS:HZ3  | 1.85                     | 0.41              |
| 20:CN:77:ALA:O     | 20:CN:81:ASN:N    | 2.54                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:CN:110:MET:O   | 20:CN:111:ALA:C   | 2.58                     | 0.41              |
| 22:CP:63:ILE:O    | 22:CP:72:VAL:HA   | 2.20                     | 0.41              |
| 23:CQ:4:LYS:O     | 23:CQ:6:GLY:N     | 2.54                     | 0.41              |
| 25:CS:85:ILE:HA   | 25:CS:85:ILE:HD13 | 1.78                     | 0.41              |
| 27:CU:94:PHE:O    | 27:CU:100:GLU:O   | 2.39                     | 0.41              |
| 28:CV:2:PHE:HB2   | 28:CV:61:LEU:HD22 | 2.02                     | 0.41              |
| 33:DA:9:G:C5      | 33:DA:10:A:C5     | 3.08                     | 0.41              |
| 33:DA:50:A:C2     | 33:DA:52:C:H1'    | 2.56                     | 0.41              |
| 33:DA:59:A:C5     | 33:DA:354:G:N1    | 2.88                     | 0.41              |
| 33:DA:115:G:N2    | 33:DA:116:A:H62   | 2.19                     | 0.41              |
| 33:DA:148:G:O2'   | 33:DA:1446:A:N3   | 2.48                     | 0.41              |
| 33:DA:202:G:H4'   | 33:DA:469:C:H5'   | 2.03                     | 0.41              |
| 33:DA:291:U:C2    | 33:DA:310:G:N1    | 2.89                     | 0.41              |
| 33:DA:367:U:C5    | 33:DA:394:G:N1    | 2.89                     | 0.41              |
| 33:DA:572:A:C2    | 33:DA:864:A:C2    | 3.09                     | 0.41              |
| 33:DA:690:G:C2    | 33:DA:691:G:N3    | 2.89                     | 0.41              |
| 33:DA:692:U:O4    | 33:DA:695:A:OP2   | 2.39                     | 0.41              |
| 33:DA:700:G:C5'   | 33:DA:700:G:C8    | 3.04                     | 0.41              |
| 33:DA:944:G:H2'   | 33:DA:945:G:H5'   | 2.03                     | 0.41              |
| 33:DA:946:A:C4    | 33:DA:947:G:C8    | 3.09                     | 0.41              |
| 33:DA:1092:A:OP2  | 39:DG:3:ARG:HD2   | 2.21                     | 0.41              |
| 33:DA:1117:A:H2'  | 33:DA:1118:U:H5'  | 2.01                     | 0.41              |
| 33:DA:1260:G:H2'  | 33:DA:1275:A:N6   | 2.36                     | 0.41              |
| 33:DA:1349:A:H1'  | 33:DA:1374:A:C6   | 2.56                     | 0.41              |
| 33:DA:1361:G:C4   | 33:DA:1362:A:H8   | 2.36                     | 0.41              |
| 33:DA:1422:G:C2   | 33:DA:1423:G:C8   | 3.09                     | 0.41              |
| 33:DA:1465:A:H2'  | 33:DA:1466:C:H6   | 1.84                     | 0.41              |
| 33:DA:1514:G:C6   | 33:DA:1515:G:C5   | 3.09                     | 0.41              |
| 34:DB:16:GLY:CA   | 34:DB:40:ILE:HG13 | 2.50                     | 0.41              |
| 34:DB:222:GLU:O   | 34:DB:222:GLU:CG  | 2.68                     | 0.41              |
| 36:DD:84:ASN:HB2  | 37:DE:101:GLY:HA3 | 2.03                     | 0.41              |
| 36:DD:173:ASP:OD1 | 36:DD:173:ASP:C   | 2.58                     | 0.41              |
| 41:DI:45:MET:H    | 41:DI:45:MET:HG2  | 1.43                     | 0.41              |
| 42:DJ:40:ILE:HG13 | 42:DJ:73:LEU:HB3  | 2.02                     | 0.41              |
| 44:DL:54:VAL:HG23 | 44:DL:56:LEU:HD21 | 2.02                     | 0.41              |
| 44:DL:120:ARG:HA  | 44:DL:121:PRO:HD2 | 1.94                     | 0.41              |
| 46:DN:32:ASP:OD2  | 46:DN:32:ASP:N    | 2.53                     | 0.41              |
| 46:DN:64:ARG:HB3  | 46:DN:78:LEU:HD13 | 2.03                     | 0.41              |
| 48:DP:20:VAL:O    | 48:DP:21:VAL:C    | 2.59                     | 0.41              |
| 48:DP:46:LYS:HG3  | 48:DP:47:GLU:N    | 2.35                     | 0.41              |
| 48:DP:78:VAL:O    | 48:DP:78:VAL:CG1  | 2.67                     | 0.41              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 49:DQ:34:GLY:O  | 49:DQ:35:LYS:O   | 2.39                     | 0.41              |
| 50:DR:72:ARG:O  | 50:DR:73:HIS:CD2 | 2.74                     | 0.41              |
| 2:A1:6:GLU:HG3  | 8:AB:2284:A:OP1  | 2.21                     | 0.41              |
| 2:A1:40:PRO:HB2 | 2:A1:43:ARG:HH12 | 1.86                     | 0.41              |
| 3:A2:28:ARG:O   | 3:A2:30:VAL:N    | 2.53                     | 0.41              |
| 5:A4:14:CYS:CB  | 5:A4:25:VAL:HG12 | 2.48                     | 0.41              |
| 7:AA:17:C:O2'   | 7:AA:18:G:H5'    | 2.21                     | 0.41              |
| 7:AA:99:A:C2    | 7:AA:100:G:H1'   | 2.55                     | 0.41              |
| 7:AA:104:A:H2   | 7:AA:105:G:H1'   | 1.74                     | 0.41              |
| 7:AA:113:C:O2'  | 21:AO:47:VAL:O   | 2.39                     | 0.41              |
| 8:AB:18:U:H6    | 8:AB:18:U:H3'    | 1.85                     | 0.41              |
| 8:AB:20:C:O2    | 8:AB:21:A:C8     | 2.73                     | 0.41              |
| 8:AB:24:G:C6    | 8:AB:25:U:C4     | 3.08                     | 0.41              |
| 8:AB:48:G:C2    | 8:AB:178:G:C5    | 3.09                     | 0.41              |
| 8:AB:107:G:C8   | 8:AB:107:G:H3'   | 2.55                     | 0.41              |
| 8:AB:107:G:O2'  | 8:AB:293:U:H2'   | 2.20                     | 0.41              |
| 8:AB:120:U:O2   | 8:AB:120:U:C2'   | 2.68                     | 0.41              |
| 8:AB:158:U:O4   | 8:AB:159:G:C5    | 2.74                     | 0.41              |
| 8:AB:190:A:OP2  | 8:AB:205:G:N2    | 2.54                     | 0.41              |
| 8:AB:201:C:H6   | 8:AB:201:C:H3'   | 1.85                     | 0.41              |
| 8:AB:204:A:C5   | 8:AB:206:U:C4    | 3.09                     | 0.41              |
| 8:AB:280:U:C3'  | 8:AB:281:C:C6    | 3.04                     | 0.41              |
| 8:AB:285:G:C8   | 8:AB:285:G:C3'   | 3.04                     | 0.41              |
| 8:AB:308:G:N2   | 8:AB:477:A:N7    | 2.68                     | 0.41              |
| 8:AB:406:G:H2'  | 8:AB:407:G:O5'   | 2.21                     | 0.41              |
| 8:AB:536:G:H21  | 16:AJ:48:VAL:CG2 | 2.16                     | 0.41              |
| 8:AB:538:A:C6   | 8:AB:539:G:C5    | 3.09                     | 0.41              |
| 8:AB:576:U:H2'  | 8:AB:577:G:C8    | 2.56                     | 0.41              |
| 8:AB:584:C:N4   | 8:AB:585:G:C5    | 2.89                     | 0.41              |
| 8:AB:599:A:C2   | 8:AB:659:G:C2    | 3.09                     | 0.41              |
| 8:AB:688:U:C2'  | 8:AB:689:A:H5''  | 2.42                     | 0.41              |
| 8:AB:696:G:H2'  | 8:AB:697:G:H8    | 1.86                     | 0.41              |
| 8:AB:750:A:C2   | 8:AB:753:A:N9    | 2.89                     | 0.41              |
| 8:AB:757:G:H8   | 8:AB:757:G:H5''  | 1.86                     | 0.41              |
| 8:AB:772:C:C2   | 8:AB:773:U:H5    | 2.37                     | 0.41              |
| 8:AB:834:G:H1'  | 8:AB:2358:A:N3   | 2.35                     | 0.41              |
| 8:AB:841:G:N2   | 8:AB:842:U:O2    | 2.54                     | 0.41              |
| 8:AB:847:U:O2'  | 8:AB:848:C:H5'   | 2.21                     | 0.41              |
| 8:AB:851:C:O2   | 8:AB:852:U:C6    | 2.73                     | 0.41              |
| 8:AB:900:A:C8   | 8:AB:900:A:O5'   | 2.74                     | 0.41              |
| 8:AB:918:A:O5'  | 8:AB:918:A:H8    | 2.04                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 8:AB:949:G:N3    | 8:AB:949:G:H2'   | 2.36                     | 0.41              |
| 8:AB:1036:G:C6   | 8:AB:1119:U:O2   | 2.74                     | 0.41              |
| 8:AB:1060:U:N1   | 8:AB:1062:G:H5'  | 2.36                     | 0.41              |
| 8:AB:1184:U:N3   | 8:AB:1185:G:N7   | 2.69                     | 0.41              |
| 8:AB:1231:U:H2'  | 8:AB:1232:G:H8   | 1.84                     | 0.41              |
| 8:AB:1268:A:C6   | 8:AB:1269:A:C4   | 3.09                     | 0.41              |
| 8:AB:1270:C:C2'  | 8:AB:1648:U:H5'' | 2.51                     | 0.41              |
| 8:AB:1274:A:C8   | 8:AB:1274:A:C3'  | 3.04                     | 0.41              |
| 8:AB:1279:G:C2   | 8:AB:1292:G:C2   | 3.09                     | 0.41              |
| 8:AB:1298:C:C5   | 8:AB:1299:G:N7   | 2.88                     | 0.41              |
| 8:AB:1355:G:C2   | 8:AB:1356:G:C8   | 3.09                     | 0.41              |
| 8:AB:1452:G:H8   | 8:AB:1452:G:O5'  | 2.03                     | 0.41              |
| 8:AB:1478:G:H8   | 8:AB:1478:G:C5'  | 2.31                     | 0.41              |
| 8:AB:1560:G:C6   | 8:AB:1561:C:C4   | 3.08                     | 0.41              |
| 8:AB:1596:A:N6   | 8:AB:1597:A:N6   | 2.69                     | 0.41              |
| 8:AB:1622:G:C2   | 8:AB:1623:G:N7   | 2.89                     | 0.41              |
| 8:AB:1655:A:N7   | 8:AB:1656:C:C5   | 2.89                     | 0.41              |
| 8:AB:1694:C:H6   | 8:AB:1694:C:O5'  | 2.03                     | 0.41              |
| 8:AB:1726:C:O5'  | 8:AB:1726:C:H6   | 2.04                     | 0.41              |
| 8:AB:1734:G:O5'  | 8:AB:1734:G:C8   | 2.74                     | 0.41              |
| 8:AB:1779:U:C5   | 8:AB:1783:A:C8   | 3.09                     | 0.41              |
| 8:AB:1836:C:C2'  | 8:AB:1837:C:H5'  | 2.50                     | 0.41              |
| 8:AB:1854:A:H61  | 8:AB:1888:G:H1'  | 1.85                     | 0.41              |
| 8:AB:1875:G:O2'  | 8:AB:1876:A:H8   | 2.04                     | 0.41              |
| 8:AB:1915:U:H2'  | 8:AB:1916:A:H5'  | 2.02                     | 0.41              |
| 8:AB:2017:U:H5'' | 8:AB:2018:G:OP1  | 2.20                     | 0.41              |
| 8:AB:2104:C:H6   | 8:AB:2104:C:O5'  | 2.04                     | 0.41              |
| 8:AB:2136:G:C4   | 8:AB:2137:U:C5   | 3.09                     | 0.41              |
| 8:AB:2187:U:OP1  | 8:AB:2187:U:C4'  | 2.69                     | 0.41              |
| 8:AB:2230:G:O2'  | 8:AB:2231:U:H5'  | 2.21                     | 0.41              |
| 8:AB:2264:C:N3   | 8:AB:2265:U:N3   | 2.69                     | 0.41              |
| 8:AB:2297:A:N7   | 8:AB:2298:A:N7   | 2.68                     | 0.41              |
| 8:AB:2335:A:C5   | 8:AB:2337:G:C4   | 3.09                     | 0.41              |
| 8:AB:2363:G:H2'  | 8:AB:2364:C:C6   | 2.55                     | 0.41              |
| 8:AB:2405:G:H2'  | 8:AB:2411:A:H61  | 1.81                     | 0.41              |
| 8:AB:2415:G:C5   | 8:AB:2416:C:C5   | 3.08                     | 0.41              |
| 8:AB:2487:G:N3   | 8:AB:2488:G:C8   | 2.89                     | 0.41              |
| 8:AB:2570:G:C2   | 8:AB:2571:U:C6   | 3.09                     | 0.41              |
| 8:AB:2589:A:C2   | 8:AB:2590:A:C4   | 3.06                     | 0.41              |
| 8:AB:2593:U:C3'  | 8:AB:2594:C:H5'' | 2.51                     | 0.41              |
| 8:AB:2628:C:C6   | 8:AB:2628:C:H5'' | 2.55                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:2641:G:O2'   | 8:AB:2642:G:H5'    | 2.20                     | 0.41              |
| 8:AB:2667:C:H2'   | 8:AB:2668:G:H5'    | 2.03                     | 0.41              |
| 8:AB:2704:C:H2'   | 8:AB:2705:A:O4'    | 2.19                     | 0.41              |
| 8:AB:2720:U:H2'   | 8:AB:2721:A:H8     | 1.86                     | 0.41              |
| 8:AB:2757:A:N3    | 8:AB:2757:A:C2'    | 2.79                     | 0.41              |
| 8:AB:2761:A:C4    | 8:AB:2762:C:C6     | 3.08                     | 0.41              |
| 8:AB:2823:A:C5    | 8:AB:2824:C:C5     | 3.09                     | 0.41              |
| 8:AB:2854:G:C2    | 8:AB:2864:G:C2     | 3.08                     | 0.41              |
| 8:AB:2870:C:C2'   | 8:AB:2871:U:H5'    | 2.50                     | 0.41              |
| 8:AB:2872:A:O2'   | 8:AB:2873:A:C5'    | 2.63                     | 0.41              |
| 8:AB:2880:C:N3    | 8:AB:2881:U:C4     | 2.88                     | 0.41              |
| 9:AC:21:PRO:N     | 9:AC:202:ARG:NH1   | 2.69                     | 0.41              |
| 9:AC:57:HIS:O     | 9:AC:58:LYS:HB3    | 2.21                     | 0.41              |
| 9:AC:128:THR:HG22 | 9:AC:129:LEU:N     | 2.36                     | 0.41              |
| 9:AC:155:ARG:C    | 9:AC:157:ALA:N     | 2.73                     | 0.41              |
| 9:AC:156:SER:OG   | 9:AC:195:GLY:CA    | 2.65                     | 0.41              |
| 9:AC:167:ASP:OD1  | 9:AC:172:THR:HG23  | 2.21                     | 0.41              |
| 9:AC:177:SER:O    | 9:AC:179:GLU:N     | 2.54                     | 0.41              |
| 9:AC:181:ARG:CB   | 9:AC:263:ASP:HB2   | 2.51                     | 0.41              |
| 9:AC:204:LEU:HD22 | 9:AC:210:ALA:HA    | 2.03                     | 0.41              |
| 9:AC:250:GLN:O    | 9:AC:250:GLN:CD    | 2.59                     | 0.41              |
| 9:AC:257:ARG:HH21 | 9:AC:261:ARG:CG    | 2.32                     | 0.41              |
| 10:AD:7:LYS:HG2   | 10:AD:201:LEU:HD11 | 2.03                     | 0.41              |
| 10:AD:29:VAL:C    | 10:AD:51:THR:HG21  | 2.39                     | 0.41              |
| 10:AD:31:ALA:HB3  | 10:AD:95:SER:HB3   | 2.03                     | 0.41              |
| 10:AD:34:VAL:HG13 | 10:AD:35:THR:N     | 2.33                     | 0.41              |
| 10:AD:102:ALA:HB3 | 10:AD:105:LYS:HG2  | 2.02                     | 0.41              |
| 10:AD:107:VAL:HA  | 10:AD:205:PRO:O    | 2.21                     | 0.41              |
| 10:AD:170:VAL:HB  | 10:AD:194:PRO:HG2  | 2.02                     | 0.41              |
| 10:AD:186:LEU:O   | 10:AD:187:LEU:C    | 2.59                     | 0.41              |
| 10:AD:198:GLY:O   | 10:AD:199:SER:O    | 2.38                     | 0.41              |
| 11:AE:74:LYS:O    | 11:AE:75:SER:C     | 2.58                     | 0.41              |
| 11:AE:149:ILE:HB  | 11:AE:150:THR:H    | 1.69                     | 0.41              |
| 11:AE:157:LEU:O   | 11:AE:158:PHE:C    | 2.59                     | 0.41              |
| 11:AE:191:ASP:C   | 11:AE:194:LYS:NZ   | 2.73                     | 0.41              |
| 11:AE:195:GLN:O   | 11:AE:196:VAL:C    | 2.59                     | 0.41              |
| 12:AF:56:LEU:HD23 | 12:AF:56:LEU:C     | 2.41                     | 0.41              |
| 12:AF:77:LYS:HZ2  | 12:AF:79:ARG:NH2   | 2.19                     | 0.41              |
| 13:AG:5:LYS:HB3   | 13:AG:68:ARG:NH2   | 2.36                     | 0.41              |
| 14:AH:60:GLU:CD   | 14:AH:61:VAL:N     | 2.74                     | 0.41              |
| 14:AH:68:ARG:HD3  | 14:AH:72:ILE:HG22  | 2.03                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:AJ:43:GLU:O    | 16:AJ:44:TYR:HB2  | 2.21                     | 0.41              |
| 17:AK:110:GLU:C   | 17:AK:111:LYS:CG  | 2.81                     | 0.41              |
| 18:AL:78:ARG:HG3  | 18:AL:78:ARG:HH11 | 1.85                     | 0.41              |
| 18:AL:124:GLY:O   | 18:AL:125:LEU:HG  | 2.21                     | 0.41              |
| 19:AM:7:THR:HB    | 19:AM:10:ARG:HH22 | 1.86                     | 0.41              |
| 20:AN:20:MET:CE   | 20:AN:21:PHE:HE1  | 2.33                     | 0.41              |
| 21:AO:19:GLN:HB2  | 29:AW:74:LYS:HE3  | 2.03                     | 0.41              |
| 22:AP:16:VAL:HA   | 22:AP:17:PRO:HD3  | 1.78                     | 0.41              |
| 22:AP:18:SER:C    | 22:AP:20:ARG:H    | 2.24                     | 0.41              |
| 22:AP:62:LYS:C    | 22:AP:63:ILE:HG13 | 2.40                     | 0.41              |
| 22:AP:63:ILE:O    | 22:AP:72:VAL:HA   | 2.21                     | 0.41              |
| 22:AP:93:LYS:CB   | 22:AP:96:LEU:HD12 | 2.51                     | 0.41              |
| 22:AP:99:LEU:HG   | 22:AP:99:LEU:O    | 2.20                     | 0.41              |
| 23:AQ:47:ARG:HA   | 23:AQ:47:ARG:HD2  | 1.66                     | 0.41              |
| 23:AQ:108:LEU:CD2 | 23:AQ:111:LYS:HZ1 | 2.34                     | 0.41              |
| 24:AR:67:GLY:HA3  | 24:AR:98:ILE:H    | 1.86                     | 0.41              |
| 26:AT:26:LYS:C    | 26:AT:26:LYS:HD2  | 2.41                     | 0.41              |
| 26:AT:58:VAL:CG1  | 26:AT:59:ASN:N    | 2.84                     | 0.41              |
| 28:AV:78:GLN:NE2  | 28:AV:88:HIS:HB3  | 2.36                     | 0.41              |
| 29:AW:10:ARG:O    | 29:AW:11:ASN:OD1  | 2.39                     | 0.41              |
| 29:AW:28:GLU:HA   | 29:AW:61:LYS:HB2  | 2.02                     | 0.41              |
| 29:AW:35:ILE:HG23 | 29:AW:36:ILE:HG22 | 2.02                     | 0.41              |
| 29:AW:65:LYS:HB3  | 29:AW:65:LYS:HE3  | 1.72                     | 0.41              |
| 30:AX:7:ARG:HA    | 30:AX:7:ARG:HD3   | 1.92                     | 0.41              |
| 32:AZ:27:THR:C    | 32:AZ:28:VAL:CG1  | 2.89                     | 0.41              |
| 32:AZ:30:HIS:O    | 32:AZ:31:ASP:CB   | 2.45                     | 0.41              |
| 32:AZ:56:ARG:HH12 | 32:AZ:57:VAL:N    | 2.18                     | 0.41              |
| 33:BA:28:A:H8     | 33:BA:28:A:O5'    | 2.03                     | 0.41              |
| 33:BA:61:G:C4     | 33:BA:107:G:C2    | 3.08                     | 0.41              |
| 33:BA:97:G:H3'    | 33:BA:98:A:C8     | 2.56                     | 0.41              |
| 33:BA:265:G:C8    | 33:BA:267:C:C5    | 3.09                     | 0.41              |
| 33:BA:275:G:N3    | 33:BA:276:G:C8    | 2.89                     | 0.41              |
| 33:BA:450:G:N2    | 33:BA:482:A:N6    | 2.51                     | 0.41              |
| 33:BA:489:C:C4    | 33:BA:490:C:H5    | 2.39                     | 0.41              |
| 33:BA:517:G:N7    | 33:BA:531:U:C6    | 2.89                     | 0.41              |
| 33:BA:628:G:C2    | 33:BA:629:A:C2    | 3.09                     | 0.41              |
| 33:BA:657:U:C6    | 33:BA:657:U:C3'   | 3.04                     | 0.41              |
| 33:BA:755:G:C4    | 33:BA:756:C:C5    | 3.08                     | 0.41              |
| 33:BA:778:G:C4    | 33:BA:779:C:C6    | 3.09                     | 0.41              |
| 33:BA:783:C:C4    | 33:BA:800:G:N2    | 2.88                     | 0.41              |
| 33:BA:859:G:C2    | 33:BA:860:A:N3    | 2.89                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:875:U:H1'    | 40:BH:15:ASN:ND2   | 2.28                     | 0.41              |
| 33:BA:907:A:C6     | 33:BA:908:A:C6     | 3.09                     | 0.41              |
| 33:BA:932:C:O2     | 33:BA:1386:G:C2    | 2.74                     | 0.41              |
| 33:BA:973:G:H4'    | 46:BN:80:ARG:HH12  | 1.85                     | 0.41              |
| 33:BA:1026:G:H8    | 33:BA:1026:G:O5'   | 2.04                     | 0.41              |
| 33:BA:1139:G:C1'   | 33:BA:1140:C:H5    | 2.33                     | 0.41              |
| 33:BA:1152:A:O2'   | 42:BJ:15:HIS:CE1   | 2.74                     | 0.41              |
| 33:BA:1187:G:N3    | 46:BN:99:SER:HB3   | 2.36                     | 0.41              |
| 33:BA:1244:G:C5    | 33:BA:1245:C:C2    | 3.09                     | 0.41              |
| 33:BA:1309:G:OP2   | 45:BM:97:ARG:NE    | 2.54                     | 0.41              |
| 33:BA:1405:G:H1'   | 33:BA:1518:A:O2'   | 2.21                     | 0.41              |
| 33:BA:1447:A:H4'   | 33:BA:1448:C:OP2   | 2.21                     | 0.41              |
| 33:BA:1472:U:C5'   | 33:BA:1472:U:H6    | 2.33                     | 0.41              |
| 33:BA:1495:U:H6    | 33:BA:1495:U:O5'   | 2.03                     | 0.41              |
| 33:BA:1502:A:C5    | 33:BA:1504:G:C6    | 3.09                     | 0.41              |
| 33:BA:1502:A:C5'   | 33:BA:1504:G:N7    | 2.84                     | 0.41              |
| 33:BA:1520:C:H3'   | 33:BA:1520:C:H6    | 1.86                     | 0.41              |
| 34:BB:45:THR:HA    | 34:BB:48:MET:HG2   | 2.02                     | 0.41              |
| 34:BB:59:ILE:HD12  | 34:BB:59:ILE:C     | 2.40                     | 0.41              |
| 35:BC:186:SER:CB   | 35:BC:197:VAL:HG12 | 2.40                     | 0.41              |
| 36:BD:117:VAL:HG22 | 36:BD:122:ILE:CD1  | 2.48                     | 0.41              |
| 36:BD:185:PRO:HB3  | 36:BD:190:LEU:HD11 | 2.03                     | 0.41              |
| 36:BD:201:GLU:OE2  | 37:BE:104:ILE:O    | 2.39                     | 0.41              |
| 37:BE:82:HIS:HE1   | 37:BE:146:MET:HA   | 1.86                     | 0.41              |
| 39:BG:12:LEU:CD1   | 39:BG:13:PRO:HD2   | 2.43                     | 0.41              |
| 39:BG:129:ASN:HA   | 39:BG:134:VAL:CG1  | 2.50                     | 0.41              |
| 41:BI:10:ARG:HA    | 41:BI:77:ALA:HB1   | 2.02                     | 0.41              |
| 41:BI:14:SER:HA    | 41:BI:68:GLY:O     | 2.21                     | 0.41              |
| 44:BL:21:PRO:HD2   | 44:BL:94:TYR:OH    | 2.21                     | 0.41              |
| 44:BL:74:GLN:O     | 44:BL:76:HIS:N     | 2.54                     | 0.41              |
| 47:BO:7:THR:O      | 47:BO:8:ALA:C      | 2.58                     | 0.41              |
| 47:BO:32:THR:HG21  | 47:BO:86:LEU:HD11  | 2.02                     | 0.41              |
| 47:BO:81:ILE:O     | 47:BO:85:GLY:N     | 2.45                     | 0.41              |
| 47:BO:86:LEU:O     | 47:BO:87:ARG:CB    | 2.69                     | 0.41              |
| 49:BQ:20:ILE:HG22  | 49:BQ:21:VAL:N     | 2.36                     | 0.41              |
| 51:BS:63:ASP:O     | 51:BS:64:GLU:C     | 2.58                     | 0.41              |
| 1:C0:41:HIS:CD2    | 1:C0:42:ILE:H      | 2.33                     | 0.41              |
| 4:C3:9:ALA:O       | 4:C3:11:LYS:N      | 2.54                     | 0.41              |
| 7:CA:2:G:H8        | 7:CA:2:G:C5'       | 2.34                     | 0.41              |
| 7:CA:22:U:O2'      | 7:CA:23:G:H5'      | 2.21                     | 0.41              |
| 7:CA:27:C:H1'      | 7:CA:117:G:O2'     | 2.20                     | 0.41              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 7:CA:83:G:C6    | 7:CA:84:G:N7     | 2.88                     | 0.41              |
| 7:CA:105:G:N3   | 7:CA:106:G:H8    | 2.16                     | 0.41              |
| 7:CA:105:G:C6   | 7:CA:106:G:N7    | 2.89                     | 0.41              |
| 8:CB:6:A:O2'    | 16:CJ:134:ALA:O  | 2.24                     | 0.41              |
| 8:CB:53:A:H62   | 8:CB:117:G:N2    | 2.19                     | 0.41              |
| 8:CB:55:G:N1    | 8:CB:56:A:N7     | 2.68                     | 0.41              |
| 8:CB:96:C:C4'   | 30:CX:41:HIS:ND1 | 2.84                     | 0.41              |
| 8:CB:106:C:O2   | 8:CB:106:C:H2'   | 2.21                     | 0.41              |
| 8:CB:107:G:O5'  | 8:CB:107:G:H8    | 2.03                     | 0.41              |
| 8:CB:118:A:H1'  | 8:CB:178:G:O4'   | 2.20                     | 0.41              |
| 8:CB:120:U:C6   | 8:CB:149:A:C5    | 3.09                     | 0.41              |
| 8:CB:136:G:H1'  | 26:CT:1:MET:O    | 2.20                     | 0.41              |
| 8:CB:201:C:H2'  | 8:CB:202:U:O5'   | 2.21                     | 0.41              |
| 8:CB:235:U:C2   | 8:CB:236:C:C6    | 3.09                     | 0.41              |
| 8:CB:253:C:O2   | 8:CB:254:G:O4'   | 2.38                     | 0.41              |
| 8:CB:323:C:C4   | 8:CB:333:G:N7    | 2.89                     | 0.41              |
| 8:CB:346:A:H3'  | 8:CB:347:A:H5''  | 2.02                     | 0.41              |
| 8:CB:410:G:C2   | 8:CB:2407:A:C5   | 3.09                     | 0.41              |
| 8:CB:414:C:H3'  | 8:CB:414:C:C6    | 2.56                     | 0.41              |
| 8:CB:445:C:O2   | 8:CB:449:A:H2    | 2.04                     | 0.41              |
| 8:CB:462:C:O5'  | 8:CB:462:C:H6    | 2.04                     | 0.41              |
| 8:CB:483:A:H2'  | 8:CB:483:A:N3    | 2.36                     | 0.41              |
| 8:CB:539:G:C2   | 8:CB:540:C:C2    | 3.08                     | 0.41              |
| 8:CB:580:U:C5   | 8:CB:581:C:H5    | 2.39                     | 0.41              |
| 8:CB:590:A:N7   | 8:CB:591:U:C4    | 2.89                     | 0.41              |
| 8:CB:649:G:H2'  | 8:CB:650:C:C6    | 2.54                     | 0.41              |
| 8:CB:675:A:C5   | 8:CB:676:A:C6    | 3.09                     | 0.41              |
| 8:CB:722:A:H8   | 8:CB:722:A:O5'   | 2.03                     | 0.41              |
| 8:CB:746:U:O2'  | 8:CB:2611:C:O2'  | 2.37                     | 0.41              |
| 8:CB:754:U:H5'' | 8:CB:755:U:OP2   | 2.21                     | 0.41              |
| 8:CB:775:G:H2'  | 8:CB:775:G:H5'   | 1.73                     | 0.41              |
| 8:CB:799:G:O2'  | 8:CB:800:A:P     | 2.79                     | 0.41              |
| 8:CB:849:A:H61  | 8:CB:929:U:H3    | 1.69                     | 0.41              |
| 8:CB:973:A:C8   | 8:CB:1188:U:C4   | 3.09                     | 0.41              |
| 8:CB:987:C:H2'  | 8:CB:988:A:C8    | 2.55                     | 0.41              |
| 8:CB:1024:G:H21 | 8:CB:1144:A:C4'  | 2.34                     | 0.41              |
| 8:CB:1060:U:C4' | 8:CB:1061:U:O5'  | 2.66                     | 0.41              |
| 8:CB:1131:G:C6  | 16:CJ:77:HIS:NE2 | 2.89                     | 0.41              |
| 8:CB:1136:G:C8  | 8:CB:1136:G:C5'  | 3.01                     | 0.41              |
| 8:CB:1165:A:N3  | 8:CB:1166:G:N7   | 2.68                     | 0.41              |
| 8:CB:1170:C:C5  | 8:CB:1171:G:N7   | 2.89                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 8:CB:1171:G:H2'  | 8:CB:1172:C:O4'  | 2.21                     | 0.41              |
| 8:CB:1216:G:C4   | 8:CB:1217:U:C6   | 3.09                     | 0.41              |
| 8:CB:1232:G:C6   | 8:CB:1233:C:C4   | 3.09                     | 0.41              |
| 8:CB:1247:A:N7   | 8:CB:1249:U:C5   | 2.89                     | 0.41              |
| 8:CB:1310:G:N2   | 8:CB:1610:A:C8   | 2.89                     | 0.41              |
| 8:CB:1322:A:H4'  | 25:CS:82:MET:HE1 | 2.00                     | 0.41              |
| 8:CB:1341:G:H4'  | 55:CB:5247:HOH:O | 2.19                     | 0.41              |
| 8:CB:1342:A:C3'  | 8:CB:1343:G:H5'' | 2.51                     | 0.41              |
| 8:CB:1361:G:N1   | 8:CB:1362:C:N4   | 2.69                     | 0.41              |
| 8:CB:1402:U:C2'  | 8:CB:1403:A:O5'  | 2.69                     | 0.41              |
| 8:CB:1425:G:C2'  | 8:CB:1426:G:C8   | 2.86                     | 0.41              |
| 8:CB:1442:U:C4   | 8:CB:1443:U:N3   | 2.89                     | 0.41              |
| 8:CB:1524:G:C5   | 8:CB:1525:A:C8   | 3.09                     | 0.41              |
| 8:CB:1568:G:H5'' | 9:CC:60:ALA:HB2  | 1.99                     | 0.41              |
| 8:CB:1601:G:H5'' | 8:CB:1602:U:OP2  | 2.21                     | 0.41              |
| 8:CB:1606:C:H4'  | 8:CB:1608:A:C2   | 2.56                     | 0.41              |
| 8:CB:1640:A:H2'  | 8:CB:1641:A:O4'  | 2.21                     | 0.41              |
| 8:CB:1649:G:C2'  | 8:CB:1650:A:O5'  | 2.69                     | 0.41              |
| 8:CB:1704:C:O2   | 8:CB:1705:A:C8   | 2.73                     | 0.41              |
| 8:CB:1740:G:C5   | 8:CB:1741:C:C4   | 3.08                     | 0.41              |
| 8:CB:1750:G:C6   | 8:CB:1751:U:C4   | 3.09                     | 0.41              |
| 8:CB:1795:C:C2   | 8:CB:1796:U:C6   | 3.09                     | 0.41              |
| 8:CB:1797:G:C6   | 8:CB:1798:U:C4   | 3.09                     | 0.41              |
| 8:CB:1805:A:C4   | 8:CB:1813:G:N2   | 2.89                     | 0.41              |
| 8:CB:1863:G:N2   | 8:CB:1880:U:H1'  | 2.36                     | 0.41              |
| 8:CB:1870:C:O2   | 8:CB:1870:C:C2'  | 2.68                     | 0.41              |
| 8:CB:1959:G:N1   | 8:CB:1960:A:C5   | 2.89                     | 0.41              |
| 8:CB:2020:A:C2   | 8:CB:2035:G:C6   | 3.09                     | 0.41              |
| 8:CB:2077:A:C5   | 8:CB:2435:A:C5   | 3.08                     | 0.41              |
| 8:CB:2081:U:C4   | 8:CB:2237:G:C2   | 3.09                     | 0.41              |
| 8:CB:2100:G:O6   | 8:CB:2190:G:C6   | 2.74                     | 0.41              |
| 8:CB:2219:U:C4   | 8:CB:2220:U:C4   | 3.09                     | 0.41              |
| 8:CB:2255:G:C2'  | 8:CB:2256:G:H8   | 2.22                     | 0.41              |
| 8:CB:2290:G:H2'  | 8:CB:2291:U:C6   | 2.49                     | 0.41              |
| 8:CB:2442:C:C4   | 8:CB:2443:C:H5   | 2.39                     | 0.41              |
| 8:CB:2488:G:N1   | 8:CB:2489:U:C4   | 2.88                     | 0.41              |
| 8:CB:2495:G:C6   | 8:CB:2496:C:N3   | 2.88                     | 0.41              |
| 8:CB:2547:A:H4'  | 17:CK:29:HIS:CD2 | 2.56                     | 0.41              |
| 8:CB:2560:A:C6   | 8:CB:2561:U:C4   | 3.08                     | 0.41              |
| 8:CB:2570:G:C5   | 8:CB:2571:U:C5   | 3.09                     | 0.41              |
| 8:CB:2600:A:H2'  | 8:CB:2601:C:H5'  | 2.02                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2635:A:C2     | 8:CB:2636:C:H1'    | 2.55                     | 0.41              |
| 8:CB:2647:U:O2'    | 8:CB:2648:G:H8     | 2.02                     | 0.41              |
| 8:CB:2720:U:C5     | 8:CB:2872:A:N6     | 2.89                     | 0.41              |
| 8:CB:2776:A:O5'    | 8:CB:2776:A:C2'    | 2.67                     | 0.41              |
| 8:CB:2805:C:H2'    | 8:CB:2806:C:C6     | 2.56                     | 0.41              |
| 8:CB:2808:G:N3     | 8:CB:2891:U:O2     | 2.54                     | 0.41              |
| 8:CB:2817:U:C2'    | 8:CB:2818:U:O5'    | 2.68                     | 0.41              |
| 9:CC:12:ARG:HB2    | 9:CC:21:PRO:HD3    | 2.02                     | 0.41              |
| 9:CC:63:ILE:N      | 9:CC:63:ILE:HD13   | 2.36                     | 0.41              |
| 9:CC:75:ALA:HB1    | 9:CC:93:VAL:HG13   | 2.02                     | 0.41              |
| 9:CC:107:LYS:N     | 9:CC:194:VAL:HG21  | 2.20                     | 0.41              |
| 9:CC:155:ARG:O     | 9:CC:159:THR:CG2   | 2.69                     | 0.41              |
| 9:CC:174:ARG:CB    | 9:CC:180:MET:HG3   | 2.45                     | 0.41              |
| 9:CC:184:GLU:O     | 9:CC:187:CYS:SG    | 2.74                     | 0.41              |
| 10:CD:60:VAL:HB    | 10:CD:62:LYS:HZ3   | 1.86                     | 0.41              |
| 10:CD:61:THR:CG2   | 10:CD:62:LYS:HE3   | 2.51                     | 0.41              |
| 10:CD:62:LYS:N     | 10:CD:63:PRO:CD    | 2.84                     | 0.41              |
| 10:CD:97:SER:OG    | 10:CD:185:ASN:HA   | 2.21                     | 0.41              |
| 10:CD:122:VAL:HG21 | 10:CD:141:ARG:HH11 | 1.86                     | 0.41              |
| 10:CD:155:VAL:O    | 10:CD:155:VAL:HG12 | 2.20                     | 0.41              |
| 10:CD:184:ARG:HH12 | 22:CP:4:ILE:HG21   | 1.78                     | 0.41              |
| 11:CE:104:ALA:O    | 11:CE:106:LYS:N    | 2.54                     | 0.41              |
| 11:CE:132:LYS:CB   | 11:CE:134:LEU:HD13 | 2.51                     | 0.41              |
| 11:CE:190:ALA:C    | 11:CE:194:LYS:NZ   | 2.74                     | 0.41              |
| 12:CF:65:LEU:N     | 12:CF:86:CYS:O     | 2.54                     | 0.41              |
| 12:CF:153:ILE:O    | 12:CF:154:THR:OG1  | 2.34                     | 0.41              |
| 13:CG:28:LYS:O     | 13:CG:78:VAL:O     | 2.38                     | 0.41              |
| 13:CG:125:PRO:HB2  | 13:CG:126:THR:H    | 1.59                     | 0.41              |
| 13:CG:143:VAL:HG22 | 13:CG:147:LEU:HD11 | 2.01                     | 0.41              |
| 13:CG:144:ALA:O    | 13:CG:163:TYR:CE1  | 2.74                     | 0.41              |
| 14:CH:8:LYS:HG3    | 14:CH:9:VAL:H      | 1.86                     | 0.41              |
| 14:CH:41:LYS:H     | 14:CH:41:LYS:HG2   | 1.71                     | 0.41              |
| 14:CH:53:GLU:OE2   | 14:CH:57:LYS:HE3   | 2.21                     | 0.41              |
| 14:CH:70:GLU:H     | 14:CH:70:GLU:HG3   | 1.60                     | 0.41              |
| 14:CH:108:VAL:O    | 14:CH:110:VAL:HG12 | 2.21                     | 0.41              |
| 15:CI:77:VAL:O     | 15:CI:77:VAL:HG12  | 2.20                     | 0.41              |
| 16:CJ:39:LYS:HB3   | 16:CJ:40:HIS:H     | 1.76                     | 0.41              |
| 16:CJ:44:TYR:CD1   | 16:CJ:48:VAL:HG23  | 2.56                     | 0.41              |
| 16:CJ:130:HIS:O    | 16:CJ:131:ASN:C    | 2.60                     | 0.41              |
| 18:CL:21:ARG:O     | 18:CL:23:ILE:N     | 2.54                     | 0.41              |
| 18:CL:56:PRO:HB2   | 18:CL:57:LEU:H     | 1.71                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 19:CM:73:ILE:HD11 | 19:CM:92:TRP:HB3  | 2.02                     | 0.41              |
| 19:CM:111:GLU:HG2 | 19:CM:111:GLU:O   | 2.21                     | 0.41              |
| 19:CM:133:LYS:HD2 | 19:CM:134:THR:O   | 2.21                     | 0.41              |
| 20:CN:60:VAL:O    | 20:CN:63:ARG:CB   | 2.69                     | 0.41              |
| 21:CO:2:ASP:CB    | 21:CO:4:LYS:NZ    | 2.81                     | 0.41              |
| 21:CO:30:ARG:O    | 21:CO:102:ARG:NH2 | 2.54                     | 0.41              |
| 22:CP:27:VAL:N    | 22:CP:47:ILE:HG13 | 2.36                     | 0.41              |
| 22:CP:60:VAL:O    | 22:CP:61:ARG:HB2  | 2.20                     | 0.41              |
| 24:CR:5:PHE:CE1   | 24:CR:37:GLU:CB   | 3.03                     | 0.41              |
| 24:CR:76:LYS:HD3  | 24:CR:90:ARG:CD   | 2.49                     | 0.41              |
| 27:CU:35:VAL:O    | 27:CU:35:VAL:HG13 | 2.20                     | 0.41              |
| 27:CU:39:ASN:N    | 27:CU:39:ASN:OD1  | 2.53                     | 0.41              |
| 27:CU:53:GLN:HA   | 27:CU:54:PRO:HD3  | 1.87                     | 0.41              |
| 28:CV:51:GLN:HB2  | 28:CV:51:GLN:HE21 | 1.63                     | 0.41              |
| 28:CV:65:VAL:HG13 | 28:CV:68:LYS:HG3  | 2.03                     | 0.41              |
| 29:CW:3:LYS:CD    | 29:CW:10:ARG:HE   | 2.34                     | 0.41              |
| 29:CW:23:LYS:CG   | 29:CW:24:ARG:N    | 2.83                     | 0.41              |
| 29:CW:47:GLY:O    | 29:CW:48:ALA:O    | 2.38                     | 0.41              |
| 30:CX:7:ARG:HH22  | 30:CX:56:LEU:HD21 | 1.86                     | 0.41              |
| 30:CX:44:LYS:HD2  | 30:CX:47:ARG:HG3  | 2.03                     | 0.41              |
| 31:CY:2:LYS:HA    | 31:CY:43:ILE:CD1  | 2.51                     | 0.41              |
| 31:CY:50:VAL:O    | 31:CY:51:SER:C    | 2.59                     | 0.41              |
| 33:DA:75:G:H3'    | 33:DA:76:G:H8     | 1.86                     | 0.41              |
| 33:DA:104:G:C2    | 33:DA:105:G:N7    | 2.89                     | 0.41              |
| 33:DA:113:G:H21   | 33:DA:353:A:H8    | 1.68                     | 0.41              |
| 33:DA:120:A:N6    | 33:DA:122:G:C2    | 2.89                     | 0.41              |
| 33:DA:133:U:O2    | 33:DA:230:G:C5    | 2.74                     | 0.41              |
| 33:DA:191:G:C6    | 33:DA:192:A:N7    | 2.89                     | 0.41              |
| 33:DA:235:C:O2'   | 49:DQ:72:TRP:HZ2  | 2.04                     | 0.41              |
| 33:DA:243:A:N6    | 33:DA:281:G:O2'   | 2.54                     | 0.41              |
| 33:DA:318:G:C6    | 33:DA:336:A:C6    | 3.08                     | 0.41              |
| 33:DA:318:G:H2'   | 33:DA:319:G:H8    | 1.86                     | 0.41              |
| 33:DA:373:A:H3'   | 33:DA:373:A:P     | 2.60                     | 0.41              |
| 33:DA:376:G:C4    | 33:DA:377:G:N7    | 2.89                     | 0.41              |
| 33:DA:386:C:H3'   | 33:DA:387:U:C5'   | 2.49                     | 0.41              |
| 33:DA:434:U:H5''  | 33:DA:435:A:P     | 2.61                     | 0.41              |
| 33:DA:435:A:C2    | 33:DA:436:C:H1'   | 2.56                     | 0.41              |
| 33:DA:468:A:H3'   | 33:DA:469:C:C5    | 2.55                     | 0.41              |
| 33:DA:518:C:H5'   | 33:DA:530:G:H1'   | 2.02                     | 0.41              |
| 33:DA:518:C:C4'   | 33:DA:529:G:N2    | 2.84                     | 0.41              |
| 33:DA:534:U:C6    | 33:DA:534:U:C3'   | 3.04                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:544:G:N2    | 33:DA:545:C:C2    | 2.89                     | 0.41              |
| 33:DA:655:A:N1    | 33:DA:754:C:N4    | 2.68                     | 0.41              |
| 33:DA:700:G:C8    | 33:DA:700:G:H5'   | 2.56                     | 0.41              |
| 33:DA:704:A:N7    | 33:DA:705:G:C4    | 2.89                     | 0.41              |
| 33:DA:712:A:C8    | 33:DA:712:A:C5'   | 2.94                     | 0.41              |
| 33:DA:725:G:C2    | 33:DA:726:C:C6    | 3.09                     | 0.41              |
| 33:DA:743:A:C2'   | 33:DA:744:C:O5'   | 2.69                     | 0.41              |
| 33:DA:749:A:C2    | 33:DA:750:C:C2    | 3.09                     | 0.41              |
| 33:DA:770:C:O2    | 33:DA:770:C:C2'   | 2.68                     | 0.41              |
| 33:DA:781:A:H4'   | 33:DA:1522:U:O2'  | 2.20                     | 0.41              |
| 33:DA:786:G:C6    | 33:DA:787:A:C5    | 3.08                     | 0.41              |
| 33:DA:795:C:P     | 33:DA:1522:U:H5'  | 2.61                     | 0.41              |
| 33:DA:824:G:C2    | 33:DA:877:G:N1    | 2.88                     | 0.41              |
| 33:DA:825:A:N3    | 33:DA:826:C:C6    | 2.89                     | 0.41              |
| 33:DA:827:U:O4    | 33:DA:870:U:C2    | 2.74                     | 0.41              |
| 33:DA:878:A:H2'   | 33:DA:879:C:O5'   | 2.20                     | 0.41              |
| 33:DA:956:U:O2    | 33:DA:1225:A:C2   | 2.74                     | 0.41              |
| 33:DA:984:C:N4    | 33:DA:985:C:N4    | 2.68                     | 0.41              |
| 33:DA:1015:G:C2'  | 33:DA:1016:A:O5'  | 2.68                     | 0.41              |
| 33:DA:1040:U:H2'  | 33:DA:1041:G:O4'  | 2.21                     | 0.41              |
| 33:DA:1053:G:C3'  | 33:DA:1054:C:H5'  | 2.51                     | 0.41              |
| 33:DA:1055:A:C2   | 33:DA:1056:U:H1'  | 2.56                     | 0.41              |
| 33:DA:1153:G:C2   | 33:DA:1154:G:C8   | 3.09                     | 0.41              |
| 33:DA:1231:G:C2   | 33:DA:1232:U:H1'  | 2.55                     | 0.41              |
| 33:DA:1238:A:C5   | 33:DA:1303:C:O4'  | 2.73                     | 0.41              |
| 33:DA:1251:A:H2   | 33:DA:1369:C:O2   | 2.03                     | 0.41              |
| 33:DA:1285:A:HO2' | 33:DA:1286:U:H5'' | 1.80                     | 0.41              |
| 33:DA:1329:A:P    | 45:DM:28:ARG:HG3  | 2.61                     | 0.41              |
| 33:DA:1386:G:N2   | 33:DA:1387:G:C5   | 2.89                     | 0.41              |
| 33:DA:1392:G:HO2' | 33:DA:1393:U:H5'  | 1.84                     | 0.41              |
| 33:DA:1405:G:N1   | 33:DA:1497:G:C2   | 2.89                     | 0.41              |
| 33:DA:1487:G:C6   | 33:DA:1488:G:C8   | 3.08                     | 0.41              |
| 33:DA:1494:G:C8   | 33:DA:1494:G:C3'  | 3.03                     | 0.41              |
| 33:DA:1507:A:C8   | 33:DA:1507:A:C5'  | 2.95                     | 0.41              |
| 34:DB:65:LYS:HB3  | 34:DB:89:PHE:CE1  | 2.52                     | 0.41              |
| 35:DC:53:ARG:O    | 35:DC:67:ILE:HD12 | 2.21                     | 0.41              |
| 35:DC:76:ILE:HA   | 35:DC:83:VAL:HG21 | 2.03                     | 0.41              |
| 36:DD:2:ARG:HH22  | 36:DD:114:ARG:CZ  | 2.34                     | 0.41              |
| 36:DD:196:GLU:C   | 36:DD:198:LEU:H   | 2.23                     | 0.41              |
| 38:DF:41:ASP:C    | 38:DF:42:TRP:CD1  | 2.94                     | 0.41              |
| 38:DF:61:LEU:HA   | 38:DF:61:LEU:HD13 | 1.80                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 39:DG:5:VAL:HG12   | 39:DG:6:ILE:N     | 2.36                     | 0.41              |
| 39:DG:137:ARG:C    | 39:DG:137:ARG:HD2 | 2.41                     | 0.41              |
| 40:DH:63:LYS:HB3   | 40:DH:70:VAL:HG21 | 2.01                     | 0.41              |
| 41:DI:5:TYR:HB3    | 41:DI:88:GLU:HG2  | 2.02                     | 0.41              |
| 41:DI:18:VAL:HG23  | 41:DI:85:ALA:HB2  | 2.02                     | 0.41              |
| 41:DI:46:VAL:HG11  | 41:DI:75:ALA:CB   | 2.41                     | 0.41              |
| 41:DI:123:ARG:HD3  | 41:DI:124:PRO:CD  | 2.51                     | 0.41              |
| 42:DJ:12:ALA:HB3   | 42:DJ:18:ILE:HD12 | 2.03                     | 0.41              |
| 42:DJ:51:VAL:O     | 42:DJ:62:ARG:HA   | 2.20                     | 0.41              |
| 43:DK:106:ILE:HD11 | 43:DK:109:ILE:CG2 | 2.46                     | 0.41              |
| 44:DL:33:CYS:HB3   | 44:DL:77:SER:O    | 2.20                     | 0.41              |
| 44:DL:56:LEU:HB2   | 44:DL:58:ASN:OD1  | 2.21                     | 0.41              |
| 48:DP:70:ARG:O     | 48:DP:74:LEU:HG   | 2.21                     | 0.41              |
| 49:DQ:82:VAL:C     | 49:DQ:83:LEU:HD22 | 2.41                     | 0.41              |
| 51:DS:38:THR:HG23  | 51:DS:66:VAL:O    | 2.20                     | 0.41              |
| 2:A1:15:GLY:HA3    | 2:A1:47:ILE:HB    | 2.03                     | 0.41              |
| 2:A1:36:LYS:HE2    | 8:AB:2286:G:H8    | 1.86                     | 0.41              |
| 3:A2:12:ARG:HE     | 3:A2:12:ARG:HB3   | 1.65                     | 0.41              |
| 7:AA:113:C:C4      | 7:AA:114:C:C4     | 3.09                     | 0.41              |
| 8:AB:149:A:C2'     | 8:AB:150:U:H5'    | 2.51                     | 0.41              |
| 8:AB:416:U:C4      | 8:AB:417:C:C4     | 3.08                     | 0.41              |
| 8:AB:448:U:O2      | 11:AE:79:ARG:NH1  | 2.54                     | 0.41              |
| 8:AB:484:C:N3      | 8:AB:496:G:N2     | 2.46                     | 0.41              |
| 8:AB:511:U:H5''    | 8:AB:512:G:OP2    | 2.21                     | 0.41              |
| 8:AB:524:G:C2      | 8:AB:525:U:C6     | 3.09                     | 0.41              |
| 8:AB:529:A:C5      | 8:AB:2023:C:C4    | 3.08                     | 0.41              |
| 8:AB:558:U:P       | 16:AJ:113:PRO:HB2 | 2.61                     | 0.41              |
| 8:AB:579:G:C4'     | 8:AB:2017:U:H2'   | 2.51                     | 0.41              |
| 8:AB:599:A:C2      | 8:AB:659:G:C6     | 3.09                     | 0.41              |
| 8:AB:668:A:C2      | 8:AB:670:A:N1     | 2.89                     | 0.41              |
| 8:AB:670:A:O4'     | 8:AB:671:C:H5''   | 2.20                     | 0.41              |
| 8:AB:1122:G:N2     | 8:AB:1123:C:O4'   | 2.54                     | 0.41              |
| 8:AB:1202:G:C5     | 8:AB:1203:U:C2    | 3.08                     | 0.41              |
| 8:AB:1567:G:N7     | 9:AC:82:TYR:CD2   | 2.89                     | 0.41              |
| 8:AB:1776:G:C2     | 8:AB:1789:A:N3    | 2.89                     | 0.41              |
| 8:AB:1805:A:N3     | 8:AB:1813:G:C2    | 2.89                     | 0.41              |
| 8:AB:1815:A:O5'    | 8:AB:1815:A:H8    | 1.97                     | 0.41              |
| 8:AB:1926:U:C5'    | 8:AB:1927:A:OP2   | 2.69                     | 0.41              |
| 8:AB:1998:A:C8     | 8:AB:1998:A:H3'   | 2.56                     | 0.41              |
| 8:AB:2095:A:C8     | 8:AB:2095:A:H3'   | 2.56                     | 0.41              |
| 8:AB:2464:G:N3     | 8:AB:2465:C:C6    | 2.89                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AB:2478:A:H3'   | 8:AB:2479:U:C6    | 2.56                     | 0.41              |
| 8:AB:2519:U:H5'   | 8:AB:2567:G:N2    | 2.35                     | 0.41              |
| 8:AB:2531:A:H2'   | 8:AB:2532:G:H5'   | 2.02                     | 0.41              |
| 8:AB:2746:U:O2    | 8:AB:2746:U:H2'   | 2.21                     | 0.41              |
| 8:AB:2813:A:C5    | 8:AB:2814:A:N7    | 2.89                     | 0.41              |
| 8:AB:2835:A:C5    | 8:AB:2879:A:C6    | 3.08                     | 0.41              |
| 9:AC:30:ALA:H     | 9:AC:31:PRO:CD    | 2.30                     | 0.41              |
| 9:AC:44:ASN:OD1   | 9:AC:48:ILE:O     | 2.39                     | 0.41              |
| 10:AD:32:ASN:C    | 10:AD:34:VAL:H    | 2.25                     | 0.41              |
| 14:AH:127:GLU:HG3 | 14:AH:145:ASN:ND2 | 2.35                     | 0.41              |
| 15:AI:126:ARG:HG2 | 15:AI:129:GLU:OE2 | 2.20                     | 0.41              |
| 16:AJ:15:TRP:CD1  | 16:AJ:15:TRP:N    | 2.88                     | 0.41              |
| 16:AJ:26:GLY:O    | 16:AJ:29:ALA:N    | 2.53                     | 0.41              |
| 18:AL:65:GLY:C    | 18:AL:66:PHE:CD1  | 2.94                     | 0.41              |
| 19:AM:42:THR:OG1  | 19:AM:45:GLN:NE2  | 2.53                     | 0.41              |
| 20:AN:67:PHE:O    | 20:AN:68:ALA:HB2  | 2.21                     | 0.41              |
| 21:AO:76:LYS:HB2  | 21:AO:106:LEU:CD2 | 2.47                     | 0.41              |
| 23:AQ:45:ALA:O    | 23:AQ:49:ARG:CB   | 2.67                     | 0.41              |
| 23:AQ:49:ARG:HH21 | 23:AQ:52:ARG:HG2  | 1.85                     | 0.41              |
| 26:AT:7:LEU:HD12  | 26:AT:7:LEU:C     | 2.40                     | 0.41              |
| 29:AW:10:ARG:C    | 29:AW:11:ASN:CG   | 2.80                     | 0.41              |
| 29:AW:49:ASN:O    | 29:AW:50:VAL:O    | 2.39                     | 0.41              |
| 30:AX:32:ALA:O    | 30:AX:34:SER:N    | 2.54                     | 0.41              |
| 33:BA:10:A:C2     | 33:BA:25:C:O2     | 2.74                     | 0.41              |
| 33:BA:32:A:N1     | 33:BA:33:A:C5     | 2.89                     | 0.41              |
| 33:BA:53:A:C2     | 33:BA:359:G:C4    | 3.09                     | 0.41              |
| 33:BA:136:C:H2'   | 33:BA:137:U:O4'   | 2.21                     | 0.41              |
| 33:BA:212:G:N3    | 33:BA:213:G:C8    | 2.89                     | 0.41              |
| 33:BA:320:A:H2'   | 33:BA:321:A:O4'   | 2.21                     | 0.41              |
| 33:BA:325:A:N7    | 33:BA:326:G:C5    | 2.89                     | 0.41              |
| 33:BA:355:C:C2    | 33:BA:356:A:C8    | 3.09                     | 0.41              |
| 33:BA:359:G:H2'   | 33:BA:360:G:O4'   | 2.20                     | 0.41              |
| 33:BA:545:C:C3'   | 33:BA:546:A:H5'   | 2.51                     | 0.41              |
| 33:BA:603:U:C6    | 33:BA:604:G:C8    | 3.08                     | 0.41              |
| 33:BA:664:G:N2    | 33:BA:742:G:N2    | 2.69                     | 0.41              |
| 33:BA:1022:A:H5'' | 33:BA:1022:A:H8   | 1.86                     | 0.41              |
| 33:BA:1070:U:O2   | 33:BA:1071:C:C6   | 2.74                     | 0.41              |
| 33:BA:1120:C:O2   | 33:BA:1154:G:C2   | 2.74                     | 0.41              |
| 33:BA:1363:A:C8   | 33:BA:1365:G:C8   | 3.09                     | 0.41              |
| 35:BC:3:LYS:O     | 35:BC:4:VAL:HB    | 2.20                     | 0.41              |
| 35:BC:134:LYS:HB3 | 35:BC:135:ARG:H   | 1.63                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 36:BD:16:THR:HG22 | 36:BD:17:ASP:N    | 2.36                     | 0.41              |
| 36:BD:200:VAL:CG2 | 36:BD:201:GLU:N   | 2.82                     | 0.41              |
| 40:BH:6:ILE:O     | 40:BH:10:LEU:HG   | 2.21                     | 0.41              |
| 41:BI:18:VAL:HG13 | 41:BI:64:ILE:HG12 | 2.02                     | 0.41              |
| 41:BI:44:ARG:HH21 | 41:BI:45:MET:CE   | 2.34                     | 0.41              |
| 41:BI:94:ARG:C    | 41:BI:96:GLU:N    | 2.74                     | 0.41              |
| 42:BJ:34:ALA:N    | 42:BJ:83:THR:OG1  | 2.54                     | 0.41              |
| 47:BO:56:LEU:C    | 47:BO:58:MET:N    | 2.74                     | 0.41              |
| 48:BP:64:GLY:O    | 48:BP:65:ALA:C    | 2.60                     | 0.41              |
| 49:BQ:46:HIS:HB2  | 49:BQ:66:LEU:CD1  | 2.50                     | 0.41              |
| 50:BR:49:LYS:NZ   | 50:BR:53:GLN:OE1  | 2.54                     | 0.41              |
| 53:BU:39:LYS:HG3  | 53:BU:39:LYS:H    | 1.69                     | 0.41              |
| 5:C4:2:LYS:HG2    | 5:C4:36:ARG:O     | 2.21                     | 0.41              |
| 7:CA:20:G:C2      | 7:CA:21:G:C5      | 3.09                     | 0.41              |
| 8:CB:134:G:N2     | 8:CB:146:A:C4     | 2.89                     | 0.41              |
| 8:CB:194:G:N3     | 8:CB:195:A:C8     | 2.89                     | 0.41              |
| 8:CB:246:C:N4     | 8:CB:247:G:C5     | 2.89                     | 0.41              |
| 8:CB:260:G:C8     | 8:CB:260:G:C3'    | 3.03                     | 0.41              |
| 8:CB:307:G:N2     | 8:CB:310:A:C8     | 2.88                     | 0.41              |
| 8:CB:415:A:N6     | 8:CB:2407:A:H61   | 2.18                     | 0.41              |
| 8:CB:538:A:C2     | 8:CB:539:G:C5     | 3.08                     | 0.41              |
| 8:CB:598:U:H1'    | 18:CL:22:GLY:HA2  | 2.01                     | 0.41              |
| 8:CB:668:A:C2     | 8:CB:670:A:N1     | 2.89                     | 0.41              |
| 8:CB:705:A:N6     | 8:CB:726:G:H1'    | 2.36                     | 0.41              |
| 8:CB:715:A:H5''   | 47:DO:88:ARG:NH2  | 2.35                     | 0.41              |
| 8:CB:754:U:C4     | 8:CB:755:U:C4     | 3.09                     | 0.41              |
| 8:CB:769:U:O2     | 8:CB:1379:U:H1'   | 2.21                     | 0.41              |
| 8:CB:871:U:C2     | 8:CB:907:G:N1     | 2.89                     | 0.41              |
| 8:CB:925:A:N6     | 8:CB:926:G:C6     | 2.88                     | 0.41              |
| 8:CB:1020:A:C2    | 8:CB:1141:U:O2    | 2.74                     | 0.41              |
| 8:CB:1081:U:O2'   | 15:CI:127:SER:HA  | 2.21                     | 0.41              |
| 8:CB:1084:A:H1'   | 8:CB:1106:G:H5'   | 2.02                     | 0.41              |
| 8:CB:1096:A:C8    | 8:CB:1096:A:C3'   | 3.03                     | 0.41              |
| 8:CB:1195:G:N1    | 8:CB:1196:C:C4    | 2.89                     | 0.41              |
| 8:CB:1196:C:O4'   | 8:CB:1226:A:C6    | 2.74                     | 0.41              |
| 8:CB:1202:G:O6    | 8:CB:1203:U:O2    | 2.39                     | 0.41              |
| 8:CB:1257:C:N3    | 8:CB:1258:U:C4    | 2.89                     | 0.41              |
| 8:CB:1289:C:H2'   | 8:CB:1290:C:H6    | 1.86                     | 0.41              |
| 8:CB:1444:G:N2    | 8:CB:1445:G:H1'   | 2.36                     | 0.41              |
| 8:CB:1479:G:C2'   | 8:CB:1480:C:H5'   | 2.51                     | 0.41              |
| 8:CB:1479:G:N1    | 8:CB:1513:U:C2    | 2.90                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:CB:1590:A:C4    | 8:CB:1591:A:N7    | 2.88                     | 0.41              |
| 8:CB:1688:U:O2    | 8:CB:1700:A:H8    | 2.04                     | 0.41              |
| 8:CB:1788:C:C4    | 8:CB:1789:A:N7    | 2.88                     | 0.41              |
| 8:CB:1877:A:C8    | 8:CB:1877:A:C3'   | 3.04                     | 0.41              |
| 8:CB:1987:A:H2'   | 8:CB:1988:G:H8    | 1.87                     | 0.41              |
| 8:CB:2013:A:C2    | 8:CB:2014:A:C4    | 3.09                     | 0.41              |
| 8:CB:2024:G:C5    | 8:CB:2025:C:C5    | 3.09                     | 0.41              |
| 8:CB:2079:U:C2    | 8:CB:2080:A:C8    | 3.08                     | 0.41              |
| 8:CB:2375:G:H2'   | 8:CB:2377:A:N7    | 2.36                     | 0.41              |
| 8:CB:2487:G:C2    | 8:CB:2488:G:C8    | 3.09                     | 0.41              |
| 8:CB:2531:A:N3    | 8:CB:2532:G:C8    | 2.89                     | 0.41              |
| 8:CB:2560:A:C2    | 8:CB:2561:U:N1    | 2.88                     | 0.41              |
| 8:CB:2563:U:OP1   | 17:CK:26:GLY:N    | 2.54                     | 0.41              |
| 8:CB:2645:G:C3'   | 8:CB:2646:C:C5'   | 2.90                     | 0.41              |
| 8:CB:2723:C:C2    | 8:CB:2724:U:C2    | 3.09                     | 0.41              |
| 8:CB:2737:G:N2    | 8:CB:2738:A:N3    | 2.70                     | 0.41              |
| 8:CB:2800:A:H2'   | 8:CB:2801:G:O4'   | 2.21                     | 0.41              |
| 8:CB:2833:U:H4'   | 8:CB:2834:G:OP2   | 2.20                     | 0.41              |
| 8:CB:2877:G:O2'   | 8:CB:2878:U:H5'   | 2.21                     | 0.41              |
| 8:CB:2881:U:H1'   | 20:CN:45:ARG:HH21 | 1.85                     | 0.41              |
| 9:CC:62:ARG:HH11  | 9:CC:62:ARG:HG3   | 1.82                     | 0.41              |
| 9:CC:126:GLY:O    | 9:CC:191:LEU:HD23 | 2.21                     | 0.41              |
| 9:CC:162:GLN:HE21 | 9:CC:162:GLN:HB3  | 1.64                     | 0.41              |
| 10:CD:31:ALA:HA   | 10:CD:51:THR:OG1  | 2.21                     | 0.41              |
| 10:CD:125:TRP:HD1 | 10:CD:126:ASN:N   | 2.19                     | 0.41              |
| 10:CD:145:SER:HA  | 10:CD:159:LYS:NZ  | 2.36                     | 0.41              |
| 10:CD:170:VAL:HB  | 10:CD:194:PRO:HG2 | 2.03                     | 0.41              |
| 11:CE:98:LYS:O    | 11:CE:100:MET:N   | 2.54                     | 0.41              |
| 11:CE:195:GLN:O   | 11:CE:196:VAL:C   | 2.59                     | 0.41              |
| 12:CF:2:LYS:HE2   | 12:CF:2:LYS:CA    | 2.49                     | 0.41              |
| 14:CH:26:ALA:HB1  | 14:CH:29:PHE:N    | 2.36                     | 0.41              |
| 14:CH:115:VAL:HB  | 14:CH:132:PHE:HE1 | 1.77                     | 0.41              |
| 17:CK:27:GLY:O    | 17:CK:28:SER:C    | 2.59                     | 0.41              |
| 18:CL:38:GLN:HG3  | 18:CL:39:LYS:N    | 2.36                     | 0.41              |
| 19:CM:73:ILE:CG1  | 19:CM:90:GLU:HG3  | 2.50                     | 0.41              |
| 21:CO:84:GLU:O    | 21:CO:86:GLY:N    | 2.53                     | 0.41              |
| 23:CQ:20:ALA:O    | 23:CQ:23:TYR:CD2  | 2.74                     | 0.41              |
| 24:CR:6:GLN:HE21  | 24:CR:6:GLN:HB3   | 1.53                     | 0.41              |
| 24:CR:11:GLN:HB3  | 24:CR:21:ARG:HH12 | 1.86                     | 0.41              |
| 25:CS:65:ASP:CG   | 25:CS:66:ILE:H    | 2.23                     | 0.41              |
| 25:CS:85:ILE:HD12 | 25:CS:86:MET:N    | 2.35                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:CU:10:VAL:HG22 | 27:CU:25:LYS:HE2   | 2.01                     | 0.41              |
| 27:CU:48:VAL:N    | 27:CU:49:PRO:CD    | 2.84                     | 0.41              |
| 27:CU:92:VAL:O    | 27:CU:93:ARG:CB    | 2.68                     | 0.41              |
| 33:DA:93:U:H5''   | 33:DA:94:G:OP2     | 2.21                     | 0.41              |
| 33:DA:295:C:O2'   | 33:DA:296:U:H5'    | 2.21                     | 0.41              |
| 33:DA:364:A:C2    | 33:DA:365:U:O4     | 2.74                     | 0.41              |
| 33:DA:383:A:H2'   | 33:DA:384:G:O4'    | 2.20                     | 0.41              |
| 33:DA:435:A:C5    | 33:DA:436:C:C5     | 3.09                     | 0.41              |
| 33:DA:448:A:N1    | 33:DA:449:G:N3     | 2.68                     | 0.41              |
| 33:DA:462:G:C2'   | 33:DA:462:G:N3     | 2.84                     | 0.41              |
| 33:DA:523:A:N1    | 44:DL:88:ASP:HB2   | 2.36                     | 0.41              |
| 33:DA:642:A:C8    | 40:DH:106:SER:HA   | 2.56                     | 0.41              |
| 33:DA:674:G:O2'   | 33:DA:675:A:O4'    | 2.28                     | 0.41              |
| 33:DA:685:G:C2    | 33:DA:706:A:N6     | 2.89                     | 0.41              |
| 33:DA:718:A:C3'   | 33:DA:719:C:H5'    | 2.51                     | 0.41              |
| 33:DA:732:C:O5'   | 33:DA:732:C:H6     | 2.04                     | 0.41              |
| 33:DA:792:A:N3    | 33:DA:794:A:C4     | 2.89                     | 0.41              |
| 33:DA:886:G:C2    | 33:DA:887:G:C8     | 3.09                     | 0.41              |
| 33:DA:918:A:N6    | 33:DA:919:A:C6     | 2.90                     | 0.41              |
| 33:DA:1002:G:C2'  | 33:DA:1003:G:H5'   | 2.51                     | 0.41              |
| 33:DA:1022:A:C5   | 33:DA:1023:U:C5    | 3.09                     | 0.41              |
| 33:DA:1084:G:C6   | 33:DA:1085:U:O4    | 2.73                     | 0.41              |
| 33:DA:1128:C:N3   | 33:DA:1145:A:H2    | 2.19                     | 0.41              |
| 33:DA:1216:A:H5'' | 46:DN:4:SER:HB2    | 1.99                     | 0.41              |
| 33:DA:1266:G:N2   | 33:DA:1270:G:C5    | 2.89                     | 0.41              |
| 33:DA:1312:G:C5   | 51:DS:3:SER:OG     | 2.74                     | 0.41              |
| 33:DA:1345:U:C5   | 33:DA:1377:A:C6    | 3.08                     | 0.41              |
| 33:DA:1349:A:C1'  | 33:DA:1374:A:N6    | 2.84                     | 0.41              |
| 33:DA:1384:C:H5   | 55:DA:5268:HOH:O   | 2.03                     | 0.41              |
| 33:DA:1437:A:C4   | 33:DA:1465:A:C2    | 3.09                     | 0.41              |
| 33:DA:1438:G:N3   | 33:DA:1464:U:O2    | 2.53                     | 0.41              |
| 33:DA:1441:A:C8   | 33:DA:1442:G:N7    | 2.89                     | 0.41              |
| 33:DA:1470:U:H6   | 33:DA:1470:U:H3'   | 1.85                     | 0.41              |
| 33:DA:1504:G:H5'' | 33:DA:1505:G:O4'   | 2.20                     | 0.41              |
| 34:DB:21:TYR:O    | 34:DB:22:TRP:HD1   | 2.03                     | 0.41              |
| 34:DB:105:THR:O   | 34:DB:105:THR:HG22 | 2.21                     | 0.41              |
| 34:DB:113:LEU:CD1 | 34:DB:147:LEU:HD13 | 2.50                     | 0.41              |
| 35:DC:21:TRP:HB2  | 35:DC:22:PHE:H     | 1.54                     | 0.41              |
| 35:DC:33:ASP:OD2  | 46:DN:64:ARG:HG2   | 2.21                     | 0.41              |
| 37:DE:20:VAL:HG22 | 37:DE:21:SER:N     | 2.34                     | 0.41              |
| 37:DE:99:SER:C    | 37:DE:101:GLY:H    | 2.24                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:DF:52:ASN:HB2  | 38:DF:85:ILE:CG2   | 2.50                     | 0.41              |
| 40:DH:75:GLN:CD   | 40:DH:76:ARG:H     | 2.23                     | 0.41              |
| 41:DI:38:PHE:HB3  | 41:DI:43:ALA:HB3   | 2.03                     | 0.41              |
| 43:DK:28:ASN:HD22 | 43:DK:29:THR:N     | 2.16                     | 0.41              |
| 44:DL:20:VAL:CG1  | 44:DL:22:ALA:H     | 2.34                     | 0.41              |
| 45:DM:104:ASN:H   | 45:DM:106:ARG:HH12 | 1.69                     | 0.41              |
| 48:DP:30:GLY:O    | 48:DP:32:PHE:CD2   | 2.74                     | 0.41              |
| 48:DP:59:HIS:O    | 48:DP:62:GLY:N     | 2.54                     | 0.41              |
| 51:DS:36:ARG:CG   | 51:DS:36:ARG:NH1   | 2.69                     | 0.41              |
| 53:DU:50:SER:C    | 53:DU:52:VAL:H     | 2.24                     | 0.41              |
| 1:A0:42:ILE:HG23  | 1:A0:46:GLY:N      | 2.32                     | 0.40              |
| 4:A3:56:LEU:C     | 4:A3:58:ILE:N      | 2.75                     | 0.40              |
| 7:AA:5:U:C2'      | 7:AA:6:G:H5'       | 2.51                     | 0.40              |
| 7:AA:97:C:H2'     | 7:AA:98:G:H5'      | 2.02                     | 0.40              |
| 8:AB:38:A:C1'     | 11:AE:46:GLN:HG3   | 2.50                     | 0.40              |
| 8:AB:80:G:N3      | 8:AB:107:G:N2      | 2.69                     | 0.40              |
| 8:AB:118:A:H5'    | 8:AB:119:A:C8      | 2.44                     | 0.40              |
| 8:AB:120:U:H1'    | 8:AB:149:A:C8      | 2.56                     | 0.40              |
| 8:AB:165:A:H3'    | 8:AB:165:A:C8      | 2.56                     | 0.40              |
| 8:AB:260:G:C5     | 8:AB:261:G:C8      | 3.09                     | 0.40              |
| 8:AB:544:C:H3'    | 8:AB:544:C:C6      | 2.56                     | 0.40              |
| 8:AB:580:U:C5     | 8:AB:581:C:H5      | 2.38                     | 0.40              |
| 8:AB:602:A:C1'    | 8:AB:604:G:O2'     | 2.70                     | 0.40              |
| 8:AB:625:G:C2     | 8:AB:626:A:C5      | 3.09                     | 0.40              |
| 8:AB:715:A:N6     | 8:AB:716:A:C6      | 2.89                     | 0.40              |
| 8:AB:733:G:H8     | 8:AB:733:G:O5'     | 2.04                     | 0.40              |
| 8:AB:762:U:H4'    | 8:AB:763:G:C5'     | 2.50                     | 0.40              |
| 8:AB:814:C:N3     | 8:AB:815:C:C5      | 2.89                     | 0.40              |
| 8:AB:814:C:H5''   | 24:AR:88:GLY:HA3   | 2.03                     | 0.40              |
| 8:AB:951:C:C2'    | 8:AB:952:G:H5'     | 2.51                     | 0.40              |
| 8:AB:1020:A:N1    | 8:AB:1141:U:O2'    | 2.48                     | 0.40              |
| 8:AB:1452:G:O2'   | 8:AB:1453:A:OP2    | 2.35                     | 0.40              |
| 8:AB:1649:G:C2'   | 8:AB:1650:A:O5'    | 2.69                     | 0.40              |
| 8:AB:1740:G:C5    | 8:AB:1741:C:C4     | 3.09                     | 0.40              |
| 8:AB:1823:G:C6    | 8:AB:1824:G:C5     | 3.08                     | 0.40              |
| 8:AB:1924:C:C2'   | 8:AB:1925:C:H5'    | 2.52                     | 0.40              |
| 8:AB:1957:C:O5'   | 8:AB:1957:C:H6     | 2.04                     | 0.40              |
| 8:AB:2021:C:H3'   | 8:AB:2022:U:C5'    | 2.51                     | 0.40              |
| 8:AB:2046:G:C2    | 8:AB:2623:G:N3     | 2.88                     | 0.40              |
| 8:AB:2048:G:H8    | 8:AB:2048:G:O5'    | 2.04                     | 0.40              |
| 8:AB:2065:C:O2'   | 8:AB:2449:U:N3     | 2.53                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:2077:A:C4     | 8:AB:2435:A:N7     | 2.88                     | 0.40              |
| 8:AB:2086:U:N3     | 8:AB:2234:G:O6     | 2.54                     | 0.40              |
| 8:AB:2204:G:O6     | 8:AB:2221:G:C5     | 2.74                     | 0.40              |
| 8:AB:2332:C:H2'    | 8:AB:2335:A:N3     | 2.36                     | 0.40              |
| 8:AB:2517:C:C4     | 8:AB:2542:A:C5     | 3.09                     | 0.40              |
| 8:AB:2519:U:H2'    | 8:AB:2541:A:H61    | 1.85                     | 0.40              |
| 8:AB:2524:G:H21    | 8:AB:2525:G:H1'    | 1.85                     | 0.40              |
| 8:AB:2625:G:C5     | 8:AB:2626:C:C4     | 3.09                     | 0.40              |
| 8:AB:2642:G:C2     | 8:AB:2643:G:C4     | 3.10                     | 0.40              |
| 8:AB:2688:G:N7     | 8:AB:2719:G:C6     | 2.88                     | 0.40              |
| 8:AB:2697:G:C6     | 8:AB:2711:A:C6     | 3.09                     | 0.40              |
| 8:AB:2807:U:O2     | 8:AB:2892:G:C2     | 2.73                     | 0.40              |
| 8:AB:2819:G:C2'    | 8:AB:2820:A:H5'    | 2.51                     | 0.40              |
| 9:AC:35:LYS:O      | 9:AC:63:ILE:HA     | 2.21                     | 0.40              |
| 9:AC:181:ARG:O     | 9:AC:181:ARG:HG3   | 2.20                     | 0.40              |
| 9:AC:257:ARG:NH2   | 9:AC:259:ASN:O     | 2.54                     | 0.40              |
| 10:AD:159:LYS:O    | 10:AD:160:LYS:C    | 2.59                     | 0.40              |
| 11:AE:89:PRO:O     | 11:AE:90:GLN:CG    | 2.69                     | 0.40              |
| 11:AE:149:ILE:HG21 | 11:AE:183:PHE:CE2  | 2.56                     | 0.40              |
| 11:AE:181:ILE:O    | 18:AL:13:LYS:HB3   | 2.21                     | 0.40              |
| 12:AF:72:SER:O     | 12:AF:74:ALA:N     | 2.54                     | 0.40              |
| 12:AF:149:ARG:O    | 12:AF:150:GLY:O    | 2.39                     | 0.40              |
| 14:AH:68:ARG:C     | 14:AH:70:GLU:N     | 2.73                     | 0.40              |
| 17:AK:73:ASP:OD2   | 22:AP:80:VAL:HG11  | 2.21                     | 0.40              |
| 17:AK:108:ARG:HH11 | 17:AK:108:ARG:CG   | 2.00                     | 0.40              |
| 19:AM:3:GLN:HE21   | 19:AM:3:GLN:HB2    | 1.66                     | 0.40              |
| 19:AM:69:PRO:C     | 19:AM:71:LYS:HE3   | 2.42                     | 0.40              |
| 19:AM:77:PRO:O     | 19:AM:78:LEU:CG    | 2.70                     | 0.40              |
| 19:AM:110:GLU:HA   | 19:AM:126:ILE:HG21 | 2.02                     | 0.40              |
| 20:AN:19:ALA:O     | 20:AN:22:ARG:HB3   | 2.20                     | 0.40              |
| 20:AN:90:ARG:HD3   | 20:AN:90:ARG:HA    | 1.71                     | 0.40              |
| 20:AN:110:MET:O    | 20:AN:111:ALA:C    | 2.60                     | 0.40              |
| 24:AR:98:ILE:CG2   | 24:AR:100:GLY:H    | 2.25                     | 0.40              |
| 27:AU:26:ASN:HB3   | 27:AU:34:ILE:CG1   | 2.51                     | 0.40              |
| 29:AW:36:ILE:C     | 29:AW:37:VAL:HG22  | 2.42                     | 0.40              |
| 31:AY:38:GLU:O     | 31:AY:40:THR:HG22  | 2.20                     | 0.40              |
| 32:AZ:63:ARG:HD2   | 32:AZ:63:ARG:HA    | 1.86                     | 0.40              |
| 33:BA:27:G:C6      | 33:BA:28:A:C6      | 3.09                     | 0.40              |
| 33:BA:160:A:O4'    | 33:BA:344:A:C5     | 2.74                     | 0.40              |
| 33:BA:183:C:H6     | 33:BA:183:C:H2'    | 1.58                     | 0.40              |
| 33:BA:230:G:C2'    | 33:BA:231:U:H5'    | 2.50                     | 0.40              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 33:BA:265:G:H2'  | 33:BA:267:C:C5     | 2.56                     | 0.40              |
| 33:BA:280:C:H4'  | 33:BA:281:G:OP2    | 2.22                     | 0.40              |
| 33:BA:292:G:C5   | 33:BA:293:G:H1'    | 2.56                     | 0.40              |
| 33:BA:367:U:H5   | 33:BA:394:G:N1     | 2.20                     | 0.40              |
| 33:BA:465:A:H8   | 33:BA:466:A:C8     | 2.40                     | 0.40              |
| 33:BA:537:G:C2   | 33:BA:538:G:N7     | 2.89                     | 0.40              |
| 33:BA:539:A:H2'  | 33:BA:540:G:C8     | 2.55                     | 0.40              |
| 33:BA:649:A:C2'  | 33:BA:650:G:O5'    | 2.68                     | 0.40              |
| 33:BA:710:G:H5'' | 33:BA:711:G:OP2    | 2.20                     | 0.40              |
| 33:BA:723:U:C6   | 33:BA:723:U:OP1    | 2.74                     | 0.40              |
| 33:BA:743:A:H62  | 33:BA:744:C:N4     | 2.19                     | 0.40              |
| 33:BA:840:C:N4   | 33:BA:846:G:H1     | 2.14                     | 0.40              |
| 33:BA:904:U:O5'  | 33:BA:904:U:H6     | 2.04                     | 0.40              |
| 33:BA:944:G:C2'  | 33:BA:945:G:H5'    | 2.51                     | 0.40              |
| 33:BA:980:C:O2'  | 46:BN:12:ARG:NH1   | 2.54                     | 0.40              |
| 33:BA:1014:A:C5' | 51:BS:13:HIS:HB3   | 2.51                     | 0.40              |
| 33:BA:1021:A:H8  | 33:BA:1021:A:O5'   | 2.04                     | 0.40              |
| 33:BA:1077:G:N1  | 33:BA:1081:A:C6    | 2.90                     | 0.40              |
| 33:BA:1151:A:H1' | 33:BA:1152:A:C8    | 2.56                     | 0.40              |
| 33:BA:1155:A:H2' | 33:BA:1156:G:O4'   | 2.21                     | 0.40              |
| 33:BA:1210:C:H2' | 33:BA:1211:U:H5'   | 2.03                     | 0.40              |
| 33:BA:1354:U:O5' | 33:BA:1354:U:C6    | 2.72                     | 0.40              |
| 33:BA:1405:G:N2  | 33:BA:1517:G:N2    | 2.69                     | 0.40              |
| 33:BA:1425:U:O2  | 33:BA:1476:A:N3    | 2.53                     | 0.40              |
| 33:BA:1426:G:C5  | 33:BA:1427:C:C6    | 3.09                     | 0.40              |
| 33:BA:1473:G:C2' | 33:BA:1474:U:H5'   | 2.50                     | 0.40              |
| 33:BA:1502:A:C4  | 33:BA:1504:G:C6    | 3.09                     | 0.40              |
| 33:BA:1520:C:C3' | 33:BA:1520:C:C6    | 3.04                     | 0.40              |
| 33:BA:1523:G:OP1 | 43:BK:124:LYS:NZ   | 2.49                     | 0.40              |
| 34:BB:77:GLU:OE2 | 34:BB:80:LYS:HD3   | 2.21                     | 0.40              |
| 35:BC:33:ASP:HB2 | 46:BN:64:ARG:CD    | 2.51                     | 0.40              |
| 35:BC:141:MET:HA | 35:BC:141:MET:CE   | 2.51                     | 0.40              |
| 36:BD:124:VAL:O  | 36:BD:126:GLY:N    | 2.53                     | 0.40              |
| 37:BE:49:TYR:HD1 | 37:BE:50:GLY:N     | 2.18                     | 0.40              |
| 37:BE:51:LYS:O   | 37:BE:52:ALA:CB    | 2.69                     | 0.40              |
| 37:BE:74:ALA:HB1 | 37:BE:148:SER:CB   | 2.39                     | 0.40              |
| 38:BF:18:VAL:O   | 38:BF:22:ILE:HG13  | 2.21                     | 0.40              |
| 38:BF:47:LEU:HG  | 38:BF:56:LYS:CA    | 2.51                     | 0.40              |
| 39:BG:51:GLN:HG3 | 39:BG:52:ARG:HH11  | 1.86                     | 0.40              |
| 40:BH:112:ASP:C  | 40:BH:114:ALA:N    | 2.74                     | 0.40              |
| 41:BI:10:ARG:HG3 | 41:BI:105:ARG:HH21 | 1.86                     | 0.40              |

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| Atom-1          | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 46:BN:74:ARG:C  | 46:BN:76:PHE:N    | 2.74                     | 0.40              |
| 48:BP:71:VAL:O  | 48:BP:75:ILE:HG13 | 2.22                     | 0.40              |
| 8:CB:51:G:C2    | 8:CB:119:A:C2     | 3.08                     | 0.40              |
| 8:CB:108:G:C6   | 8:CB:109:C:C4     | 3.09                     | 0.40              |
| 8:CB:127:A:OP1  | 8:CB:128:C:C1'    | 2.68                     | 0.40              |
| 8:CB:226:A:N6   | 8:CB:227:A:N6     | 2.69                     | 0.40              |
| 8:CB:282:A:C2   | 8:CB:359:G:C4     | 3.09                     | 0.40              |
| 8:CB:663:G:N2   | 8:CB:939:G:H4'    | 2.36                     | 0.40              |
| 8:CB:735:A:C4   | 8:CB:736:C:C6     | 3.09                     | 0.40              |
| 8:CB:836:G:N7   | 8:CB:837:C:C5     | 2.89                     | 0.40              |
| 8:CB:842:U:H2'  | 8:CB:843:G:O4'    | 2.20                     | 0.40              |
| 8:CB:873:C:C2'  | 8:CB:874:G:O5'    | 2.69                     | 0.40              |
| 8:CB:945:A:N3   | 8:CB:2448:A:N3    | 2.69                     | 0.40              |
| 8:CB:1215:G:H2' | 8:CB:1216:G:H5''  | 2.03                     | 0.40              |
| 8:CB:1227:G:C4  | 8:CB:1228:G:C8    | 3.09                     | 0.40              |
| 8:CB:1233:C:H2' | 8:CB:1234:U:C5    | 2.57                     | 0.40              |
| 8:CB:1263:U:N3  | 8:CB:1264:A:C2    | 2.89                     | 0.40              |
| 8:CB:1309:G:C8  | 8:CB:1309:G:C5'   | 3.00                     | 0.40              |
| 8:CB:1372:U:C2  | 8:CB:1373:A:C8    | 3.09                     | 0.40              |
| 8:CB:1387:A:H5' | 8:CB:1469:A:H1'   | 2.03                     | 0.40              |
| 8:CB:1483:G:H3' | 8:CB:1484:U:C6    | 2.57                     | 0.40              |
| 8:CB:1650:A:N1  | 8:CB:2007:U:O4    | 2.54                     | 0.40              |
| 8:CB:1658:C:OP1 | 10:CD:136:ASN:ND2 | 2.54                     | 0.40              |
| 8:CB:1760:C:C6  | 8:CB:1761:C:C6    | 3.09                     | 0.40              |
| 8:CB:1789:A:H2' | 8:CB:1790:C:H5'   | 2.03                     | 0.40              |
| 8:CB:1813:G:N3  | 9:CC:50:THR:CG2   | 2.76                     | 0.40              |
| 8:CB:1835:G:C6  | 8:CB:1836:C:N4    | 2.89                     | 0.40              |
| 8:CB:1912:A:N1  | 33:DA:1407:C:C2'  | 2.84                     | 0.40              |
| 8:CB:2063:C:O2  | 8:CB:2450:A:N1    | 2.54                     | 0.40              |
| 8:CB:2093:G:N2  | 8:CB:2197:U:C2    | 2.89                     | 0.40              |
| 8:CB:2100:G:H2' | 8:CB:2100:G:N3    | 2.36                     | 0.40              |
| 8:CB:2247:A:P   | 55:CB:5390:HOH:O  | 2.79                     | 0.40              |
| 8:CB:2262:U:O2' | 8:CB:2263:C:H5'   | 2.22                     | 0.40              |
| 8:CB:2268:A:C8  | 8:CB:2268:A:C3'   | 3.04                     | 0.40              |
| 8:CB:2352:A:C4  | 8:CB:2366:A:C2    | 3.08                     | 0.40              |
| 8:CB:2356:U:C2' | 8:CB:2357:G:O5'   | 2.69                     | 0.40              |
| 8:CB:2515:C:H2' | 8:CB:2516:A:O5'   | 2.21                     | 0.40              |
| 8:CB:2595:G:H1  | 9:CC:237:ARG:NH2  | 2.18                     | 0.40              |
| 8:CB:2644:G:N7  | 8:CB:2645:G:C6    | 2.89                     | 0.40              |
| 8:CB:2800:A:H2' | 8:CB:2801:G:H1'   | 2.02                     | 0.40              |
| 9:CC:62:ARG:O   | 9:CC:63:ILE:HG12  | 2.21                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:CC:115:ILE:HG22  | 9:CC:127:ASN:CG    | 2.41                     | 0.40              |
| 9:CC:155:ARG:C     | 9:CC:157:ALA:N     | 2.74                     | 0.40              |
| 10:CD:3:GLY:HA3    | 10:CD:28:GLU:OE1   | 2.21                     | 0.40              |
| 11:CE:46:GLN:OE1   | 11:CE:86:ALA:CB    | 2.68                     | 0.40              |
| 12:CF:41:GLU:C     | 12:CF:43:ILE:H     | 2.25                     | 0.40              |
| 12:CF:46:LYS:HB3   | 12:CF:47:LYS:H     | 1.59                     | 0.40              |
| 14:CH:135:HIS:CD2  | 14:CH:137:GLU:H    | 2.39                     | 0.40              |
| 16:CJ:28:LEU:O     | 16:CJ:28:LEU:HD22  | 2.20                     | 0.40              |
| 16:CJ:102:GLU:HG3  | 16:CJ:124:VAL:HG21 | 2.02                     | 0.40              |
| 16:CJ:123:LYS:N    | 16:CJ:123:LYS:CD   | 2.84                     | 0.40              |
| 17:CK:5:GLN:O      | 17:CK:6:THR:HB     | 2.22                     | 0.40              |
| 17:CK:12:ASP:CB    | 17:CK:85:VAL:HG22  | 2.50                     | 0.40              |
| 21:CO:30:ARG:NH2   | 21:CO:97:PHE:HB2   | 2.32                     | 0.40              |
| 24:CR:3:ALA:O      | 24:CR:4:VAL:CG1    | 2.60                     | 0.40              |
| 24:CR:80:ARG:HB2   | 24:CR:86:GLN:H     | 1.86                     | 0.40              |
| 25:CS:40:ASN:O     | 25:CS:41:LYS:HB3   | 2.21                     | 0.40              |
| 26:CT:5:GLU:O      | 26:CT:6:ARG:C      | 2.59                     | 0.40              |
| 29:CW:27:GLY:O     | 29:CW:28:GLU:CB    | 2.69                     | 0.40              |
| 32:CZ:50:ASP:HA    | 32:CZ:53:THR:CG2   | 2.46                     | 0.40              |
| 33:DA:44:A:C4      | 33:DA:399:G:N2     | 2.89                     | 0.40              |
| 33:DA:78:A:C8      | 33:DA:78:A:H3'     | 2.56                     | 0.40              |
| 33:DA:120:A:H2'    | 33:DA:121:U:H5''   | 2.02                     | 0.40              |
| 33:DA:139:A:H2'    | 33:DA:140:U:O4'    | 2.21                     | 0.40              |
| 33:DA:320:A:H2'    | 33:DA:321:A:C8     | 2.55                     | 0.40              |
| 33:DA:403:C:C6     | 33:DA:403:C:C3'    | 3.04                     | 0.40              |
| 33:DA:433:G:H2'    | 33:DA:434:U:O4'    | 2.21                     | 0.40              |
| 33:DA:487:A:H2'    | 33:DA:488:C:O4'    | 2.20                     | 0.40              |
| 33:DA:673:A:O5'    | 33:DA:673:A:C8     | 2.63                     | 0.40              |
| 33:DA:821:G:O2'    | 33:DA:822:U:H5'    | 2.20                     | 0.40              |
| 33:DA:889:A:N3     | 33:DA:891:U:C4     | 2.89                     | 0.40              |
| 33:DA:909:A:H2'    | 33:DA:910:C:C5'    | 2.51                     | 0.40              |
| 33:DA:988:G:C2     | 33:DA:989:U:C6     | 3.09                     | 0.40              |
| 33:DA:1111:A:N1    | 35:DC:176:THR:HB   | 2.37                     | 0.40              |
| 33:DA:1237:C:H5'   | 33:DA:1303:C:O2    | 2.21                     | 0.40              |
| 33:DA:1331:G:H8    | 33:DA:1331:G:OP2   | 2.04                     | 0.40              |
| 33:DA:1345:U:C6    | 33:DA:1377:A:N1    | 2.89                     | 0.40              |
| 33:DA:1413:A:C2    | 33:DA:1414:U:N1    | 2.90                     | 0.40              |
| 33:DA:1443:C:H6    | 33:DA:1443:C:O5'   | 2.04                     | 0.40              |
| 34:DB:70:GLY:HA3   | 34:DB:79:VAL:HG11  | 2.03                     | 0.40              |
| 35:DC:150:VAL:HG23 | 35:DC:166:TRP:O    | 2.21                     | 0.40              |
| 35:DC:155:ARG:NE   | 35:DC:159:ALA:O    | 2.54                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DD:11:SER:HB3  | 36:DD:18:LEU:HD23  | 2.03                     | 0.40              |
| 36:DD:84:ASN:HD21 | 36:DD:87:GLU:N     | 2.13                     | 0.40              |
| 39:DG:11:ILE:HG22 | 39:DG:12:LEU:N     | 2.36                     | 0.40              |
| 39:DG:13:PRO:O    | 39:DG:14:ASP:C     | 2.59                     | 0.40              |
| 40:DH:116:ARG:O   | 40:DH:118:ALA:N    | 2.55                     | 0.40              |
| 41:DI:123:ARG:HG2 | 41:DI:123:ARG:HH11 | 1.85                     | 0.40              |
| 42:DJ:29:ALA:HA   | 42:DJ:32:THR:CG2   | 2.51                     | 0.40              |
| 43:DK:69:CYS:O    | 43:DK:72:ALA:N     | 2.45                     | 0.40              |
| 44:DL:80:LEU:HB3  | 44:DL:97:VAL:HG11  | 2.02                     | 0.40              |
| 47:DO:44:GLU:O    | 47:DO:45:HIS:HB2   | 2.21                     | 0.40              |
| 50:DR:59:LYS:O    | 50:DR:62:ARG:HB2   | 2.21                     | 0.40              |
| 3:A2:21:ARG:NH2   | 8:AB:466:A:C5'     | 2.81                     | 0.40              |
| 7:AA:58:A:N7      | 7:AA:59:A:N7       | 2.70                     | 0.40              |
| 8:AB:85:G:C8      | 8:AB:98:G:N2       | 2.89                     | 0.40              |
| 8:AB:108:G:C2     | 8:AB:109:C:C2      | 3.09                     | 0.40              |
| 8:AB:152:A:C2     | 8:AB:175:G:C2      | 3.09                     | 0.40              |
| 8:AB:222:A:H62    | 8:AB:231:A:H2      | 1.69                     | 0.40              |
| 8:AB:229:C:H5'    | 55:AB:4275:HOH:O   | 2.21                     | 0.40              |
| 8:AB:260:G:C8     | 8:AB:260:G:C3'     | 3.04                     | 0.40              |
| 8:AB:274:C:H2'    | 8:AB:275:C:O4'     | 2.22                     | 0.40              |
| 8:AB:282:A:N1     | 8:AB:358:U:O2      | 2.54                     | 0.40              |
| 8:AB:312:G:O2'    | 8:AB:313:G:C5'     | 2.70                     | 0.40              |
| 8:AB:381:G:H2'    | 8:AB:382:A:C5'     | 2.50                     | 0.40              |
| 8:AB:469:G:OP2    | 11:AE:55:SER:HB3   | 2.22                     | 0.40              |
| 8:AB:556:A:C5     | 8:AB:557:C:C2      | 3.08                     | 0.40              |
| 8:AB:626:A:N3     | 18:AL:79:LEU:HD22  | 2.36                     | 0.40              |
| 8:AB:661:A:O2'    | 18:AL:23:ILE:HA    | 2.21                     | 0.40              |
| 8:AB:679:C:N3     | 8:AB:680:C:C5      | 2.89                     | 0.40              |
| 8:AB:752:A:C3'    | 8:AB:753:A:H5'     | 2.52                     | 0.40              |
| 8:AB:938:G:H2'    | 8:AB:939:G:C8      | 2.57                     | 0.40              |
| 8:AB:993:G:H1     | 8:AB:994:C:H41     | 1.67                     | 0.40              |
| 8:AB:999:U:H5     | 8:AB:1154:G:N7     | 2.18                     | 0.40              |
| 8:AB:1039:A:H2    | 8:AB:1117:C:O2     | 2.04                     | 0.40              |
| 8:AB:1071:G:C6    | 8:AB:1072:C:C4     | 3.09                     | 0.40              |
| 8:AB:1080:A:H1'   | 15:AI:126:ARG:O    | 2.22                     | 0.40              |
| 8:AB:1213:A:C4    | 8:AB:1214:A:C8     | 3.09                     | 0.40              |
| 8:AB:1274:A:N7    | 8:AB:1646:C:C4     | 2.90                     | 0.40              |
| 8:AB:1327:A:N3    | 8:AB:1327:A:H2'    | 2.36                     | 0.40              |
| 8:AB:1408:G:C6    | 8:AB:1595:C:O2     | 2.73                     | 0.40              |
| 8:AB:1567:G:H21   | 9:AC:30:ALA:CB     | 2.26                     | 0.40              |
| 8:AB:1629:U:O2    | 8:AB:1629:U:H2'    | 2.21                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AB:1677:A:N1     | 8:AB:1678:A:C4     | 2.89                     | 0.40              |
| 8:AB:1829:A:C8     | 8:AB:1830:C:C6     | 3.10                     | 0.40              |
| 8:AB:2097:A:C2'    | 8:AB:2098:U:H5'    | 2.50                     | 0.40              |
| 8:AB:2235:G:H8     | 8:AB:2235:G:O5'    | 2.03                     | 0.40              |
| 8:AB:2258:C:H6     | 8:AB:2258:C:H5'    | 1.83                     | 0.40              |
| 8:AB:2412:A:C8     | 8:AB:2413:G:C8     | 3.10                     | 0.40              |
| 8:AB:2511:U:O2     | 10:AD:146:ILE:HG13 | 2.20                     | 0.40              |
| 8:AB:2571:U:C2     | 8:AB:2574:G:C8     | 3.09                     | 0.40              |
| 8:AB:2710:C:C2'    | 8:AB:2711:A:H5'    | 2.51                     | 0.40              |
| 8:AB:2841:C:C2     | 8:AB:2877:G:C2     | 3.10                     | 0.40              |
| 9:AC:90:ILE:HD13   | 9:AC:102:TYR:CE2   | 2.57                     | 0.40              |
| 9:AC:152:GLN:HB3   | 9:AC:153:LEU:H     | 1.50                     | 0.40              |
| 10:AD:13:ARG:HA    | 10:AD:13:ARG:CZ    | 2.52                     | 0.40              |
| 10:AD:87:GLY:HA2   | 10:AD:91:THR:HG21  | 2.03                     | 0.40              |
| 10:AD:184:ARG:O    | 10:AD:185:ASN:HB2  | 2.21                     | 0.40              |
| 11:AE:96:VAL:HG22  | 11:AE:97:ASN:O     | 2.21                     | 0.40              |
| 11:AE:122:GLU:H    | 11:AE:122:GLU:HG2  | 1.51                     | 0.40              |
| 11:AE:148:ILE:HG13 | 11:AE:148:ILE:O    | 2.21                     | 0.40              |
| 12:AF:72:SER:O     | 12:AF:73:VAL:C     | 2.59                     | 0.40              |
| 12:AF:83:PRO:HB2   | 12:AF:84:ILE:H     | 1.60                     | 0.40              |
| 12:AF:169:LEU:HD23 | 12:AF:169:LEU:HA   | 1.81                     | 0.40              |
| 13:AG:91:VAL:C     | 13:AG:93:TYR:H     | 2.19                     | 0.40              |
| 16:AJ:58:ASN:HA    | 16:AJ:126:ALA:CA   | 2.51                     | 0.40              |
| 16:AJ:84:ILE:HG22  | 16:AJ:86:GLN:OE1   | 2.22                     | 0.40              |
| 17:AK:22:ILE:O     | 17:AK:22:ILE:HG13  | 2.15                     | 0.40              |
| 20:AN:5:LYS:O      | 20:AN:6:SER:OG     | 2.38                     | 0.40              |
| 21:AO:33:ARG:O     | 21:AO:34:HIS:CG    | 2.73                     | 0.40              |
| 22:AP:52:ARG:HH11  | 22:AP:54:LEU:HD13  | 1.87                     | 0.40              |
| 22:AP:73:PHE:CE2   | 22:AP:75:THR:CG2   | 2.90                     | 0.40              |
| 25:AS:40:ASN:O     | 25:AS:41:LYS:HB3   | 2.21                     | 0.40              |
| 26:AT:48:GLN:HB2   | 26:AT:53:VAL:O     | 2.22                     | 0.40              |
| 31:AY:40:THR:CG2   | 31:AY:42:ALA:HB3   | 2.52                     | 0.40              |
| 31:AY:43:ILE:CD1   | 31:AY:47:ILE:HD11  | 2.52                     | 0.40              |
| 32:AZ:41:HIS:HA    | 32:AZ:42:PRO:HD3   | 1.91                     | 0.40              |
| 33:BA:66:A:O4'     | 33:BA:173:U:C4     | 2.74                     | 0.40              |
| 33:BA:110:C:OP2    | 55:BA:5038:HOH:O   | 2.22                     | 0.40              |
| 33:BA:137:U:C2'    | 33:BA:138:G:H8     | 2.20                     | 0.40              |
| 33:BA:158:G:C6     | 33:BA:164:G:C5     | 3.09                     | 0.40              |
| 33:BA:158:G:C6     | 33:BA:164:G:C4     | 3.09                     | 0.40              |
| 33:BA:171:A:O2'    | 33:BA:172:A:H5'    | 2.21                     | 0.40              |
| 33:BA:216:U:C2     | 33:BA:217:C:C5     | 3.09                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:BA:233:C:O2'   | 33:BA:264:C:N3    | 2.54                     | 0.40              |
| 33:BA:283:U:H2'   | 33:BA:284:C:C6    | 2.55                     | 0.40              |
| 33:BA:683:G:H8    | 33:BA:683:G:C5'   | 2.20                     | 0.40              |
| 33:BA:714:G:C2    | 33:BA:777:A:H1'   | 2.56                     | 0.40              |
| 33:BA:718:A:C5    | 43:BK:117:HIS:NE2 | 2.89                     | 0.40              |
| 33:BA:764:C:N4    | 33:BA:812:G:C6    | 2.90                     | 0.40              |
| 33:BA:774:G:O6    | 33:BA:775:G:C6    | 2.73                     | 0.40              |
| 33:BA:878:A:H8    | 33:BA:878:A:C3'   | 2.25                     | 0.40              |
| 33:BA:947:G:C5'   | 45:BM:106:ARG:HB3 | 2.51                     | 0.40              |
| 33:BA:1102:A:O2'  | 34:BB:97:GLY:N    | 2.54                     | 0.40              |
| 33:BA:1102:A:N6   | 33:BA:1103:C:H42  | 2.19                     | 0.40              |
| 33:BA:1126:U:C6   | 33:BA:1281:C:N3   | 2.89                     | 0.40              |
| 33:BA:1272:G:C6   | 33:BA:1273:C:C4   | 3.09                     | 0.40              |
| 33:BA:1423:G:C2'  | 33:BA:1424:U:H5'  | 2.50                     | 0.40              |
| 33:BA:1475:G:N1   | 33:BA:1476:A:C4   | 2.89                     | 0.40              |
| 33:BA:1483:A:C8   | 33:BA:1483:A:C3'  | 3.03                     | 0.40              |
| 33:BA:1511:G:N1   | 33:BA:1525:G:N2   | 2.69                     | 0.40              |
| 34:BB:17:HIS:CD2  | 34:BB:18:GLN:H    | 2.38                     | 0.40              |
| 34:BB:215:ALA:O   | 34:BB:218:ALA:HB3 | 2.21                     | 0.40              |
| 35:BC:179:ALA:HB1 | 35:BC:181:ILE:CD1 | 2.47                     | 0.40              |
| 36:BD:31:CYS:HB2  | 36:BD:32:LYS:H    | 1.67                     | 0.40              |
| 36:BD:47:LEU:HD12 | 36:BD:48:SER:O    | 2.21                     | 0.40              |
| 37:BE:64:GLU:CD   | 37:BE:64:GLU:C    | 2.80                     | 0.40              |
| 37:BE:90:GLY:O    | 37:BE:129:SER:N   | 2.54                     | 0.40              |
| 38:BF:3:HIS:H     | 38:BF:3:HIS:CD2   | 2.39                     | 0.40              |
| 40:BH:88:LYS:HB3  | 40:BH:120:LEU:N   | 2.37                     | 0.40              |
| 44:BL:35:ARG:HH21 | 44:BL:36:VAL:CG2  | 2.11                     | 0.40              |
| 46:BN:68:ARG:NH1  | 46:BN:80:ARG:NH2  | 2.69                     | 0.40              |
| 48:BP:36:VAL:HG21 | 48:BP:57:ILE:CG1  | 2.51                     | 0.40              |
| 2:C1:8:ILE:HD12   | 2:C1:27:ARG:CZ    | 2.52                     | 0.40              |
| 5:C4:1:MET:HE2    | 5:C4:2:LYS:HD3    | 2.03                     | 0.40              |
| 5:C4:28:SER:O     | 5:C4:30:GLU:HB2   | 2.21                     | 0.40              |
| 8:CB:14:A:N6      | 8:CB:526:A:C2     | 2.89                     | 0.40              |
| 8:CB:90:U:O5'     | 8:CB:91:A:H5''    | 2.20                     | 0.40              |
| 8:CB:120:U:C6     | 8:CB:149:A:C2     | 3.10                     | 0.40              |
| 8:CB:136:G:H2'    | 8:CB:137:U:H6     | 1.80                     | 0.40              |
| 8:CB:411:G:H4'    | 8:CB:412:A:H5''   | 2.02                     | 0.40              |
| 8:CB:583:G:C6     | 8:CB:584:C:C4     | 3.10                     | 0.40              |
| 8:CB:617:G:H2'    | 8:CB:618:G:C8     | 2.56                     | 0.40              |
| 8:CB:733:G:H8     | 8:CB:733:G:O5'    | 2.04                     | 0.40              |
| 8:CB:744:U:N3     | 8:CB:745:G:C4     | 2.90                     | 0.40              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 8:CB:756:A:C8    | 8:CB:756:A:C5'     | 2.91                     | 0.40              |
| 8:CB:757:G:C2'   | 8:CB:758:C:H5'     | 2.51                     | 0.40              |
| 8:CB:814:C:C2    | 8:CB:815:C:C6      | 3.10                     | 0.40              |
| 8:CB:928:A:C1'   | 31:CY:1:ALA:HA     | 2.50                     | 0.40              |
| 8:CB:987:C:H2'   | 8:CB:988:A:O4'     | 2.21                     | 0.40              |
| 8:CB:995:C:C4    | 23:CQ:56:PHE:CE2   | 3.09                     | 0.40              |
| 8:CB:1052:C:H2'  | 8:CB:1053:C:C6     | 2.56                     | 0.40              |
| 8:CB:1056:G:H5'' | 8:CB:1057:A:H8     | 1.86                     | 0.40              |
| 8:CB:1150:C:C2   | 8:CB:1151:A:N7     | 2.89                     | 0.40              |
| 8:CB:1218:G:N1   | 8:CB:1219:U:C2     | 2.89                     | 0.40              |
| 8:CB:1264:A:H2'  | 8:CB:2015:A:N6     | 2.36                     | 0.40              |
| 8:CB:1402:U:H2'  | 8:CB:1403:A:O5'    | 2.20                     | 0.40              |
| 8:CB:1653:G:C6   | 20:CN:10:LEU:CG    | 2.93                     | 0.40              |
| 8:CB:1758:U:H5'  | 8:CB:1759:A:OP2    | 2.21                     | 0.40              |
| 8:CB:1842:G:C6   | 8:CB:1843:C:N3     | 2.89                     | 0.40              |
| 8:CB:1844:C:P    | 9:CC:252:LYS:HA    | 2.61                     | 0.40              |
| 8:CB:1933:G:O2'  | 8:CB:1974:C:H4'    | 2.21                     | 0.40              |
| 8:CB:2019:A:H8   | 8:CB:2019:A:O5'    | 2.03                     | 0.40              |
| 8:CB:2048:G:C8   | 8:CB:2048:G:C4'    | 3.04                     | 0.40              |
| 8:CB:2087:G:O5'  | 8:CB:2087:G:H8     | 2.04                     | 0.40              |
| 8:CB:2095:A:N6   | 8:CB:2096:C:N4     | 2.69                     | 0.40              |
| 8:CB:2096:C:H6   | 8:CB:2096:C:H5''   | 1.86                     | 0.40              |
| 8:CB:2106:U:C6   | 8:CB:2106:U:H3'    | 2.56                     | 0.40              |
| 8:CB:2337:G:N3   | 8:CB:2337:G:C2'    | 2.76                     | 0.40              |
| 8:CB:2568:U:N3   | 8:CB:2569:G:C5     | 2.89                     | 0.40              |
| 8:CB:2717:C:C2'  | 8:CB:2718:G:O5'    | 2.70                     | 0.40              |
| 8:CB:2771:C:O2   | 8:CB:2771:C:H2'    | 2.21                     | 0.40              |
| 8:CB:2813:A:H2'  | 8:CB:2814:A:C8     | 2.57                     | 0.40              |
| 8:CB:2824:C:C4   | 8:CB:2825:G:C5     | 3.10                     | 0.40              |
| 8:CB:2837:A:C2'  | 8:CB:2838:G:H5''   | 2.52                     | 0.40              |
| 8:CB:2870:C:C2'  | 8:CB:2871:U:H5'    | 2.51                     | 0.40              |
| 9:CC:208:GLY:O   | 9:CC:212:TRP:N     | 2.54                     | 0.40              |
| 9:CC:226:PRO:HB3 | 9:CC:232:GLY:O     | 2.22                     | 0.40              |
| 9:CC:268:ARG:HB2 | 9:CC:268:ARG:NH1   | 2.36                     | 0.40              |
| 10:CD:130:GLN:N  | 10:CD:140:HIS:ND1  | 2.68                     | 0.40              |
| 11:CE:5:LEU:O    | 11:CE:6:LYS:HB2    | 2.20                     | 0.40              |
| 11:CE:40:ARG:CD  | 11:CE:40:ARG:H     | 2.34                     | 0.40              |
| 11:CE:48:THR:OG1 | 11:CE:86:ALA:HB3   | 2.21                     | 0.40              |
| 11:CE:89:PRO:HB2 | 11:CE:90:GLN:H     | 1.69                     | 0.40              |
| 11:CE:92:HIS:CD2 | 11:CE:92:HIS:N     | 2.89                     | 0.40              |
| 11:CE:110:SER:HA | 11:CE:113:VAL:HG22 | 2.03                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:CE:179:SER:O   | 11:CE:183:PHE:CD2  | 2.74                     | 0.40              |
| 12:CF:133:GLU:HB2 | 12:CF:150:GLY:HA2  | 2.02                     | 0.40              |
| 12:CF:146:ASP:O   | 12:CF:147:ARG:HB3  | 2.20                     | 0.40              |
| 17:CK:108:ARG:NH1 | 17:CK:108:ARG:CG   | 2.68                     | 0.40              |
| 17:CK:109:SER:O   | 17:CK:113:MET:SD   | 2.79                     | 0.40              |
| 19:CM:6:ARG:HB3   | 19:CM:7:THR:H      | 1.71                     | 0.40              |
| 21:CO:109:ALA:O   | 21:CO:112:GLU:N    | 2.53                     | 0.40              |
| 22:CP:29:VAL:HG13 | 22:CP:84:SER:HB3   | 2.03                     | 0.40              |
| 23:CQ:4:LYS:HB2   | 23:CQ:4:LYS:HZ2    | 1.80                     | 0.40              |
| 23:CQ:37:ALA:HA   | 23:CQ:39:ILE:CG2   | 2.49                     | 0.40              |
| 23:CQ:46:TYR:CZ   | 24:CR:89:HIS:CD2   | 3.08                     | 0.40              |
| 24:CR:67:GLY:N    | 24:CR:98:ILE:HA    | 2.33                     | 0.40              |
| 24:CR:78:ARG:N    | 24:CR:89:HIS:CE1   | 2.71                     | 0.40              |
| 26:CT:20:ALA:O    | 26:CT:22:THR:N     | 2.51                     | 0.40              |
| 27:CU:27:VAL:CB   | 27:CU:33:VAL:HA    | 2.50                     | 0.40              |
| 30:CX:18:LEU:O    | 30:CX:22:LEU:HB2   | 2.21                     | 0.40              |
| 30:CX:28:LEU:HB2  | 30:CX:42:LEU:CD1   | 2.50                     | 0.40              |
| 31:CY:54:VAL:HG13 | 31:CY:55:LYS:N     | 2.37                     | 0.40              |
| 33:DA:55:A:N1     | 33:DA:56:U:C2      | 2.89                     | 0.40              |
| 33:DA:112:G:N2    | 33:DA:330:C:N3     | 2.69                     | 0.40              |
| 33:DA:131:A:N1    | 33:DA:231:U:C2     | 2.89                     | 0.40              |
| 33:DA:432:A:C4    | 33:DA:433:G:H8     | 2.39                     | 0.40              |
| 33:DA:446:G:C6    | 33:DA:447:G:H1'    | 2.55                     | 0.40              |
| 33:DA:448:A:C6    | 33:DA:449:G:C4     | 3.09                     | 0.40              |
| 33:DA:664:G:H5'   | 33:DA:665:A:OP2    | 2.21                     | 0.40              |
| 33:DA:684:U:O4    | 33:DA:685:G:C2     | 2.73                     | 0.40              |
| 33:DA:695:A:C5    | 33:DA:696:A:C5     | 3.09                     | 0.40              |
| 33:DA:697:U:H3    | 33:DA:798:U:C1'    | 2.32                     | 0.40              |
| 33:DA:707:U:H2'   | 33:DA:708:C:H6     | 1.78                     | 0.40              |
| 33:DA:855:U:OP2   | 33:DA:871:U:C4     | 2.74                     | 0.40              |
| 33:DA:895:G:N1    | 33:DA:896:C:N3     | 2.69                     | 0.40              |
| 33:DA:998:C:O2'   | 33:DA:999:C:H5'    | 2.21                     | 0.40              |
| 33:DA:1113:C:O2   | 33:DA:1114:C:C5    | 2.74                     | 0.40              |
| 33:DA:1128:C:N3   | 33:DA:1145:A:C2    | 2.89                     | 0.40              |
| 33:DA:1221:G:C2   | 33:DA:1222:G:N9    | 2.89                     | 0.40              |
| 33:DA:1257:A:OP2  | 33:DA:1257:A:H4'   | 2.21                     | 0.40              |
| 33:DA:1299:A:N7   | 33:DA:1301:U:H1'   | 2.37                     | 0.40              |
| 33:DA:1356:G:N2   | 33:DA:1367:C:C2    | 2.89                     | 0.40              |
| 33:DA:1459:G:N1   | 33:DA:1460:C:N3    | 2.69                     | 0.40              |
| 33:DA:1502:A:C4   | 33:DA:1504:G:C6    | 3.09                     | 0.40              |
| 34:DB:72:LYS:HD2  | 34:DB:163:ILE:HD13 | 2.03                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:DB:180:ILE:HA   | 34:DB:181:PRO:HD3  | 1.82                     | 0.40              |
| 34:DB:187:ASP:OD1  | 34:DB:187:ASP:N    | 2.54                     | 0.40              |
| 35:DC:70:ALA:C     | 35:DC:105:VAL:HG22 | 2.42                     | 0.40              |
| 35:DC:117:ASP:HA   | 35:DC:120:THR:HB   | 2.02                     | 0.40              |
| 36:DD:29:THR:O     | 36:DD:30:LYS:CB    | 2.63                     | 0.40              |
| 37:DE:23:THR:O     | 37:DE:23:THR:OG1   | 2.37                     | 0.40              |
| 37:DE:61:LYS:O     | 37:DE:64:GLU:HB3   | 2.21                     | 0.40              |
| 38:DF:43:GLY:CA    | 38:DF:58:HIS:CD2   | 3.02                     | 0.40              |
| 39:DG:63:VAL:HA    | 39:DG:66:GLU:OE2   | 2.20                     | 0.40              |
| 40:DH:7:ALA:O      | 40:DH:8:ASP:C      | 2.60                     | 0.40              |
| 43:DK:113:THR:HA   | 43:DK:114:PRO:HD3  | 1.92                     | 0.40              |
| 44:DL:93:ARG:C     | 44:DL:94:TYR:CG    | 2.95                     | 0.40              |
| 44:DL:109:ARG:HH22 | 44:DL:112:ALA:H    | 1.67                     | 0.40              |
| 47:DO:77:TYR:OH    | 47:DO:87:ARG:HD2   | 2.22                     | 0.40              |
| 50:DR:19:GLU:O     | 50:DR:21:ASP:N     | 2.54                     | 0.40              |
| 50:DR:44:THR:O     | 50:DR:46:THR:N     | 2.54                     | 0.40              |
| 50:DR:44:THR:OG1   | 50:DR:46:THR:CG2   | 2.69                     | 0.40              |
| 1:A0:23:ALA:HB1    | 25:AS:35:ILE:HG13  | 2.03                     | 0.40              |
| 2:A1:9:LYS:NZ      | 4:A3:34:LYS:HZ2    | 2.19                     | 0.40              |
| 4:A3:33:THR:O      | 4:A3:35:LYS:N      | 2.54                     | 0.40              |
| 5:A4:4:ARG:HD2     | 8:AB:2465:C:OP1    | 2.21                     | 0.40              |
| 5:A4:15:LYS:HE2    | 5:A4:17:VAL:HB     | 2.03                     | 0.40              |
| 8:AB:60:G:C8       | 8:AB:63:A:C5       | 3.08                     | 0.40              |
| 8:AB:98:G:H8       | 8:AB:98:G:H5'      | 1.82                     | 0.40              |
| 8:AB:142:A:C2'     | 8:AB:143:C:H5'     | 2.51                     | 0.40              |
| 8:AB:189:G:N2      | 8:AB:208:C:N4      | 2.70                     | 0.40              |
| 8:AB:195:A:H3'     | 8:AB:196:A:C5'     | 2.51                     | 0.40              |
| 8:AB:197:A:C2'     | 8:AB:198:C:H5'     | 2.51                     | 0.40              |
| 8:AB:246:C:N4      | 8:AB:252:G:H1      | 2.20                     | 0.40              |
| 8:AB:252:G:C4      | 8:AB:253:C:C5      | 3.09                     | 0.40              |
| 8:AB:374:A:C6      | 8:AB:401:A:C8      | 3.09                     | 0.40              |
| 8:AB:379:G:N2      | 8:AB:396:G:N7      | 2.67                     | 0.40              |
| 8:AB:396:G:O2'     | 32:AZ:28:VAL:HG21  | 2.22                     | 0.40              |
| 8:AB:414:C:H3'     | 8:AB:414:C:H6      | 1.86                     | 0.40              |
| 8:AB:534:U:C4'     | 23:AQ:44:TYR:HB3   | 2.51                     | 0.40              |
| 8:AB:576:U:O4      | 8:AB:577:G:O6      | 2.39                     | 0.40              |
| 8:AB:605:G:O4'     | 8:AB:656:G:N2      | 2.54                     | 0.40              |
| 8:AB:643:A:N7      | 8:AB:644:A:C5      | 2.89                     | 0.40              |
| 8:AB:680:C:N3      | 8:AB:681:G:N7      | 2.69                     | 0.40              |
| 8:AB:748:G:C5      | 8:AB:750:A:N7      | 2.90                     | 0.40              |
| 8:AB:824:U:O4      | 8:AB:825:A:C6      | 2.74                     | 0.40              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 8:AB:849:A:H61   | 8:AB:929:U:H3      | 1.69                     | 0.40              |
| 8:AB:925:A:C6    | 8:AB:926:G:C6      | 3.09                     | 0.40              |
| 8:AB:1017:G:H2'  | 8:AB:1018:U:H6     | 1.86                     | 0.40              |
| 8:AB:1024:G:C5   | 8:AB:1025:G:N7     | 2.89                     | 0.40              |
| 8:AB:1036:G:N1   | 8:AB:1037:G:N7     | 2.69                     | 0.40              |
| 8:AB:1095:A:H2'  | 8:AB:1096:A:C8     | 2.57                     | 0.40              |
| 8:AB:1122:G:N1   | 8:AB:1123:C:C6     | 2.90                     | 0.40              |
| 8:AB:1205:A:C8   | 11:AE:164:LEU:CD1  | 2.96                     | 0.40              |
| 8:AB:1205:A:C2'  | 11:AE:164:LEU:HD13 | 2.51                     | 0.40              |
| 8:AB:1258:U:C4'  | 11:AE:79:ARG:HD3   | 2.51                     | 0.40              |
| 8:AB:1264:A:C6   | 8:AB:1265:A:C6     | 3.09                     | 0.40              |
| 8:AB:1308:A:N6   | 8:AB:1309:G:C2     | 2.89                     | 0.40              |
| 8:AB:1342:A:C6   | 8:AB:1345:C:C2     | 3.09                     | 0.40              |
| 8:AB:1379:U:C6   | 8:AB:1379:U:H5'    | 2.57                     | 0.40              |
| 8:AB:1383:A:O2'  | 8:AB:1384:A:P      | 2.80                     | 0.40              |
| 8:AB:1447:C:H2'  | 8:AB:1448:G:H8     | 1.84                     | 0.40              |
| 8:AB:1541:C:C4   | 8:AB:1542:U:C5     | 3.09                     | 0.40              |
| 8:AB:1608:A:N7   | 8:AB:1611:C:C4     | 2.89                     | 0.40              |
| 8:AB:1750:G:H2'  | 8:AB:1751:U:H5'    | 2.04                     | 0.40              |
| 8:AB:1798:U:C4   | 8:AB:1819:A:C2     | 3.09                     | 0.40              |
| 8:AB:1820:U:O2'  | 9:AC:157:ALA:CB    | 2.69                     | 0.40              |
| 8:AB:1838:C:C6   | 8:AB:1898:U:H5     | 2.39                     | 0.40              |
| 8:AB:1847:A:N6   | 8:AB:1891:G:OP2    | 2.54                     | 0.40              |
| 8:AB:1857:G:H1'  | 8:AB:1885:A:H61    | 1.86                     | 0.40              |
| 8:AB:1968:G:C8   | 8:AB:1968:G:H3'    | 2.56                     | 0.40              |
| 8:AB:2014:A:OP1  | 25:AS:95:ARG:HB2   | 2.21                     | 0.40              |
| 8:AB:2027:G:C2   | 8:AB:2028:U:C6     | 3.09                     | 0.40              |
| 8:AB:2107:G:H5'' | 8:AB:2107:G:C8     | 2.56                     | 0.40              |
| 8:AB:2253:G:H8   | 8:AB:2253:G:C5'    | 2.34                     | 0.40              |
| 8:AB:2279:G:H5'' | 8:AB:2279:G:C8     | 2.55                     | 0.40              |
| 8:AB:2300:C:O2'  | 8:AB:2301:C:H5'    | 2.21                     | 0.40              |
| 8:AB:2303:G:H2'  | 8:AB:2303:G:N3     | 2.37                     | 0.40              |
| 8:AB:2356:U:P    | 29:AW:20:LEU:HD22  | 2.61                     | 0.40              |
| 8:AB:2400:G:O6   | 8:AB:2401:U:O4     | 2.39                     | 0.40              |
| 8:AB:2526:G:C2   | 8:AB:2527:C:C5     | 3.09                     | 0.40              |
| 8:AB:2694:G:C6   | 8:AB:2695:U:O2     | 2.75                     | 0.40              |
| 8:AB:2789:C:O2   | 8:AB:2892:G:H4'    | 2.22                     | 0.40              |
| 8:AB:2816:G:C2   | 8:AB:2817:U:C5     | 3.09                     | 0.40              |
| 8:AB:2881:U:H2'  | 8:AB:2882:A:O4'    | 2.21                     | 0.40              |
| 8:AB:2885:G:N1   | 8:AB:2886:A:H8     | 2.19                     | 0.40              |
| 9:AC:25:LYS:HB3  | 9:AC:26:GLY:H      | 1.67                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AD:157:LYS:HZ1 | 10:AD:157:LYS:C    | 2.24                     | 0.40              |
| 10:AD:179:ARG:O   | 10:AD:180:VAL:HG13 | 2.22                     | 0.40              |
| 10:AD:181:ASP:HB3 | 10:AD:184:ARG:CB   | 2.45                     | 0.40              |
| 11:AE:113:VAL:C   | 11:AE:115:GLN:H    | 2.23                     | 0.40              |
| 11:AE:128:ALA:O   | 11:AE:157:LEU:HB2  | 2.21                     | 0.40              |
| 12:AF:11:VAL:O    | 12:AF:14:LYS:HB3   | 2.22                     | 0.40              |
| 12:AF:12:VAL:HG13 | 12:AF:27:VAL:HG11  | 2.03                     | 0.40              |
| 12:AF:75:GLY:O    | 12:AF:77:LYS:N     | 2.43                     | 0.40              |
| 12:AF:109:ARG:C   | 12:AF:110:ILE:HG13 | 2.41                     | 0.40              |
| 13:AG:46:ASP:CG   | 13:AG:48:THR:HG22  | 2.42                     | 0.40              |
| 13:AG:53:PRO:HA   | 13:AG:63:GLN:OE1   | 2.21                     | 0.40              |
| 14:AH:89:LYS:HE3  | 14:AH:123:ARG:CB   | 2.46                     | 0.40              |
| 16:AJ:46:PRO:HA   | 16:AJ:49:ASP:O     | 2.21                     | 0.40              |
| 18:AL:57:LEU:C    | 18:AL:59:ARG:H     | 2.20                     | 0.40              |
| 18:AL:94:THR:O    | 18:AL:100:ILE:CG1  | 2.64                     | 0.40              |
| 19:AM:26:VAL:HB   | 19:AM:27:SER:H     | 1.66                     | 0.40              |
| 19:AM:30:SER:OG   | 19:AM:103:TYR:O    | 2.36                     | 0.40              |
| 19:AM:83:GLY:O    | 19:AM:84:LYS:C     | 2.60                     | 0.40              |
| 20:AN:9:GLN:HB2   | 20:AN:17:ARG:CZ    | 2.51                     | 0.40              |
| 20:AN:44:LEU:HD23 | 20:AN:113:ILE:HD12 | 2.02                     | 0.40              |
| 20:AN:64:ARG:HD2  | 20:AN:64:ARG:HA    | 1.44                     | 0.40              |
| 23:AQ:8:ILE:O     | 23:AQ:9:ALA:O      | 2.39                     | 0.40              |
| 24:AR:26:ASP:N    | 24:AR:26:ASP:OD1   | 2.53                     | 0.40              |
| 25:AS:12:SER:O    | 25:AS:13:SER:O     | 2.39                     | 0.40              |
| 26:AT:20:ALA:O    | 26:AT:22:THR:N     | 2.52                     | 0.40              |
| 29:AW:44:PHE:O    | 29:AW:45:HIS:O     | 2.39                     | 0.40              |
| 29:AW:67:LYS:HD3  | 29:AW:67:LYS:HA    | 1.87                     | 0.40              |
| 30:AX:9:LYS:CG    | 30:AX:11:VAL:HG13  | 2.52                     | 0.40              |
| 32:AZ:3:LYS:HE3   | 32:AZ:8:LYS:O      | 2.21                     | 0.40              |
| 33:BA:27:G:C6     | 33:BA:28:A:N6      | 2.89                     | 0.40              |
| 33:BA:191:G:H5''  | 33:BA:191:G:H8     | 1.87                     | 0.40              |
| 33:BA:262:A:H4'   | 52:BT:68:LYS:HG2   | 2.04                     | 0.40              |
| 33:BA:264:C:H4'   | 49:BQ:64:ARG:HD2   | 2.03                     | 0.40              |
| 33:BA:294:U:C2    | 33:BA:295:C:C5     | 3.10                     | 0.40              |
| 33:BA:420:U:H2'   | 33:BA:422:C:C4     | 2.56                     | 0.40              |
| 33:BA:437:U:C2'   | 33:BA:438:U:C5'    | 2.96                     | 0.40              |
| 33:BA:463:U:OP2   | 33:BA:463:U:C6     | 2.71                     | 0.40              |
| 33:BA:605:U:C2'   | 33:BA:606:G:C8     | 2.98                     | 0.40              |
| 33:BA:748:G:C4    | 33:BA:749:A:N7     | 2.90                     | 0.40              |
| 33:BA:805:C:O2    | 33:BA:805:C:C2'    | 2.70                     | 0.40              |
| 33:BA:885:G:N2    | 33:BA:913:A:C6     | 2.89                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:BA:972:C:O2    | 33:BA:973:G:C8     | 2.74                     | 0.40              |
| 33:BA:1092:A:O2'  | 33:BA:1093:A:H5'   | 2.20                     | 0.40              |
| 33:BA:1136:C:H2'  | 33:BA:1138:G:O6    | 2.21                     | 0.40              |
| 33:BA:1181:G:OP2  | 33:BA:1181:G:C4'   | 2.69                     | 0.40              |
| 33:BA:1374:A:N3   | 33:BA:1374:A:H2'   | 2.36                     | 0.40              |
| 33:BA:1376:U:C5'  | 39:BG:101:ARG:NH2  | 2.85                     | 0.40              |
| 33:BA:1422:G:C2   | 33:BA:1479:C:C2    | 3.09                     | 0.40              |
| 33:BA:1439:G:C2   | 33:BA:1440:U:N1    | 2.90                     | 0.40              |
| 33:BA:1450:U:C2   | 33:BA:1452:C:N3    | 2.89                     | 0.40              |
| 34:BB:114:LYS:C   | 34:BB:116:LEU:N    | 2.73                     | 0.40              |
| 34:BB:202:ASN:C   | 34:BB:202:ASN:ND2  | 2.73                     | 0.40              |
| 35:BC:56:ILE:HG23 | 35:BC:65:VAL:HG22  | 2.03                     | 0.40              |
| 36:BD:116:LEU:CD2 | 36:BD:153:ARG:HH21 | 2.34                     | 0.40              |
| 36:BD:126:GLY:O   | 36:BD:127:ARG:CB   | 2.69                     | 0.40              |
| 36:BD:157:ALA:O   | 36:BD:160:LEU:HD22 | 2.20                     | 0.40              |
| 37:BE:61:LYS:C    | 37:BE:63:MET:H     | 2.24                     | 0.40              |
| 38:BF:2:ARG:HD3   | 38:BF:92:THR:HG22  | 2.03                     | 0.40              |
| 38:BF:4:TYR:O     | 38:BF:63:ASN:HA    | 2.21                     | 0.40              |
| 41:BI:51:LEU:HD12 | 41:BI:51:LEU:N     | 2.34                     | 0.40              |
| 41:BI:79:ARG:NH2  | 41:BI:102:PHE:HA   | 2.26                     | 0.40              |
| 41:BI:97:LEU:HD13 | 41:BI:97:LEU:HA    | 1.59                     | 0.40              |
| 42:BJ:93:ALA:HB1  | 42:BJ:96:VAL:CG2   | 2.50                     | 0.40              |
| 43:BK:52:ARG:HB3  | 43:BK:53:GLY:H     | 1.67                     | 0.40              |
| 43:BK:80:ASN:OD1  | 43:BK:105:ARG:HB3  | 2.22                     | 0.40              |
| 43:BK:126:ARG:O   | 53:BU:33:ARG:NE    | 2.53                     | 0.40              |
| 44:BL:49:ARG:CG   | 44:BL:89:LEU:HD21  | 2.51                     | 0.40              |
| 45:BM:67:ASP:O    | 45:BM:68:LEU:C     | 2.60                     | 0.40              |
| 47:BO:65:LEU:HD13 | 47:BO:65:LEU:HA    | 1.88                     | 0.40              |
| 48:BP:3:THR:OG1   | 48:BP:5:ARG:NH2    | 2.55                     | 0.40              |
| 50:BR:25:ILE:HD12 | 50:BR:66:LEU:HD13  | 2.02                     | 0.40              |
| 51:BS:51:HIS:HD2  | 51:BS:56:HIS:HE1   | 1.59                     | 0.40              |
| 3:C2:30:VAL:O     | 3:C2:33:ARG:HG3    | 2.21                     | 0.40              |
| 4:C3:44:ARG:O     | 4:C3:45:PRO:C      | 2.59                     | 0.40              |
| 7:CA:46:A:H2'     | 7:CA:47:C:O5'      | 2.21                     | 0.40              |
| 7:CA:51:G:N3      | 7:CA:51:G:C2'      | 2.81                     | 0.40              |
| 7:CA:84:G:N2      | 7:CA:93:C:O2       | 2.55                     | 0.40              |
| 8:CB:261:G:H2'    | 8:CB:262:A:C5'     | 2.52                     | 0.40              |
| 8:CB:324:A:P      | 11:CE:162:ARG:NE   | 2.94                     | 0.40              |
| 8:CB:381:G:N1     | 8:CB:382:A:C8      | 2.89                     | 0.40              |
| 8:CB:408:G:C8     | 8:CB:408:G:C3'     | 3.04                     | 0.40              |
| 8:CB:534:U:OP1    | 23:CQ:23:TYR:OH    | 2.37                     | 0.40              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 8:CB:684:G:C6    | 8:CB:774:G:C5    | 3.09                     | 0.40              |
| 8:CB:696:G:C6    | 8:CB:767:U:C2    | 3.10                     | 0.40              |
| 8:CB:783:A:H8    | 8:CB:783:A:H2'   | 1.57                     | 0.40              |
| 8:CB:978:G:N2    | 8:CB:986:C:C2    | 2.90                     | 0.40              |
| 8:CB:1195:G:C6   | 8:CB:1196:C:C5   | 3.09                     | 0.40              |
| 8:CB:1266:G:O2'  | 8:CB:1267:U:OP2  | 2.39                     | 0.40              |
| 8:CB:1273:U:O2'  | 8:CB:1275:A:OP1  | 2.36                     | 0.40              |
| 8:CB:1300:G:C1'  | 8:CB:1626:A:N1   | 2.83                     | 0.40              |
| 8:CB:1541:C:O2'  | 8:CB:1542:U:H5'  | 2.21                     | 0.40              |
| 8:CB:1590:A:N6   | 8:CB:1591:A:N6   | 2.70                     | 0.40              |
| 8:CB:1642:G:C4   | 8:CB:1643:G:C8   | 3.10                     | 0.40              |
| 8:CB:1674:G:N2   | 8:CB:1677:A:N1   | 2.70                     | 0.40              |
| 8:CB:1684:G:C6   | 8:CB:1685:C:C4   | 3.09                     | 0.40              |
| 8:CB:1718:G:H2'  | 8:CB:1719:G:H8   | 1.85                     | 0.40              |
| 8:CB:1818:U:H5'' | 9:CC:155:ARG:HB2 | 2.03                     | 0.40              |
| 8:CB:1957:C:O2'  | 8:CB:1984:G:N2   | 2.54                     | 0.40              |
| 8:CB:1959:G:C8   | 8:CB:1959:G:C3'  | 3.03                     | 0.40              |
| 8:CB:2033:A:H8   | 8:CB:2033:A:O5'  | 2.04                     | 0.40              |
| 8:CB:2233:U:C3'  | 8:CB:2233:U:C6   | 3.04                     | 0.40              |
| 8:CB:2250:G:O5'  | 8:CB:2250:G:C8   | 2.69                     | 0.40              |
| 8:CB:2276:G:HO2' | 8:CB:2277:G:H5'  | 1.85                     | 0.40              |
| 8:CB:2298:A:C2   | 8:CB:2299:U:C2   | 3.10                     | 0.40              |
| 8:CB:2403:C:C2   | 8:CB:2404:U:C5   | 3.09                     | 0.40              |
| 8:CB:2446:G:H21  | 8:CB:2501:C:N4   | 2.20                     | 0.40              |
| 8:CB:2448:A:H5'  | 8:CB:2449:U:OP2  | 2.21                     | 0.40              |
| 8:CB:2455:G:N2   | 8:CB:2498:C:H41  | 2.19                     | 0.40              |
| 8:CB:2478:A:C6   | 8:CB:2529:G:C2   | 3.09                     | 0.40              |
| 8:CB:2513:A:C6   | 8:CB:2574:G:C6   | 3.09                     | 0.40              |
| 8:CB:2524:G:H5'  | 8:CB:2764:A:H4'  | 2.04                     | 0.40              |
| 8:CB:2625:G:C5   | 8:CB:2626:C:C4   | 3.10                     | 0.40              |
| 8:CB:2635:A:C2   | 8:CB:2636:C:C1'  | 3.05                     | 0.40              |
| 8:CB:2641:G:C5'  | 8:CB:2641:G:C8   | 3.02                     | 0.40              |
| 8:CB:2719:G:C8   | 8:CB:2719:G:C5'  | 3.03                     | 0.40              |
| 8:CB:2752:C:O2'  | 8:CB:2753:A:H5'  | 2.21                     | 0.40              |
| 8:CB:2759:G:N2   | 8:CB:2760:C:C2   | 2.89                     | 0.40              |
| 8:CB:2781:A:H5'' | 8:CB:2782:G:H5'  | 2.03                     | 0.40              |
| 8:CB:2819:G:C2'  | 8:CB:2820:A:H5'  | 2.52                     | 0.40              |
| 9:CC:21:PRO:CD   | 9:CC:202:ARG:NH1 | 2.85                     | 0.40              |
| 9:CC:140:VAL:H   | 9:CC:193:GLU:CD  | 2.21                     | 0.40              |
| 9:CC:157:ALA:C   | 9:CC:197:ALA:HB2 | 2.42                     | 0.40              |
| 10:CD:15:PHE:CD1 | 10:CD:16:THR:N   | 2.89                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:CD:30:GLU:HB2   | 10:CD:31:ALA:H     | 1.41                     | 0.40              |
| 10:CD:157:LYS:O    | 16:CJ:81:ILE:HG22  | 2.21                     | 0.40              |
| 11:CE:138:LEU:HD21 | 11:CE:187:VAL:HG11 | 2.03                     | 0.40              |
| 11:CE:146:VAL:HG13 | 11:CE:147:LEU:HG   | 2.03                     | 0.40              |
| 11:CE:179:SER:O    | 11:CE:183:PHE:HD2  | 2.04                     | 0.40              |
| 12:CF:12:VAL:CG1   | 12:CF:27:VAL:HG21  | 2.49                     | 0.40              |
| 13:CG:3:VAL:HG13   | 13:CG:4:ALA:H      | 1.83                     | 0.40              |
| 13:CG:77:GLY:CA    | 13:CG:82:PHE:CE2   | 2.99                     | 0.40              |
| 13:CG:83:THR:O     | 13:CG:83:THR:CG2   | 2.69                     | 0.40              |
| 13:CG:117:PRO:O    | 13:CG:118:ALA:O    | 2.40                     | 0.40              |
| 15:CI:39:LYS:HA    | 15:CI:39:LYS:HD3   | 1.84                     | 0.40              |
| 18:CL:89:VAL:O     | 18:CL:96:LYS:CE    | 2.70                     | 0.40              |
| 19:CM:53:MET:HE2   | 19:CM:101:VAL:CG2  | 2.50                     | 0.40              |
| 20:CN:2:ARG:NE     | 20:CN:2:ARG:C      | 2.74                     | 0.40              |
| 20:CN:57:THR:O     | 20:CN:58:ASP:CG    | 2.59                     | 0.40              |
| 22:CP:50:ARG:HB2   | 22:CP:50:ARG:NH1   | 2.36                     | 0.40              |
| 22:CP:52:ARG:HH11  | 22:CP:54:LEU:HD13  | 1.87                     | 0.40              |
| 23:CQ:110:GLU:O    | 23:CQ:113:LYS:N    | 2.54                     | 0.40              |
| 24:CR:40:MET:HE3   | 24:CR:40:MET:HB2   | 1.88                     | 0.40              |
| 25:CS:71:VAL:HG22  | 25:CS:107:VAL:HG12 | 2.02                     | 0.40              |
| 26:CT:14:PRO:HA    | 26:CT:32:LEU:CA    | 2.44                     | 0.40              |
| 27:CU:85:ARG:O     | 27:CU:87:GLU:N     | 2.54                     | 0.40              |
| 28:CV:25:LYS:HA    | 28:CV:42:LEU:O     | 2.21                     | 0.40              |
| 29:CW:31:LEU:CD1   | 29:CW:39:GLN:HE21  | 2.31                     | 0.40              |
| 29:CW:76:ARG:HB3   | 29:CW:77:LYS:H     | 1.28                     | 0.40              |
| 32:CZ:12:ILE:O     | 32:CZ:13:THR:OG1   | 2.34                     | 0.40              |
| 33:DA:105:G:C4     | 33:DA:106:C:C5     | 3.09                     | 0.40              |
| 33:DA:158:G:O6     | 33:DA:164:G:N7     | 2.55                     | 0.40              |
| 33:DA:293:G:N3     | 33:DA:294:U:C6     | 2.90                     | 0.40              |
| 33:DA:462:G:N3     | 33:DA:462:G:H2'    | 2.37                     | 0.40              |
| 33:DA:474:G:O2'    | 33:DA:475:C:H5'    | 2.21                     | 0.40              |
| 33:DA:626:G:C2'    | 33:DA:627:G:O4'    | 2.67                     | 0.40              |
| 33:DA:654:G:C4     | 33:DA:655:A:C8     | 3.10                     | 0.40              |
| 33:DA:721:G:H4'    | 33:DA:722:G:H5''   | 2.03                     | 0.40              |
| 33:DA:873:A:OP1    | 33:DA:873:A:O4'    | 2.39                     | 0.40              |
| 33:DA:895:G:C6     | 33:DA:896:C:N4     | 2.89                     | 0.40              |
| 33:DA:929:G:O6     | 33:DA:930:C:C4     | 2.75                     | 0.40              |
| 33:DA:934:C:C5     | 33:DA:1344:C:H2'   | 2.50                     | 0.40              |
| 33:DA:952:U:H5''   | 33:DA:964:A:N6     | 2.36                     | 0.40              |
| 33:DA:993:G:H22    | 33:DA:996:A:N6     | 2.20                     | 0.40              |
| 33:DA:1032:G:C2    | 33:DA:1033:G:H1'   | 2.55                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:1112:C:C2'  | 33:DA:1113:C:H5'  | 2.51                     | 0.40              |
| 33:DA:1237:C:C6   | 33:DA:1237:C:O5'  | 2.74                     | 0.40              |
| 33:DA:1239:A:H2'  | 33:DA:1298:U:O4   | 2.21                     | 0.40              |
| 33:DA:1522:U:O2'  | 33:DA:1523:G:H5'  | 2.20                     | 0.40              |
| 34:DB:175:ALA:HB1 | 34:DB:180:ILE:HB  | 2.03                     | 0.40              |
| 35:DC:58:ARG:HA   | 35:DC:59:PRO:HD3  | 1.67                     | 0.40              |
| 35:DC:183:TYR:CG  | 35:DC:184:ASN:N   | 2.88                     | 0.40              |
| 36:DD:11:SER:HA   | 36:DD:18:LEU:HD23 | 2.03                     | 0.40              |
| 37:DE:66:ALA:O    | 37:DE:67:ARG:C    | 2.59                     | 0.40              |
| 37:DE:117:ALA:C   | 37:DE:119:VAL:H   | 2.24                     | 0.40              |
| 37:DE:125:LYS:HD2 | 37:DE:127:TYR:HB3 | 2.03                     | 0.40              |
| 38:DF:8:PHE:CZ    | 38:DF:60:VAL:CG2  | 3.05                     | 0.40              |
| 39:DG:25:PHE:HE2  | 39:DG:42:VAL:HG13 | 1.86                     | 0.40              |
| 39:DG:104:VAL:HA  | 39:DG:107:ALA:HB2 | 2.03                     | 0.40              |
| 40:DH:41:GLU:HG3  | 40:DH:41:GLU:H    | 1.65                     | 0.40              |
| 42:DJ:59:LYS:HG3  | 42:DJ:60:ASP:N    | 2.37                     | 0.40              |
| 43:DK:55:ARG:C    | 43:DK:57:SER:H    | 2.25                     | 0.40              |
| 45:DM:2:ARG:O     | 45:DM:3:ILE:HB    | 2.21                     | 0.40              |
| 46:DN:75:LYS:HA   | 46:DN:75:LYS:HD2  | 1.90                     | 0.40              |
| 46:DN:82:LYS:HA   | 46:DN:82:LYS:CE   | 2.51                     | 0.40              |
| 48:DP:36:VAL:HG21 | 48:DP:57:ILE:HG12 | 2.02                     | 0.40              |
| 49:DQ:10:ARG:NH2  | 49:DQ:11:VAL:HG23 | 2.36                     | 0.40              |
| 50:DR:25:ILE:HG13 | 50:DR:29:LYS:HE2  | 2.03                     | 0.40              |
| 50:DR:39:VAL:CG1  | 50:DR:40:PRO:CD   | 3.00                     | 0.40              |
| 52:DT:37:ALA:O    | 52:DT:40:ALA:O    | 2.40                     | 0.40              |
| 4:A3:32:LEU:HA    | 4:A3:32:LEU:HD22  | 1.74                     | 0.40              |
| 6:A5:156:GLN:HA   | 6:A5:159:GLU:HB2  | 2.03                     | 0.40              |
| 7:AA:79:G:HO2'    | 7:AA:80:U:H5'     | 1.86                     | 0.40              |
| 8:AB:62:U:C2'     | 8:AB:63:A:C8      | 3.00                     | 0.40              |
| 8:AB:140:C:OP2    | 8:AB:140:C:C6     | 2.73                     | 0.40              |
| 8:AB:161:A:N6     | 8:AB:162:U:C5     | 2.89                     | 0.40              |
| 8:AB:187:G:HO2'   | 8:AB:188:G:P      | 2.43                     | 0.40              |
| 8:AB:197:A:H2'    | 8:AB:198:C:H5'    | 2.03                     | 0.40              |
| 8:AB:217:A:C2     | 8:AB:218:A:C1'    | 3.04                     | 0.40              |
| 8:AB:223:A:C6     | 8:AB:422:A:C5     | 3.09                     | 0.40              |
| 8:AB:230:G:C2     | 8:AB:231:A:C4     | 3.09                     | 0.40              |
| 8:AB:297:G:O6     | 8:AB:342:A:C6     | 2.74                     | 0.40              |
| 8:AB:307:G:C8     | 8:AB:307:G:C3'    | 3.04                     | 0.40              |
| 8:AB:414:C:H1'    | 8:AB:1864:U:O2'   | 2.21                     | 0.40              |
| 8:AB:476:G:N2     | 8:AB:479:A:H8     | 2.13                     | 0.40              |
| 8:AB:491:G:H2'    | 8:AB:492:A:H8     | 1.87                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:528:A:C2     | 8:AB:2042:A:H2'    | 2.56                     | 0.40              |
| 8:AB:730:A:H3'    | 55:AB:4347:HOH:O   | 2.21                     | 0.40              |
| 8:AB:805:G:O6     | 8:AB:2068:U:H5''   | 2.21                     | 0.40              |
| 8:AB:857:G:C8     | 8:AB:858:G:C8      | 3.09                     | 0.40              |
| 8:AB:871:U:C6     | 8:AB:871:U:C3'     | 3.04                     | 0.40              |
| 8:AB:966:G:C5     | 8:AB:967:U:C2      | 3.10                     | 0.40              |
| 8:AB:976:G:H22    | 8:AB:988:A:H1'     | 1.86                     | 0.40              |
| 8:AB:989:G:O2'    | 8:AB:990:A:H5'     | 2.21                     | 0.40              |
| 8:AB:1011:G:OP1   | 23:AQ:76:SER:OG    | 2.36                     | 0.40              |
| 8:AB:1020:A:C4'   | 8:AB:1021:A:H5'    | 2.35                     | 0.40              |
| 8:AB:1174:U:H4'   | 8:AB:1176:U:O2     | 2.21                     | 0.40              |
| 8:AB:1256:G:C6    | 8:AB:1257:C:C5     | 3.09                     | 0.40              |
| 8:AB:1264:A:H2'   | 8:AB:2015:A:H61    | 1.85                     | 0.40              |
| 8:AB:1307:A:N7    | 8:AB:1308:A:N7     | 2.70                     | 0.40              |
| 8:AB:1337:G:C6    | 8:AB:1338:G:C5     | 3.09                     | 0.40              |
| 8:AB:1658:C:C4    | 8:AB:1659:G:N7     | 2.90                     | 0.40              |
| 8:AB:1959:G:N1    | 8:AB:1960:A:C2     | 2.90                     | 0.40              |
| 8:AB:2007:U:C6    | 8:AB:2007:U:C5'    | 3.05                     | 0.40              |
| 8:AB:2078:C:O4'   | 8:AB:2434:A:O4'    | 2.39                     | 0.40              |
| 8:AB:2087:G:N2    | 8:AB:2088:A:N3     | 2.69                     | 0.40              |
| 8:AB:2205:A:C5    | 8:AB:2206:C:C4     | 3.09                     | 0.40              |
| 8:AB:2231:U:OP1   | 32:AZ:27:THR:O     | 2.37                     | 0.40              |
| 8:AB:2403:C:N3    | 8:AB:2404:U:C5     | 2.90                     | 0.40              |
| 8:AB:2542:A:H2'   | 8:AB:2542:A:O5'    | 2.21                     | 0.40              |
| 8:AB:2618:G:C8    | 8:AB:2619:C:C5     | 3.09                     | 0.40              |
| 8:AB:2676:C:H2'   | 8:AB:2677:G:O4'    | 2.21                     | 0.40              |
| 8:AB:2684:U:H2'   | 8:AB:2685:G:O5'    | 2.22                     | 0.40              |
| 8:AB:2737:G:N2    | 8:AB:2768:U:C5     | 2.89                     | 0.40              |
| 8:AB:2838:G:H21   | 20:AN:93:GLY:H     | 1.69                     | 0.40              |
| 9:AC:140:VAL:HG23 | 9:AC:193:GLU:OE1   | 2.21                     | 0.40              |
| 10:AD:13:ARG:HG3  | 10:AD:23:PRO:HG3   | 2.03                     | 0.40              |
| 10:AD:148:GLN:C   | 10:AD:151:THR:HG23 | 2.42                     | 0.40              |
| 11:AE:61:ARG:NH2  | 11:AE:64:GLY:HA3   | 2.35                     | 0.40              |
| 12:AF:41:GLU:O    | 12:AF:43:ILE:N     | 2.54                     | 0.40              |
| 14:AH:68:ARG:CB   | 14:AH:138:VAL:HG21 | 2.46                     | 0.40              |
| 16:AJ:12:LYS:HD2  | 16:AJ:13:ARG:N     | 2.37                     | 0.40              |
| 16:AJ:135:GLN:C   | 16:AJ:137:PRO:HD2  | 2.41                     | 0.40              |
| 17:AK:75:SER:HA   | 22:AP:76:HIS:NE2   | 2.36                     | 0.40              |
| 18:AL:33:ARG:HG3  | 18:AL:33:ARG:H     | 1.53                     | 0.40              |
| 19:AM:18:ARG:H    | 19:AM:18:ARG:NE    | 2.19                     | 0.40              |
| 19:AM:96:ILE:HG22 | 19:AM:97:GLN:CD    | 2.41                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:AN:28:LEU:HD22  | 20:AN:113:ILE:HG21 | 2.03                     | 0.40              |
| 20:AN:38:LEU:O     | 20:AN:39:PRO:C     | 2.58                     | 0.40              |
| 20:AN:108:ALA:HA   | 20:AN:109:PRO:HD2  | 1.79                     | 0.40              |
| 22:AP:45:VAL:HG21  | 22:AP:73:PHE:CD1   | 2.56                     | 0.40              |
| 23:AQ:16:ILE:C     | 23:AQ:18:LYS:N     | 2.74                     | 0.40              |
| 27:AU:41:VAL:O     | 27:AU:41:VAL:HG22  | 2.21                     | 0.40              |
| 29:AW:31:LEU:HD22  | 29:AW:31:LEU:HA    | 1.96                     | 0.40              |
| 29:AW:72:GLY:HA2   | 29:AW:73:PRO:HD3   | 1.96                     | 0.40              |
| 32:AZ:37:CYS:SG    | 32:AZ:39:LYS:HB2   | 2.61                     | 0.40              |
| 33:BA:120:A:N6     | 33:BA:122:G:N2     | 2.69                     | 0.40              |
| 33:BA:161:A:N3     | 33:BA:162:A:C8     | 2.90                     | 0.40              |
| 33:BA:185:U:H1'    | 52:BT:75:LYS:HZ2   | 1.85                     | 0.40              |
| 33:BA:244:U:C5     | 33:BA:894:G:C2     | 3.10                     | 0.40              |
| 33:BA:289:G:N1     | 33:BA:312:C:C2     | 2.89                     | 0.40              |
| 33:BA:380:G:N2     | 33:BA:384:G:C6     | 2.90                     | 0.40              |
| 33:BA:489:C:N3     | 33:BA:490:C:C5     | 2.89                     | 0.40              |
| 33:BA:505:G:OP2    | 33:BA:534:U:O2'    | 2.40                     | 0.40              |
| 33:BA:571:U:C5'    | 33:BA:572:A:OP2    | 2.66                     | 0.40              |
| 33:BA:615:G:C5     | 33:BA:626:G:O6     | 2.75                     | 0.40              |
| 33:BA:683:G:O6     | 33:BA:708:C:N3     | 2.55                     | 0.40              |
| 33:BA:735:C:H1'    | 50:BR:63:TYR:CZ    | 2.55                     | 0.40              |
| 33:BA:1133:G:C4    | 33:BA:1134:G:C8    | 3.10                     | 0.40              |
| 33:BA:1375:A:C6    | 33:BA:1376:U:N3    | 2.90                     | 0.40              |
| 33:BA:1513:A:N3    | 33:BA:1513:A:C2'   | 2.82                     | 0.40              |
| 34:BB:18:GLN:O     | 34:BB:37:VAL:CG2   | 2.69                     | 0.40              |
| 34:BB:20:ARG:HD2   | 34:BB:38:HIS:CE1   | 2.56                     | 0.40              |
| 34:BB:98:GLY:O     | 34:BB:100:LEU:N    | 2.50                     | 0.40              |
| 35:BC:119:ILE:HD12 | 35:BC:119:ILE:HA   | 1.86                     | 0.40              |
| 35:BC:198:LYS:HB3  | 35:BC:200:TRP:CZ3  | 2.56                     | 0.40              |
| 36:BD:48:SER:CB    | 36:BD:51:GLY:H     | 2.33                     | 0.40              |
| 36:BD:78:ALA:HB1   | 36:BD:85:THR:O     | 2.21                     | 0.40              |
| 36:BD:153:ARG:HA   | 36:BD:156:ALA:CB   | 2.45                     | 0.40              |
| 36:BD:194:ILE:HD13 | 36:BD:195:ASN:N    | 2.35                     | 0.40              |
| 37:BE:148:SER:CB   | 37:BE:150:GLU:HG2  | 2.51                     | 0.40              |
| 38:BF:9:MET:HE2    | 38:BF:9:MET:HB3    | 1.64                     | 0.40              |
| 38:BF:64:VAL:CG1   | 38:BF:65:GLU:N     | 2.82                     | 0.40              |
| 39:BG:13:PRO:HB3   | 39:BG:18:GLY:HA2   | 2.03                     | 0.40              |
| 39:BG:68:VAL:HG11  | 39:BG:103:ILE:HD11 | 2.04                     | 0.40              |
| 40:BH:41:GLU:O     | 40:BH:41:GLU:CG    | 2.70                     | 0.40              |
| 40:BH:45:ILE:HG13  | 40:BH:46:GLU:N     | 2.36                     | 0.40              |
| 40:BH:111:THR:O    | 40:BH:114:ALA:HB3  | 2.21                     | 0.40              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 43:BK:13:LYS:C   | 43:BK:14:GLN:HG2 | 2.42                     | 0.40              |
| 47:BO:41:HIS:O   | 47:BO:44:GLU:O   | 2.39                     | 0.40              |
| 47:BO:44:GLU:O   | 47:BO:45:HIS:HB2 | 2.21                     | 0.40              |
| 49:BQ:34:GLY:O   | 49:BQ:35:LYS:O   | 2.40                     | 0.40              |
| 1:C0:3:GLN:N     | 1:C0:3:GLN:OE1   | 2.41                     | 0.40              |
| 1:C0:30:ASP:N    | 1:C0:30:ASP:OD1  | 2.54                     | 0.40              |
| 3:C2:10:LEU:CD1  | 8:CB:125:A:C2    | 3.05                     | 0.40              |
| 3:C2:10:LEU:HD22 | 3:C2:10:LEU:N    | 2.36                     | 0.40              |
| 3:C2:17:GLY:HA2  | 3:C2:18:PHE:CD2  | 2.56                     | 0.40              |
| 8:CB:122:G:N1    | 8:CB:130:C:C2    | 2.90                     | 0.40              |
| 8:CB:190:A:C8    | 8:CB:207:A:N1    | 2.89                     | 0.40              |
| 8:CB:221:A:C2    | 8:CB:233:A:C5    | 3.09                     | 0.40              |
| 8:CB:226:A:N6    | 8:CB:227:A:C6    | 2.89                     | 0.40              |
| 8:CB:332:A:H8    | 8:CB:332:A:H2'   | 1.75                     | 0.40              |
| 8:CB:468:G:C2'   | 8:CB:469:G:C8    | 2.98                     | 0.40              |
| 8:CB:492:A:H5'   | 8:CB:493:G:OP2   | 2.21                     | 0.40              |
| 8:CB:584:C:C5    | 8:CB:585:G:N7    | 2.89                     | 0.40              |
| 8:CB:592:A:C6    | 8:CB:593:U:O4    | 2.74                     | 0.40              |
| 8:CB:663:G:H21   | 8:CB:939:G:H4'   | 1.87                     | 0.40              |
| 8:CB:670:A:O4'   | 8:CB:671:C:H5''  | 2.21                     | 0.40              |
| 8:CB:684:G:C2    | 8:CB:774:G:N1    | 2.89                     | 0.40              |
| 8:CB:693:A:C6    | 8:CB:770:G:N1    | 2.90                     | 0.40              |
| 8:CB:727:A:H3'   | 8:CB:728:G:C8    | 2.57                     | 0.40              |
| 8:CB:744:U:C2'   | 8:CB:745:G:O5'   | 2.69                     | 0.40              |
| 8:CB:749:A:C1'   | 8:CB:1618:A:OP1  | 2.65                     | 0.40              |
| 8:CB:839:U:O2'   | 8:CB:1191:G:H1'  | 2.21                     | 0.40              |
| 8:CB:978:G:H2'   | 8:CB:979:A:H8    | 1.86                     | 0.40              |
| 8:CB:1256:G:C6   | 8:CB:1257:C:C4   | 3.09                     | 0.40              |
| 8:CB:1285:A:H3'  | 8:CB:1285:A:H8   | 1.84                     | 0.40              |
| 8:CB:1316:U:H2'  | 8:CB:1317:G:H8   | 1.87                     | 0.40              |
| 8:CB:1371:G:N2   | 8:CB:1372:U:O4   | 2.54                     | 0.40              |
| 8:CB:1380:G:C2   | 8:CB:1381:G:C8   | 3.10                     | 0.40              |
| 8:CB:1407:G:N1   | 8:CB:1596:A:C2   | 2.90                     | 0.40              |
| 8:CB:1420:A:N3   | 8:CB:2211:A:H8   | 2.20                     | 0.40              |
| 8:CB:1622:G:N1   | 8:CB:1623:G:N7   | 2.69                     | 0.40              |
| 8:CB:1626:A:HO2' | 8:CB:1627:G:P    | 2.44                     | 0.40              |
| 8:CB:1791:A:H2'  | 8:CB:1792:G:O5'  | 2.21                     | 0.40              |
| 8:CB:2019:A:C2'  | 8:CB:2020:A:O5'  | 2.66                     | 0.40              |
| 8:CB:2034:U:H5'  | 55:CB:5366:HOH:O | 2.21                     | 0.40              |
| 8:CB:2346:A:O2'  | 8:CB:2347:C:OP1  | 2.36                     | 0.40              |
| 8:CB:2352:A:C2   | 29:CW:29:SER:HB3 | 2.55                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:2453:A:OP2    | 55:CB:5425:HOH:O   | 2.21                     | 0.40              |
| 8:CB:2512:C:OP1    | 10:CD:128:ARG:CA   | 2.49                     | 0.40              |
| 8:CB:2568:U:O2     | 8:CB:2569:G:C4     | 2.74                     | 0.40              |
| 8:CB:2723:C:N3     | 8:CB:2724:U:N3     | 2.69                     | 0.40              |
| 8:CB:2807:U:O2     | 8:CB:2892:G:C2     | 2.74                     | 0.40              |
| 9:CC:155:ARG:HE    | 9:CC:155:ARG:HA    | 1.86                     | 0.40              |
| 9:CC:181:ARG:O     | 9:CC:181:ARG:HG3   | 2.21                     | 0.40              |
| 9:CC:254:LYS:HB2   | 9:CC:254:LYS:HE2   | 1.66                     | 0.40              |
| 9:CC:258:SER:N     | 9:CC:261:ARG:HD2   | 2.37                     | 0.40              |
| 9:CC:265:PHE:HB3   | 9:CC:266:ILE:H     | 1.59                     | 0.40              |
| 10:CD:101:PHE:HZ   | 10:CD:180:VAL:CG1  | 2.27                     | 0.40              |
| 10:CD:127:PHE:O    | 10:CD:128:ARG:HB3  | 2.22                     | 0.40              |
| 10:CD:136:ASN:OD1  | 10:CD:139:SER:HB3  | 2.21                     | 0.40              |
| 10:CD:148:GLN:CB   | 10:CD:151:THR:OG1  | 2.66                     | 0.40              |
| 11:CE:194:LYS:N    | 11:CE:194:LYS:CE   | 2.84                     | 0.40              |
| 12:CF:72:SER:O     | 12:CF:73:VAL:C     | 2.59                     | 0.40              |
| 12:CF:109:ARG:C    | 12:CF:110:ILE:HG13 | 2.41                     | 0.40              |
| 12:CF:133:GLU:OE1  | 12:CF:134:GLN:O    | 2.40                     | 0.40              |
| 12:CF:148:VAL:O    | 12:CF:149:ARG:C    | 2.60                     | 0.40              |
| 13:CG:138:GLN:HE21 | 13:CG:139:VAL:HA   | 1.87                     | 0.40              |
| 16:CJ:114:LEU:O    | 16:CJ:116:ARG:N    | 2.55                     | 0.40              |
| 17:CK:15:GLY:O     | 17:CK:16:ALA:O     | 2.39                     | 0.40              |
| 18:CL:36:LYS:NZ    | 55:CL:303:HOH:O    | 2.47                     | 0.40              |
| 18:CL:78:ARG:HA    | 18:CL:111:ILE:CD1  | 2.52                     | 0.40              |
| 18:CL:79:LEU:HD12  | 18:CL:113:ALA:C    | 2.42                     | 0.40              |
| 18:CL:108:ALA:HB3  | 18:CL:125:LEU:HD12 | 2.03                     | 0.40              |
| 20:CN:28:LEU:HD22  | 20:CN:113:ILE:HG21 | 2.03                     | 0.40              |
| 23:CQ:7:VAL:C      | 23:CQ:9:ALA:H      | 2.23                     | 0.40              |
| 23:CQ:29:ARG:CB    | 23:CQ:29:ARG:NH1   | 2.76                     | 0.40              |
| 23:CQ:85:ALA:O     | 23:CQ:86:SER:O     | 2.38                     | 0.40              |
| 23:CQ:88:GLU:C     | 24:CR:53:PHE:CD1   | 2.93                     | 0.40              |
| 24:CR:11:GLN:HB3   | 24:CR:21:ARG:CZ    | 2.51                     | 0.40              |
| 24:CR:40:MET:HE3   | 24:CR:54:VAL:HG13  | 2.02                     | 0.40              |
| 24:CR:86:GLN:HG2   | 24:CR:87:GLN:NE2   | 2.36                     | 0.40              |
| 29:CW:36:ILE:HG22  | 29:CW:69:GLU:OE2   | 2.18                     | 0.40              |
| 29:CW:49:ASN:C     | 29:CW:51:GLY:H     | 2.24                     | 0.40              |
| 33:DA:9:G:C4       | 33:DA:10:A:N7      | 2.89                     | 0.40              |
| 33:DA:292:G:N2     | 33:DA:309:A:C4     | 2.90                     | 0.40              |
| 33:DA:306:A:O2'    | 33:DA:307:C:O5'    | 2.32                     | 0.40              |
| 33:DA:445:G:C2     | 33:DA:446:G:C5     | 3.09                     | 0.40              |
| 33:DA:451:A:N6     | 33:DA:481:G:H5''   | 2.27                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:DA:540:G:O6    | 33:DA:541:G:C6     | 2.74                     | 0.40              |
| 33:DA:557:G:C5    | 33:DA:558:G:C6     | 3.09                     | 0.40              |
| 33:DA:614:C:C6    | 33:DA:614:C:C3'    | 3.04                     | 0.40              |
| 33:DA:614:C:O2'   | 33:DA:615:G:H5'    | 2.22                     | 0.40              |
| 33:DA:617:G:C2    | 33:DA:624:C:N3     | 2.89                     | 0.40              |
| 33:DA:704:A:H3'   | 33:DA:705:G:C5'    | 2.51                     | 0.40              |
| 33:DA:734:G:O2'   | 50:DR:59:LYS:HD3   | 2.22                     | 0.40              |
| 33:DA:742:G:C2'   | 33:DA:743:A:O5'    | 2.70                     | 0.40              |
| 33:DA:791:G:N7    | 33:DA:792:A:N7     | 2.69                     | 0.40              |
| 33:DA:846:G:H2'   | 33:DA:847:G:C8     | 2.57                     | 0.40              |
| 33:DA:897:C:N3    | 33:DA:902:G:O6     | 2.54                     | 0.40              |
| 33:DA:933:G:C2    | 33:DA:935:A:H8     | 2.40                     | 0.40              |
| 33:DA:1022:A:C6   | 33:DA:1023:U:C5    | 3.10                     | 0.40              |
| 33:DA:1187:G:C2'  | 33:DA:1188:A:C8    | 3.05                     | 0.40              |
| 33:DA:1287:A:H1'  | 33:DA:1353:G:O2'   | 2.22                     | 0.40              |
| 33:DA:1307:U:H2'  | 33:DA:1308:U:O4'   | 2.21                     | 0.40              |
| 33:DA:1513:A:C6   | 33:DA:1514:G:C5    | 3.09                     | 0.40              |
| 34:DB:107:ARG:HG3 | 34:DB:110:ILE:HD12 | 2.03                     | 0.40              |
| 34:DB:204:ASP:O   | 34:DB:205:ALA:CB   | 2.69                     | 0.40              |
| 36:DD:109:THR:O   | 36:DD:110:ARG:C    | 2.58                     | 0.40              |
| 37:DE:90:GLY:O    | 37:DE:129:SER:HB3  | 2.22                     | 0.40              |
| 38:DF:14:GLN:C    | 38:DF:16:GLU:H     | 2.25                     | 0.40              |
| 38:DF:37:HIS:O    | 38:DF:63:ASN:HB2   | 2.21                     | 0.40              |
| 40:DH:74:ILE:HG13 | 40:DH:128:VAL:CG1  | 2.48                     | 0.40              |
| 42:DJ:30:LYS:CA   | 42:DJ:36:VAL:HG21  | 2.50                     | 0.40              |
| 44:DL:7:VAL:HG12  | 44:DL:8:ARG:N      | 2.37                     | 0.40              |
| 44:DL:19:ASN:C    | 44:DL:20:VAL:HG23  | 2.42                     | 0.40              |
| 44:DL:89:LEU:HA   | 44:DL:90:PRO:HD2   | 1.71                     | 0.40              |
| 45:DM:80:MET:HA   | 45:DM:87:GLY:HA3   | 2.01                     | 0.40              |
| 45:DM:106:ARG:HD2 | 45:DM:112:ARG:NE   | 2.37                     | 0.40              |
| 46:DN:73:LEU:HD12 | 46:DN:83:VAL:HG21  | 2.02                     | 0.40              |
| 48:DP:36:VAL:HG11 | 48:DP:57:ILE:CD1   | 2.52                     | 0.40              |
| 50:DR:24:ASP:O    | 50:DR:27:THR:N     | 2.52                     | 0.40              |
| 3:A2:19:ARG:HB3   | 8:AB:126:A:OP2     | 2.20                     | 0.40              |
| 4:A3:35:LYS:O     | 4:A3:36:ALA:HB3    | 2.21                     | 0.40              |
| 8:AB:93:G:N2      | 8:AB:94:A:N3       | 2.69                     | 0.40              |
| 8:AB:272:A:H2'    | 8:AB:273:G:C8      | 2.57                     | 0.40              |
| 8:AB:283:G:C4     | 8:AB:284:U:C6      | 3.10                     | 0.40              |
| 8:AB:300:A:C8     | 8:AB:300:A:C3'     | 3.05                     | 0.40              |
| 8:AB:413:C:H4'    | 8:AB:1880:U:HO2'   | 1.86                     | 0.40              |
| 8:AB:486:C:O2     | 8:AB:495:G:N2      | 2.54                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:AB:536:G:O6     | 8:AB:557:C:C4      | 2.73                     | 0.40              |
| 8:AB:538:A:C2'    | 8:AB:539:G:H8      | 2.29                     | 0.40              |
| 8:AB:548:G:H5''   | 8:AB:549:G:N3      | 2.37                     | 0.40              |
| 8:AB:560:C:H2'    | 8:AB:561:G:O4'     | 2.22                     | 0.40              |
| 8:AB:589:U:O5'    | 8:AB:589:U:H6      | 2.04                     | 0.40              |
| 8:AB:594:U:H2'    | 8:AB:595:C:C6      | 2.56                     | 0.40              |
| 8:AB:610:C:O2'    | 8:AB:611:C:H5'     | 2.22                     | 0.40              |
| 8:AB:793:A:OP2    | 8:AB:2071:A:O2'    | 2.35                     | 0.40              |
| 8:AB:824:U:C4     | 8:AB:825:A:C5      | 3.10                     | 0.40              |
| 8:AB:856:G:C2     | 8:AB:857:G:C6      | 3.10                     | 0.40              |
| 8:AB:1000:A:C5    | 8:AB:1001:A:N7     | 2.90                     | 0.40              |
| 8:AB:1058:U:O5'   | 8:AB:1058:U:C6     | 2.75                     | 0.40              |
| 8:AB:1131:G:C5    | 16:AJ:77:HIS:CE1   | 3.09                     | 0.40              |
| 8:AB:1195:G:C4    | 8:AB:1196:C:C5     | 3.09                     | 0.40              |
| 8:AB:1203:U:H4'   | 18:AL:13:LYS:NZ    | 2.37                     | 0.40              |
| 8:AB:1232:G:H2'   | 8:AB:1233:C:C6     | 2.48                     | 0.40              |
| 8:AB:1307:A:H3'   | 8:AB:1307:A:C8     | 2.56                     | 0.40              |
| 8:AB:1454:C:C2    | 20:AN:63:ARG:HB3   | 2.56                     | 0.40              |
| 8:AB:1605:C:H1'   | 8:AB:1610:A:C5     | 2.57                     | 0.40              |
| 8:AB:1654:A:H1'   | 8:AB:2823:A:H5'    | 2.04                     | 0.40              |
| 8:AB:1672:A:H4'   | 8:AB:2554:U:OP1    | 2.21                     | 0.40              |
| 8:AB:1703:G:H2'   | 8:AB:1704:C:C6     | 2.56                     | 0.40              |
| 8:AB:1828:G:H1    | 9:AC:219:VAL:HG11  | 1.85                     | 0.40              |
| 8:AB:2078:C:C2'   | 8:AB:2079:U:H5'    | 2.51                     | 0.40              |
| 8:AB:2214:C:H5'   | 8:AB:2215:C:OP2    | 2.21                     | 0.40              |
| 8:AB:2250:G:O5'   | 8:AB:2250:G:C8     | 2.66                     | 0.40              |
| 8:AB:2313:C:H2'   | 8:AB:2314:A:H8     | 1.87                     | 0.40              |
| 8:AB:2364:C:H2'   | 8:AB:2365:G:O4'    | 2.22                     | 0.40              |
| 8:AB:2393:U:OP1   | 18:AL:62:PRO:HB3   | 2.22                     | 0.40              |
| 8:AB:2462:C:O2    | 8:AB:2462:C:H2'    | 2.21                     | 0.40              |
| 8:AB:2500:U:O2    | 8:AB:2504:U:C4     | 2.75                     | 0.40              |
| 8:AB:2618:G:C5    | 8:AB:2619:C:C4     | 3.09                     | 0.40              |
| 8:AB:2618:G:O2'   | 10:AD:155:VAL:HG12 | 2.22                     | 0.40              |
| 8:AB:2730:C:C2    | 8:AB:2731:G:C8     | 3.10                     | 0.40              |
| 8:AB:2820:A:N6    | 20:AN:4:ARG:CZ     | 2.85                     | 0.40              |
| 8:AB:2850:A:C2'   | 8:AB:2851:A:H5'    | 2.51                     | 0.40              |
| 9:AC:113:ASP:OD1  | 9:AC:113:ASP:N     | 2.54                     | 0.40              |
| 10:AD:98:VAL:CG2  | 10:AD:101:PHE:HE2  | 2.35                     | 0.40              |
| 10:AD:130:GLN:HB3 | 10:AD:131:ASP:H    | 1.75                     | 0.40              |
| 12:AF:49:LEU:CD2  | 12:AF:52:ALA:HB2   | 2.51                     | 0.40              |
| 13:AG:36:LEU:HB3  | 13:AG:37:ASN:H     | 1.52                     | 0.40              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 14:AH:75:LEU:O     | 14:AH:76:GLU:HG3  | 2.22                     | 0.40              |
| 14:AH:83:LYS:HB2   | 14:AH:91:PHE:HB3  | 2.03                     | 0.40              |
| 16:AJ:76:HIS:CD2   | 16:AJ:99:ARG:NH2  | 2.90                     | 0.40              |
| 17:AK:31:ARG:HG3   | 17:AK:31:ARG:NH1  | 2.37                     | 0.40              |
| 18:AL:78:ARG:NH1   | 18:AL:80:SER:N    | 2.69                     | 0.40              |
| 18:AL:111:ILE:HD13 | 18:AL:111:ILE:C   | 2.42                     | 0.40              |
| 19:AM:68:PHE:CD2   | 19:AM:68:PHE:N    | 2.89                     | 0.40              |
| 19:AM:110:GLU:O    | 19:AM:112:LEU:N   | 2.55                     | 0.40              |
| 19:AM:114:ARG:C    | 19:AM:116:ALA:H   | 2.24                     | 0.40              |
| 19:AM:136:MET:HG3  | 28:AV:76:ASP:OD2  | 2.21                     | 0.40              |
| 20:AN:66:ALA:HB2   | 20:AN:76:VAL:HG21 | 2.03                     | 0.40              |
| 21:AO:33:ARG:C     | 21:AO:34:HIS:CG   | 2.94                     | 0.40              |
| 21:AO:41:ALA:O     | 21:AO:42:PRO:C    | 2.60                     | 0.40              |
| 21:AO:100:HIS:O    | 21:AO:101:GLY:C   | 2.59                     | 0.40              |
| 23:AQ:35:PHE:C     | 23:AQ:37:ALA:N    | 2.67                     | 0.40              |
| 24:AR:39:LEU:HD22  | 24:AR:55:ASP:OD1  | 2.22                     | 0.40              |
| 24:AR:66:HIS:O     | 24:AR:68:ARG:N    | 2.54                     | 0.40              |
| 25:AS:65:ASP:O     | 25:AS:69:LEU:CD2  | 2.70                     | 0.40              |
| 25:AS:90:LYS:CA    | 25:AS:90:LYS:CE   | 2.95                     | 0.40              |
| 26:AT:8:LEU:HD12   | 26:AT:9:LYS:HB2   | 2.04                     | 0.40              |
| 27:AU:40:LEU:O     | 27:AU:41:VAL:C    | 2.59                     | 0.40              |
| 28:AV:11:GLU:OE1   | 28:AV:19:ARG:NH1  | 2.55                     | 0.40              |
| 28:AV:29:ILE:O     | 28:AV:91:PHE:HB2  | 2.21                     | 0.40              |
| 29:AW:50:VAL:O     | 29:AW:52:CYS:N    | 2.52                     | 0.40              |
| 33:BA:47:C:C6      | 33:BA:365:U:H2'   | 2.57                     | 0.40              |
| 33:BA:92:U:H5''    | 33:BA:92:U:C6     | 2.57                     | 0.40              |
| 33:BA:218:U:C6     | 33:BA:218:U:H3'   | 2.56                     | 0.40              |
| 33:BA:428:G:H5''   | 36:BD:9:LYS:CD    | 2.46                     | 0.40              |
| 33:BA:429:U:H4'    | 33:BA:430:A:OP1   | 2.19                     | 0.40              |
| 33:BA:460:A:N1     | 33:BA:471:U:O4    | 2.55                     | 0.40              |
| 33:BA:495:A:C2     | 33:BA:496:A:C6    | 3.10                     | 0.40              |
| 33:BA:506:G:C5     | 33:BA:507:C:C5    | 3.10                     | 0.40              |
| 33:BA:521:G:C6     | 33:BA:522:C:C5    | 3.09                     | 0.40              |
| 33:BA:615:G:C2     | 33:BA:616:G:C8    | 3.10                     | 0.40              |
| 33:BA:679:C:H2'    | 33:BA:680:C:H6    | 1.86                     | 0.40              |
| 33:BA:704:A:C2     | 33:BA:705:G:N9    | 2.89                     | 0.40              |
| 33:BA:1004:A:H2    | 33:BA:1026:G:C4   | 2.39                     | 0.40              |
| 33:BA:1051:C:C4    | 33:BA:1052:U:C5   | 3.10                     | 0.40              |
| 33:BA:1155:A:C8    | 33:BA:1155:A:H5'  | 2.57                     | 0.40              |
| 33:BA:1157:A:H2'   | 33:BA:1157:A:O5'  | 2.22                     | 0.40              |
| 33:BA:1195:C:H3'   | 33:BA:1196:A:H5'' | 2.04                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BA:1207:G:C6    | 33:BA:1208:C:C4    | 3.09                     | 0.40              |
| 33:BA:1221:G:H5'   | 51:BS:35:ARG:CZ    | 2.52                     | 0.40              |
| 33:BA:1259:C:H5''  | 33:BA:1260:G:OP2   | 2.21                     | 0.40              |
| 33:BA:1303:C:O2    | 33:BA:1303:C:H2'   | 2.21                     | 0.40              |
| 33:BA:1320:C:C2    | 33:BA:1321:U:C6    | 3.10                     | 0.40              |
| 33:BA:1336:C:H5'   | 33:BA:1337:G:N2    | 2.36                     | 0.40              |
| 33:BA:1360:A:H61   | 33:BA:1361:G:H21   | 1.69                     | 0.40              |
| 33:BA:1391:U:O2'   | 33:BA:1392:G:H8    | 2.02                     | 0.40              |
| 33:BA:1397:C:O2'   | 33:BA:1398:A:P     | 2.79                     | 0.40              |
| 33:BA:1508:A:H2'   | 33:BA:1509:C:H6    | 1.87                     | 0.40              |
| 34:BB:14:HIS:O     | 34:BB:14:HIS:CG    | 2.73                     | 0.40              |
| 34:BB:30:ILE:CD1   | 34:BB:188:THR:HG21 | 2.46                     | 0.40              |
| 34:BB:42:LEU:H     | 34:BB:42:LEU:HG    | 1.71                     | 0.40              |
| 34:BB:149:GLY:O    | 34:BB:150:ILE:HB   | 2.21                     | 0.40              |
| 36:BD:137:SER:O    | 36:BD:140:ASP:HB2  | 2.21                     | 0.40              |
| 37:BE:19:ARG:O     | 37:BE:20:VAL:C     | 2.60                     | 0.40              |
| 37:BE:52:ALA:N     | 37:BE:58:ALA:HB2   | 2.36                     | 0.40              |
| 37:BE:131:ASN:O    | 37:BE:135:VAL:HG13 | 2.22                     | 0.40              |
| 38:BF:51:ILE:C     | 38:BF:53:LYS:N     | 2.75                     | 0.40              |
| 39:BG:16:LYS:CB    | 39:BG:43:TYR:OH    | 2.70                     | 0.40              |
| 39:BG:67:ASN:N     | 39:BG:67:ASN:ND2   | 2.67                     | 0.40              |
| 39:BG:123:LEU:HD13 | 39:BG:123:LEU:HA   | 1.78                     | 0.40              |
| 44:BL:76:HIS:O     | 44:BL:77:SER:C     | 2.59                     | 0.40              |
| 46:BN:32:ASP:O     | 46:BN:34:ASN:N     | 2.50                     | 0.40              |
| 3:C2:39:ARG:CB     | 8:CB:458:G:H5''    | 2.52                     | 0.40              |
| 5:C4:16:ILE:HG23   | 5:C4:17:VAL:H      | 1.87                     | 0.40              |
| 7:CA:5:U:C4        | 7:CA:6:G:N7        | 2.90                     | 0.40              |
| 7:CA:52:A:C6       | 7:CA:53:A:N3       | 2.89                     | 0.40              |
| 8:CB:114:U:C6      | 8:CB:114:U:C3'     | 3.05                     | 0.40              |
| 8:CB:275:C:N4      | 8:CB:276:U:C5      | 2.89                     | 0.40              |
| 8:CB:334:C:OP2     | 8:CB:335:C:N4      | 2.55                     | 0.40              |
| 8:CB:338:G:H8      | 8:CB:338:G:C5'     | 2.23                     | 0.40              |
| 8:CB:355:U:O2      | 8:CB:355:U:H2'     | 2.21                     | 0.40              |
| 8:CB:381:G:C4'     | 32:CZ:13:THR:HG22  | 2.52                     | 0.40              |
| 8:CB:585:G:C5      | 8:CB:1251:C:C5     | 3.09                     | 0.40              |
| 8:CB:836:G:C6      | 8:CB:837:C:N4      | 2.89                     | 0.40              |
| 8:CB:915:C:C6      | 8:CB:915:C:C5'     | 2.97                     | 0.40              |
| 8:CB:1034:G:C6     | 8:CB:1035:U:O4     | 2.75                     | 0.40              |
| 8:CB:1062:G:H2'    | 8:CB:1063:G:H8     | 1.82                     | 0.40              |
| 8:CB:1125:G:H3'    | 8:CB:1125:G:C8     | 2.55                     | 0.40              |
| 8:CB:1183:U:C2     | 8:CB:1184:U:C5     | 3.10                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CB:1195:G:N3     | 8:CB:1196:C:C6     | 2.90                     | 0.40              |
| 8:CB:1337:G:H5'    | 8:CB:1338:G:OP2    | 2.22                     | 0.40              |
| 8:CB:1346:G:C2'    | 8:CB:1347:A:H5'    | 2.51                     | 0.40              |
| 8:CB:1359:A:H5'    | 8:CB:1359:A:H8     | 1.83                     | 0.40              |
| 8:CB:1609:A:N1     | 8:CB:1616:A:C6     | 2.90                     | 0.40              |
| 8:CB:1622:G:O2'    | 8:CB:1623:G:H5'    | 2.22                     | 0.40              |
| 8:CB:1707:G:C2'    | 8:CB:1708:C:H5'    | 2.44                     | 0.40              |
| 8:CB:1719:G:H2'    | 8:CB:1720:U:O4'    | 2.22                     | 0.40              |
| 8:CB:1786:A:C5     | 8:CB:1938:A:C2     | 3.10                     | 0.40              |
| 8:CB:1833:C:H2'    | 8:CB:1834:U:O4'    | 2.20                     | 0.40              |
| 8:CB:1899:A:H3'    | 8:CB:1899:A:H8     | 1.83                     | 0.40              |
| 8:CB:2046:G:N2     | 8:CB:2623:G:H1'    | 2.36                     | 0.40              |
| 8:CB:2199:A:N1     | 8:CB:2200:C:O2     | 2.55                     | 0.40              |
| 8:CB:2258:C:H5''   | 8:CB:2258:C:C6     | 2.54                     | 0.40              |
| 8:CB:2288:A:HO2'   | 8:CB:2288:A:H8     | 1.69                     | 0.40              |
| 8:CB:2327:A:H8     | 8:CB:2327:A:OP2    | 2.05                     | 0.40              |
| 8:CB:2539:C:H3'    | 8:CB:2540:C:H5''   | 2.00                     | 0.40              |
| 8:CB:2547:A:C6     | 8:CB:2548:U:C4     | 3.09                     | 0.40              |
| 8:CB:2642:G:O2'    | 8:CB:2643:G:H5'    | 2.21                     | 0.40              |
| 8:CB:2855:C:H2'    | 8:CB:2856:A:H5'    | 2.02                     | 0.40              |
| 9:CC:229:HIS:CE1   | 9:CC:230:PRO:HD2   | 2.56                     | 0.40              |
| 9:CC:241:LYS:O     | 9:CC:243:PRO:HG3   | 2.22                     | 0.40              |
| 10:CD:89:GLU:HG2   | 10:CD:93:GLY:HA3   | 1.99                     | 0.40              |
| 10:CD:157:LYS:O    | 16:CJ:81:ILE:CG2   | 2.69                     | 0.40              |
| 10:CD:179:ARG:O    | 10:CD:180:VAL:HG13 | 2.22                     | 0.40              |
| 10:CD:188:LEU:HD12 | 10:CD:188:LEU:HA   | 1.89                     | 0.40              |
| 10:CD:207:VAL:HG23 | 10:CD:208:LYS:N    | 2.36                     | 0.40              |
| 11:CE:190:ALA:CB   | 11:CE:194:LYS:HE2  | 2.50                     | 0.40              |
| 12:CF:4:HIS:CD2    | 12:CF:8:LYS:HE2    | 2.57                     | 0.40              |
| 16:CJ:55:ILE:CD1   | 16:CJ:134:ALA:HB1  | 2.52                     | 0.40              |
| 18:CL:63:LYS:HG2   | 18:CL:64:PHE:H     | 1.86                     | 0.40              |
| 19:CM:6:ARG:C      | 19:CM:8:LYS:N      | 2.75                     | 0.40              |
| 19:CM:9:PHE:CD1    | 19:CM:9:PHE:C      | 2.95                     | 0.40              |
| 20:CN:67:PHE:O     | 20:CN:68:ALA:C     | 2.59                     | 0.40              |
| 26:CT:26:LYS:C     | 26:CT:27:SER:O     | 2.59                     | 0.40              |
| 28:CV:24:ASN:CA    | 28:CV:44:HIS:HB2   | 2.51                     | 0.40              |
| 28:CV:65:VAL:O     | 28:CV:65:VAL:HG22  | 2.21                     | 0.40              |
| 29:CW:68:PHE:O     | 29:CW:68:PHE:CG    | 2.75                     | 0.40              |
| 30:CX:9:LYS:NZ     | 30:CX:9:LYS:CB     | 2.83                     | 0.40              |
| 33:DA:58:C:H2'     | 33:DA:59:A:H8      | 1.86                     | 0.40              |
| 33:DA:109:A:N7     | 33:DA:326:G:C2     | 2.89                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DA:116:A:H61   | 33:DA:313:A:H1'   | 1.87                     | 0.40              |
| 33:DA:131:A:C2    | 33:DA:232:G:C2    | 3.10                     | 0.40              |
| 33:DA:158:G:C6    | 33:DA:164:G:C5    | 3.10                     | 0.40              |
| 33:DA:172:A:N6    | 33:DA:174:A:C5    | 2.89                     | 0.40              |
| 33:DA:236:A:C4    | 33:DA:237:G:N7    | 2.90                     | 0.40              |
| 33:DA:457:G:N2    | 33:DA:458:U:O2    | 2.54                     | 0.40              |
| 33:DA:541:G:N3    | 33:DA:542:G:C8    | 2.89                     | 0.40              |
| 33:DA:563:A:C6    | 33:DA:567:G:N3    | 2.90                     | 0.40              |
| 33:DA:579:A:N1    | 33:DA:763:G:C6    | 2.90                     | 0.40              |
| 33:DA:617:G:N2    | 33:DA:618:C:C4    | 2.90                     | 0.40              |
| 33:DA:617:G:C2    | 33:DA:618:C:C6    | 3.10                     | 0.40              |
| 33:DA:718:A:C5    | 33:DA:719:C:O2    | 2.74                     | 0.40              |
| 33:DA:770:C:N3    | 33:DA:809:G:N2    | 2.66                     | 0.40              |
| 33:DA:780:A:C2    | 33:DA:803:G:C6    | 3.09                     | 0.40              |
| 33:DA:806:C:O2    | 33:DA:807:A:C8    | 2.74                     | 0.40              |
| 33:DA:830:G:N2    | 33:DA:831:A:C2    | 2.89                     | 0.40              |
| 33:DA:905:U:H6    | 33:DA:905:U:C5'   | 2.32                     | 0.40              |
| 33:DA:1022:A:C8   | 33:DA:1022:A:H5'' | 2.57                     | 0.40              |
| 33:DA:1239:A:C2   | 33:DA:1296:C:O2   | 2.75                     | 0.40              |
| 33:DA:1372:U:OP1  | 41:DI:70:GLY:HA3  | 2.21                     | 0.40              |
| 33:DA:1441:A:H8   | 33:DA:1442:G:N7   | 2.19                     | 0.40              |
| 33:DA:1471:U:HO2' | 33:DA:1472:U:H5'  | 1.82                     | 0.40              |
| 33:DA:1511:G:O2'  | 33:DA:1512:U:H5'  | 2.21                     | 0.40              |
| 33:DA:1523:G:C5   | 33:DA:1524:C:H5   | 2.39                     | 0.40              |
| 33:DA:1526:G:H3'  | 53:DU:38:GLU:HG2  | 2.03                     | 0.40              |
| 34:DB:65:LYS:HD3  | 34:DB:89:PHE:CZ   | 2.55                     | 0.40              |
| 34:DB:100:LEU:HB3 | 34:DB:178:LEU:CD1 | 2.51                     | 0.40              |
| 36:DD:97:LEU:HD13 | 36:DD:136:VAL:CG2 | 2.52                     | 0.40              |
| 36:DD:115:GLN:O   | 36:DD:118:SER:N   | 2.55                     | 0.40              |
| 37:DE:43:GLY:O    | 37:DE:73:VAL:HG12 | 2.22                     | 0.40              |
| 38:DF:48:ALA:CB   | 50:DR:65:SER:O    | 2.70                     | 0.40              |
| 38:DF:86:ARG:HE   | 38:DF:86:ARG:HB3  | 1.80                     | 0.40              |
| 38:DF:90:MET:CE   | 38:DF:93:LYS:HE2  | 2.52                     | 0.40              |
| 39:DG:22:LEU:HD21 | 39:DG:58:LEU:HB2  | 2.03                     | 0.40              |
| 40:DH:100:ILE:HB  | 40:DH:101:ALA:H   | 1.62                     | 0.40              |
| 41:DI:57:VAL:HG12 | 41:DI:57:VAL:O    | 2.20                     | 0.40              |
| 42:DJ:12:ALA:HB3  | 42:DJ:18:ILE:HB   | 2.03                     | 0.40              |
| 43:DK:32:THR:O    | 43:DK:32:THR:CG2  | 2.69                     | 0.40              |
| 45:DM:18:LEU:HD11 | 45:DM:32:ILE:HG23 | 2.02                     | 0.40              |
| 48:DP:12:LYS:HE3  | 48:DP:12:LYS:HB2  | 1.82                     | 0.40              |
| 50:DR:24:ASP:OD2  | 50:DR:27:THR:OG1  | 2.35                     | 0.40              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 51:DS:52:ASN:HB3 | 51:DS:76:THR:HA | 2.03                     | 0.40              |
| 52:DT:27:MET:HG2 | 52:DT:28:ARG:N  | 2.35                     | 0.40              |
| 52:DT:76:ALA:O   | 52:DT:79:THR:HB | 2.21                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |   |
|-----|-------|---------------|-----------|----------|----------|-------------|---|
| 1   | A0    | 54/56 (96%)   | 26 (48%)  | 13 (24%) | 15 (28%) | 0           | 0 |
| 1   | C0    | 54/56 (96%)   | 24 (44%)  | 12 (22%) | 18 (33%) | 0           | 0 |
| 2   | A1    | 52/54 (96%)   | 18 (35%)  | 15 (29%) | 19 (36%) | 0           | 0 |
| 2   | C1    | 52/54 (96%)   | 18 (35%)  | 12 (23%) | 22 (42%) | 0           | 0 |
| 3   | A2    | 44/46 (96%)   | 15 (34%)  | 16 (36%) | 13 (30%) | 0           | 0 |
| 3   | C2    | 44/46 (96%)   | 16 (36%)  | 16 (36%) | 12 (27%) | 0           | 0 |
| 4   | A3    | 62/64 (97%)   | 24 (39%)  | 17 (27%) | 21 (34%) | 0           | 0 |
| 4   | C3    | 62/64 (97%)   | 29 (47%)  | 20 (32%) | 13 (21%) | 0           | 1 |
| 5   | A4    | 36/38 (95%)   | 14 (39%)  | 13 (36%) | 9 (25%)  | 0           | 0 |
| 5   | C4    | 36/38 (95%)   | 9 (25%)   | 16 (44%) | 11 (31%) | 0           | 0 |
| 6   | A5    | 14/16 (88%)   | 6 (43%)   | 5 (36%)  | 3 (21%)  | 0           | 1 |
| 9   | AC    | 266/273 (97%) | 101 (38%) | 67 (25%) | 98 (37%) | 0           | 0 |
| 9   | CC    | 266/273 (97%) | 101 (38%) | 70 (26%) | 95 (36%) | 0           | 0 |
| 10  | AD    | 207/209 (99%) | 80 (39%)  | 56 (27%) | 71 (34%) | 0           | 0 |
| 10  | CD    | 207/209 (99%) | 72 (35%)  | 65 (31%) | 70 (34%) | 0           | 0 |
| 11  | AE    | 199/201 (99%) | 76 (38%)  | 58 (29%) | 65 (33%) | 0           | 0 |
| 11  | CE    | 199/201 (99%) | 71 (36%)  | 63 (32%) | 65 (33%) | 0           | 0 |

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| Mol | Chain | Analysed      | Favoured | Allowed  | Outliers | Percentiles |   |
|-----|-------|---------------|----------|----------|----------|-------------|---|
| 12  | AF    | 176/178 (99%) | 95 (54%) | 48 (27%) | 33 (19%) | 0           | 2 |
| 12  | CF    | 176/178 (99%) | 95 (54%) | 45 (26%) | 36 (20%) | 0           | 1 |
| 13  | AG    | 174/176 (99%) | 98 (56%) | 42 (24%) | 34 (20%) | 0           | 2 |
| 13  | CG    | 174/176 (99%) | 89 (51%) | 52 (30%) | 33 (19%) | 0           | 2 |
| 14  | AH    | 147/149 (99%) | 94 (64%) | 34 (23%) | 19 (13%) | 0           | 5 |
| 14  | CH    | 147/149 (99%) | 74 (50%) | 39 (26%) | 34 (23%) | 0           | 0 |
| 15  | AI    | 139/141 (99%) | 92 (66%) | 33 (24%) | 14 (10%) | 0           | 8 |
| 15  | CI    | 137/141 (97%) | 87 (64%) | 32 (23%) | 18 (13%) | 0           | 4 |
| 16  | AJ    | 139/142 (98%) | 60 (43%) | 34 (24%) | 45 (32%) | 0           | 0 |
| 16  | CJ    | 139/142 (98%) | 57 (41%) | 37 (27%) | 45 (32%) | 0           | 0 |
| 17  | AK    | 120/123 (98%) | 67 (56%) | 30 (25%) | 23 (19%) | 0           | 2 |
| 17  | CK    | 120/123 (98%) | 66 (55%) | 29 (24%) | 25 (21%) | 0           | 1 |
| 18  | AL    | 142/144 (99%) | 53 (37%) | 37 (26%) | 52 (37%) | 0           | 0 |
| 18  | CL    | 142/144 (99%) | 54 (38%) | 39 (28%) | 49 (34%) | 0           | 0 |
| 19  | AM    | 134/136 (98%) | 51 (38%) | 46 (34%) | 37 (28%) | 0           | 0 |
| 19  | CM    | 134/136 (98%) | 55 (41%) | 45 (34%) | 34 (25%) | 0           | 0 |
| 20  | AN    | 125/127 (98%) | 55 (44%) | 43 (34%) | 27 (22%) | 0           | 1 |
| 20  | CN    | 125/127 (98%) | 55 (44%) | 44 (35%) | 26 (21%) | 0           | 1 |
| 21  | AO    | 115/117 (98%) | 49 (43%) | 40 (35%) | 26 (23%) | 0           | 0 |
| 21  | CO    | 115/117 (98%) | 46 (40%) | 41 (36%) | 28 (24%) | 0           | 0 |
| 22  | AP    | 112/114 (98%) | 48 (43%) | 30 (27%) | 34 (30%) | 0           | 0 |
| 22  | CP    | 112/114 (98%) | 48 (43%) | 31 (28%) | 33 (30%) | 0           | 0 |
| 23  | AQ    | 115/117 (98%) | 62 (54%) | 26 (23%) | 27 (24%) | 0           | 0 |
| 23  | CQ    | 115/117 (98%) | 57 (50%) | 30 (26%) | 28 (24%) | 0           | 0 |
| 24  | AR    | 101/103 (98%) | 31 (31%) | 25 (25%) | 45 (45%) | 0           | 0 |
| 24  | CR    | 101/103 (98%) | 37 (37%) | 23 (23%) | 41 (41%) | 0           | 0 |
| 25  | AS    | 108/110 (98%) | 58 (54%) | 24 (22%) | 26 (24%) | 0           | 0 |
| 25  | CS    | 108/110 (98%) | 52 (48%) | 29 (27%) | 27 (25%) | 0           | 0 |
| 26  | AT    | 98/100 (98%)  | 42 (43%) | 33 (34%) | 23 (24%) | 0           | 0 |
| 26  | CT    | 98/100 (98%)  | 42 (43%) | 33 (34%) | 23 (24%) | 0           | 0 |
| 27  | AU    | 101/103 (98%) | 40 (40%) | 36 (36%) | 25 (25%) | 0           | 0 |

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| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |    |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 27  | CU    | 101/103 (98%) | 38 (38%)  | 31 (31%) | 32 (32%) | 0           | 0  |
| 28  | AV    | 92/94 (98%)   | 58 (63%)  | 21 (23%) | 13 (14%) | 0           | 4  |
| 28  | CV    | 92/94 (98%)   | 57 (62%)  | 21 (23%) | 14 (15%) | 0           | 3  |
| 29  | AW    | 82/84 (98%)   | 20 (24%)  | 28 (34%) | 34 (42%) | 0           | 0  |
| 29  | CW    | 82/84 (98%)   | 17 (21%)  | 29 (35%) | 36 (44%) | 0           | 0  |
| 30  | AX    | 61/63 (97%)   | 17 (28%)  | 25 (41%) | 19 (31%) | 0           | 0  |
| 30  | CX    | 61/63 (97%)   | 26 (43%)  | 22 (36%) | 13 (21%) | 0           | 1  |
| 31  | AY    | 56/58 (97%)   | 25 (45%)  | 17 (30%) | 14 (25%) | 0           | 0  |
| 31  | CY    | 56/58 (97%)   | 26 (46%)  | 19 (34%) | 11 (20%) | 0           | 2  |
| 32  | AZ    | 68/70 (97%)   | 30 (44%)  | 19 (28%) | 19 (28%) | 0           | 0  |
| 32  | CZ    | 68/70 (97%)   | 34 (50%)  | 21 (31%) | 13 (19%) | 0           | 2  |
| 34  | BB    | 217/240 (90%) | 128 (59%) | 65 (30%) | 24 (11%) | 0           | 6  |
| 34  | DB    | 217/240 (90%) | 124 (57%) | 59 (27%) | 34 (16%) | 0           | 3  |
| 35  | BC    | 205/232 (88%) | 116 (57%) | 59 (29%) | 30 (15%) | 0           | 3  |
| 35  | DC    | 205/232 (88%) | 112 (55%) | 67 (33%) | 26 (13%) | 0           | 5  |
| 36  | BD    | 203/205 (99%) | 120 (59%) | 57 (28%) | 26 (13%) | 0           | 5  |
| 36  | DD    | 203/205 (99%) | 116 (57%) | 50 (25%) | 37 (18%) | 0           | 2  |
| 37  | BE    | 149/166 (90%) | 94 (63%)  | 33 (22%) | 22 (15%) | 0           | 3  |
| 37  | DE    | 149/166 (90%) | 77 (52%)  | 49 (33%) | 23 (15%) | 0           | 3  |
| 38  | BF    | 99/135 (73%)  | 62 (63%)  | 25 (25%) | 12 (12%) | 0           | 5  |
| 38  | DF    | 99/135 (73%)  | 56 (57%)  | 22 (22%) | 21 (21%) | 0           | 1  |
| 39  | BG    | 149/178 (84%) | 100 (67%) | 34 (23%) | 15 (10%) | 0           | 8  |
| 39  | DG    | 151/178 (85%) | 94 (62%)  | 43 (28%) | 14 (9%)  | 0           | 10 |
| 40  | BH    | 127/129 (98%) | 73 (58%)  | 42 (33%) | 12 (9%)  | 0           | 10 |
| 40  | DH    | 127/129 (98%) | 70 (55%)  | 34 (27%) | 23 (18%) | 0           | 2  |
| 41  | BI    | 125/129 (97%) | 78 (62%)  | 35 (28%) | 12 (10%) | 0           | 9  |
| 41  | DI    | 125/129 (97%) | 73 (58%)  | 32 (26%) | 20 (16%) | 0           | 3  |
| 42  | BJ    | 97/103 (94%)  | 59 (61%)  | 23 (24%) | 15 (16%) | 0           | 3  |
| 42  | DJ    | 97/103 (94%)  | 62 (64%)  | 24 (25%) | 11 (11%) | 0           | 6  |
| 43  | BK    | 115/128 (90%) | 69 (60%)  | 31 (27%) | 15 (13%) | 0           | 4  |
| 43  | DK    | 115/128 (90%) | 73 (64%)  | 30 (26%) | 12 (10%) | 0           | 8  |

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| Mol | Chain | Analysed          | Favoured   | Allowed    | Outliers   | Percentiles |    |
|-----|-------|-------------------|------------|------------|------------|-------------|----|
| 44  | BL    | 121/123 (98%)     | 67 (55%)   | 37 (31%)   | 17 (14%)   | 0           | 4  |
| 44  | DL    | 121/123 (98%)     | 73 (60%)   | 32 (26%)   | 16 (13%)   | 0           | 4  |
| 45  | BM    | 113/117 (97%)     | 70 (62%)   | 32 (28%)   | 11 (10%)   | 0           | 9  |
| 45  | DM    | 112/117 (96%)     | 78 (70%)   | 20 (18%)   | 14 (12%)   | 0           | 5  |
| 46  | BN    | 92/100 (92%)      | 58 (63%)   | 18 (20%)   | 16 (17%)   | 0           | 2  |
| 46  | DN    | 92/100 (92%)      | 55 (60%)   | 18 (20%)   | 19 (21%)   | 0           | 1  |
| 47  | BO    | 86/89 (97%)       | 51 (59%)   | 26 (30%)   | 9 (10%)    | 0           | 7  |
| 47  | DO    | 86/89 (97%)       | 51 (59%)   | 26 (30%)   | 9 (10%)    | 0           | 7  |
| 48  | BP    | 80/82 (98%)       | 43 (54%)   | 22 (28%)   | 15 (19%)   | 0           | 2  |
| 48  | DP    | 79/82 (96%)       | 38 (48%)   | 24 (30%)   | 17 (22%)   | 0           | 1  |
| 49  | BQ    | 79/83 (95%)       | 53 (67%)   | 15 (19%)   | 11 (14%)   | 0           | 4  |
| 49  | DQ    | 79/83 (95%)       | 53 (67%)   | 16 (20%)   | 10 (13%)   | 0           | 5  |
| 50  | BR    | 54/74 (73%)       | 25 (46%)   | 19 (35%)   | 10 (18%)   | 0           | 2  |
| 50  | DR    | 54/74 (73%)       | 24 (44%)   | 19 (35%)   | 11 (20%)   | 0           | 1  |
| 51  | BS    | 78/91 (86%)       | 52 (67%)   | 20 (26%)   | 6 (8%)     | 1           | 14 |
| 51  | DS    | 79/91 (87%)       | 50 (63%)   | 20 (25%)   | 9 (11%)    | 0           | 6  |
| 52  | BT    | 83/86 (96%)       | 51 (61%)   | 20 (24%)   | 12 (14%)   | 0           | 4  |
| 52  | DT    | 83/86 (96%)       | 52 (63%)   | 20 (24%)   | 11 (13%)   | 0           | 4  |
| 53  | BU    | 50/71 (70%)       | 26 (52%)   | 14 (28%)   | 10 (20%)   | 0           | 1  |
| 53  | DU    | 50/71 (70%)       | 13 (26%)   | 27 (54%)   | 10 (20%)   | 0           | 1  |
| All | All   | 11307/11918 (95%) | 5696 (50%) | 3156 (28%) | 2455 (22%) | 0           | 1  |

All (2455) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A0    | 19  | ASP  |
| 1   | A0    | 21  | LEU  |
| 1   | A0    | 25  | THR  |
| 1   | A0    | 29  | VAL  |
| 1   | A0    | 36  | LYS  |
| 2   | A1    | 20  | TYR  |
| 2   | A1    | 30  | PRO  |
| 2   | A1    | 33  | LEU  |
| 2   | A1    | 46  | VAL  |
| 2   | A1    | 47  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | A1    | 50  | GLU  |
| 3   | A2    | 13  | ASN  |
| 3   | A2    | 17  | GLY  |
| 3   | A2    | 18  | PHE  |
| 3   | A2    | 20  | ALA  |
| 3   | A2    | 36  | ALA  |
| 3   | A2    | 37  | LYS  |
| 3   | A2    | 40  | ALA  |
| 4   | A3    | 23  | HIS  |
| 4   | A3    | 27  | ASN  |
| 4   | A3    | 41  | ARG  |
| 4   | A3    | 43  | LEU  |
| 4   | A3    | 45  | PRO  |
| 4   | A3    | 49  | VAL  |
| 4   | A3    | 53  | ASP  |
| 4   | A3    | 60  | CYS  |
| 4   | A3    | 61  | LEU  |
| 5   | A4    | 8   | LYS  |
| 5   | A4    | 17  | VAL  |
| 5   | A4    | 20  | ASP  |
| 5   | A4    | 23  | ILE  |
| 5   | A4    | 26  | ILE  |
| 6   | A5    | 148 | PRO  |
| 6   | A5    | 153 | ARG  |
| 6   | A5    | 154 | ILE  |
| 9   | AC    | 12  | ARG  |
| 9   | AC    | 21  | PRO  |
| 9   | AC    | 22  | GLU  |
| 9   | AC    | 25  | LYS  |
| 9   | AC    | 32  | LEU  |
| 9   | AC    | 33  | LEU  |
| 9   | AC    | 42  | ARG  |
| 9   | AC    | 45  | ASN  |
| 9   | AC    | 47  | ARG  |
| 9   | AC    | 48  | ILE  |
| 9   | AC    | 51  | ARG  |
| 9   | AC    | 53  | ILE  |
| 9   | AC    | 60  | ALA  |
| 9   | AC    | 61  | TYR  |
| 9   | AC    | 65  | ASP  |
| 9   | AC    | 79  | ARG  |
| 9   | AC    | 88  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AC    | 92  | LEU  |
| 9   | AC    | 103 | ILE  |
| 9   | AC    | 107 | LYS  |
| 9   | AC    | 110 | LYS  |
| 9   | AC    | 124 | LYS  |
| 9   | AC    | 135 | PRO  |
| 9   | AC    | 142 | ASN  |
| 9   | AC    | 143 | VAL  |
| 9   | AC    | 149 | LYS  |
| 9   | AC    | 163 | ILE  |
| 9   | AC    | 165 | ALA  |
| 9   | AC    | 170 | TYR  |
| 9   | AC    | 171 | VAL  |
| 9   | AC    | 172 | THR  |
| 9   | AC    | 173 | LEU  |
| 9   | AC    | 194 | VAL  |
| 9   | AC    | 216 | ARG  |
| 9   | AC    | 217 | PRO  |
| 9   | AC    | 219 | VAL  |
| 9   | AC    | 221 | GLY  |
| 9   | AC    | 243 | PRO  |
| 9   | AC    | 246 | PRO  |
| 9   | AC    | 260 | LYS  |
| 9   | AC    | 265 | PHE  |
| 9   | AC    | 266 | ILE  |
| 9   | AC    | 267 | VAL  |
| 9   | AC    | 268 | ARG  |
| 10  | AD    | 3   | GLY  |
| 10  | AD    | 4   | LEU  |
| 10  | AD    | 7   | LYS  |
| 10  | AD    | 9   | VAL  |
| 10  | AD    | 17  | GLU  |
| 10  | AD    | 18  | ASP  |
| 10  | AD    | 30  | GLU  |
| 10  | AD    | 32  | ASN  |
| 10  | AD    | 34  | VAL  |
| 10  | AD    | 42  | ASN  |
| 10  | AD    | 47  | ALA  |
| 10  | AD    | 50  | VAL  |
| 10  | AD    | 52  | THR  |
| 10  | AD    | 54  | ALA  |
| 10  | AD    | 60  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10  | AD    | 67  | HIS  |
| 10  | AD    | 70  | LYS  |
| 10  | AD    | 82  | PHE  |
| 10  | AD    | 96  | ILE  |
| 10  | AD    | 139 | SER  |
| 10  | AD    | 143 | PRO  |
| 10  | AD    | 146 | ILE  |
| 10  | AD    | 152 | PRO  |
| 10  | AD    | 175 | LEU  |
| 10  | AD    | 181 | ASP  |
| 10  | AD    | 182 | ALA  |
| 10  | AD    | 190 | LYS  |
| 10  | AD    | 192 | ALA  |
| 10  | AD    | 199 | SER  |
| 11  | AE    | 4   | VAL  |
| 11  | AE    | 19  | PHE  |
| 11  | AE    | 23  | PHE  |
| 11  | AE    | 43  | THR  |
| 11  | AE    | 44  | ARG  |
| 11  | AE    | 47  | LYS  |
| 11  | AE    | 58  | LYS  |
| 11  | AE    | 69  | ARG  |
| 11  | AE    | 80  | SER  |
| 11  | AE    | 84  | THR  |
| 11  | AE    | 104 | ALA  |
| 11  | AE    | 105 | LEU  |
| 11  | AE    | 126 | VAL  |
| 11  | AE    | 128 | ALA  |
| 11  | AE    | 142 | ALA  |
| 11  | AE    | 144 | GLU  |
| 11  | AE    | 146 | VAL  |
| 11  | AE    | 148 | ILE  |
| 11  | AE    | 158 | PHE  |
| 11  | AE    | 159 | LEU  |
| 11  | AE    | 164 | LEU  |
| 11  | AE    | 175 | ILE  |
| 12  | AF    | 3   | LEU  |
| 12  | AF    | 8   | LYS  |
| 12  | AF    | 19  | PHE  |
| 12  | AF    | 34  | THR  |
| 12  | AF    | 39  | VAL  |
| 12  | AF    | 66  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12  | AF    | 67  | THR  |
| 12  | AF    | 73  | VAL  |
| 12  | AF    | 77  | LYS  |
| 12  | AF    | 83  | PRO  |
| 12  | AF    | 133 | GLU  |
| 12  | AF    | 134 | GLN  |
| 12  | AF    | 153 | ILE  |
| 12  | AF    | 176 | PHE  |
| 13  | AG    | 3   | VAL  |
| 13  | AG    | 6   | ALA  |
| 13  | AG    | 11  | PRO  |
| 13  | AG    | 18  | ILE  |
| 13  | AG    | 28  | LYS  |
| 13  | AG    | 46  | ASP  |
| 13  | AG    | 173 | ALA  |
| 14  | AH    | 5   | LEU  |
| 14  | AH    | 8   | LYS  |
| 14  | AH    | 10  | ALA  |
| 14  | AH    | 29  | PHE  |
| 15  | AI    | 16  | MET  |
| 15  | AI    | 18  | ASN  |
| 16  | AJ    | 9   | GLU  |
| 16  | AJ    | 11  | VAL  |
| 16  | AJ    | 23  | LYS  |
| 16  | AJ    | 25  | LEU  |
| 16  | AJ    | 50  | THR  |
| 16  | AJ    | 52  | ASP  |
| 16  | AJ    | 58  | ASN  |
| 16  | AJ    | 63  | ALA  |
| 16  | AJ    | 81  | ILE  |
| 16  | AJ    | 84  | ILE  |
| 16  | AJ    | 96  | ARG  |
| 16  | AJ    | 99  | ARG  |
| 16  | AJ    | 100 | VAL  |
| 16  | AJ    | 101 | ILE  |
| 16  | AJ    | 110 | PRO  |
| 16  | AJ    | 128 | ASN  |
| 16  | AJ    | 130 | HIS  |
| 16  | AJ    | 137 | PRO  |
| 17  | AK    | 16  | ALA  |
| 17  | AK    | 17  | ARG  |
| 17  | AK    | 35  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 17  | AK    | 72  | PRO  |
| 17  | AK    | 92  | GLU  |
| 17  | AK    | 122 | VAL  |
| 18  | AL    | 9   | ALA  |
| 18  | AL    | 29  | LYS  |
| 18  | AL    | 30  | THR  |
| 18  | AL    | 42  | SER  |
| 18  | AL    | 48  | ARG  |
| 18  | AL    | 49  | GLY  |
| 18  | AL    | 54  | GLN  |
| 18  | AL    | 56  | PRO  |
| 18  | AL    | 58  | TYR  |
| 18  | AL    | 62  | PRO  |
| 18  | AL    | 69  | ARG  |
| 18  | AL    | 72  | ALA  |
| 18  | AL    | 78  | ARG  |
| 18  | AL    | 85  | VAL  |
| 18  | AL    | 91  | ASP  |
| 18  | AL    | 92  | LEU  |
| 18  | AL    | 95  | LEU  |
| 18  | AL    | 111 | ILE  |
| 18  | AL    | 116 | VAL  |
| 18  | AL    | 118 | THR  |
| 18  | AL    | 120 | VAL  |
| 19  | AM    | 3   | GLN  |
| 19  | AM    | 4   | PRO  |
| 19  | AM    | 6   | ARG  |
| 19  | AM    | 11  | LYS  |
| 19  | AM    | 17  | ASN  |
| 19  | AM    | 31  | PHE  |
| 19  | AM    | 33  | LEU  |
| 19  | AM    | 55  | ARG  |
| 19  | AM    | 59  | ARG  |
| 19  | AM    | 70  | ASP  |
| 19  | AM    | 71  | LYS  |
| 19  | AM    | 74  | THR  |
| 19  | AM    | 81  | ARG  |
| 19  | AM    | 86  | LYS  |
| 20  | AN    | 6   | SER  |
| 20  | AN    | 12  | ARG  |
| 20  | AN    | 63  | ARG  |
| 20  | AN    | 68  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | AN    | 70  | THR  |
| 20  | AN    | 73  | ASN  |
| 20  | AN    | 74  | GLU  |
| 20  | AN    | 86  | ARG  |
| 20  | AN    | 91  | ALA  |
| 21  | AO    | 9   | ARG  |
| 21  | AO    | 21  | LEU  |
| 21  | AO    | 28  | VAL  |
| 21  | AO    | 31  | THR  |
| 21  | AO    | 42  | PRO  |
| 21  | AO    | 55  | GLU  |
| 21  | AO    | 79  | ALA  |
| 21  | AO    | 90  | VAL  |
| 21  | AO    | 115 | LEU  |
| 22  | AP    | 23  | ASP  |
| 22  | AP    | 42  | PHE  |
| 22  | AP    | 49  | ILE  |
| 22  | AP    | 60  | VAL  |
| 22  | AP    | 71  | ARG  |
| 22  | AP    | 77  | SER  |
| 22  | AP    | 79  | VAL  |
| 22  | AP    | 80  | VAL  |
| 22  | AP    | 85  | VAL  |
| 22  | AP    | 87  | ARG  |
| 22  | AP    | 92  | ARG  |
| 22  | AP    | 97  | TYR  |
| 22  | AP    | 105 | LYS  |
| 23  | AQ    | 9   | ALA  |
| 23  | AQ    | 24  | TYR  |
| 23  | AQ    | 34  | ALA  |
| 23  | AQ    | 40  | LYS  |
| 23  | AQ    | 50  | ARG  |
| 23  | AQ    | 85  | ALA  |
| 23  | AQ    | 86  | SER  |
| 23  | AQ    | 89  | ILE  |
| 23  | AQ    | 92  | LYS  |
| 24  | AR    | 7   | SER  |
| 24  | AR    | 13  | ARG  |
| 24  | AR    | 14  | VAL  |
| 24  | AR    | 15  | SER  |
| 24  | AR    | 27  | ILE  |
| 24  | AR    | 31  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24  | AR    | 32  | THR  |
| 24  | AR    | 39  | LEU  |
| 24  | AR    | 40  | MET  |
| 24  | AR    | 45  | GLU  |
| 24  | AR    | 47  | VAL  |
| 24  | AR    | 52  | PRO  |
| 24  | AR    | 64  | VAL  |
| 24  | AR    | 68  | ARG  |
| 24  | AR    | 71  | LYS  |
| 24  | AR    | 73  | LYS  |
| 24  | AR    | 74  | ILE  |
| 24  | AR    | 86  | GLN  |
| 24  | AR    | 87  | GLN  |
| 24  | AR    | 94  | THR  |
| 24  | AR    | 95  | ASP  |
| 24  | AR    | 98  | ILE  |
| 24  | AR    | 100 | GLY  |
| 25  | AS    | 3   | THR  |
| 25  | AS    | 8   | ARG  |
| 25  | AS    | 12  | SER  |
| 25  | AS    | 19  | LEU  |
| 25  | AS    | 20  | VAL  |
| 25  | AS    | 25  | ARG  |
| 25  | AS    | 27  | LYS  |
| 25  | AS    | 28  | LYS  |
| 25  | AS    | 41  | LYS  |
| 25  | AS    | 54  | ALA  |
| 25  | AS    | 68  | ASP  |
| 25  | AS    | 92  | ARG  |
| 25  | AS    | 96  | ILE  |
| 25  | AS    | 99  | ARG  |
| 25  | AS    | 104 | THR  |
| 26  | AT    | 4   | GLU  |
| 26  | AT    | 12  | ARG  |
| 26  | AT    | 17  | SER  |
| 26  | AT    | 63  | VAL  |
| 26  | AT    | 66  | LYS  |
| 26  | AT    | 85  | VAL  |
| 27  | AU    | 2   | ALA  |
| 27  | AU    | 4   | ILE  |
| 27  | AU    | 24  | VAL  |
| 27  | AU    | 36  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 27  | AU    | 39  | ASN  |
| 27  | AU    | 41  | VAL  |
| 27  | AU    | 57  | ILE  |
| 27  | AU    | 60  | LYS  |
| 27  | AU    | 64  | ILE  |
| 27  | AU    | 93  | ARG  |
| 27  | AU    | 98  | ASN  |
| 28  | AV    | 14  | LYS  |
| 28  | AV    | 37  | PRO  |
| 28  | AV    | 38  | LEU  |
| 29  | AW    | 7   | GLY  |
| 29  | AW    | 16  | GLU  |
| 29  | AW    | 32  | ALA  |
| 29  | AW    | 36  | ILE  |
| 29  | AW    | 39  | GLN  |
| 29  | AW    | 45  | HIS  |
| 29  | AW    | 49  | ASN  |
| 29  | AW    | 50  | VAL  |
| 29  | AW    | 58  | LEU  |
| 29  | AW    | 61  | LYS  |
| 29  | AW    | 66  | VAL  |
| 29  | AW    | 67  | LYS  |
| 29  | AW    | 74  | LYS  |
| 30  | AX    | 8   | GLU  |
| 30  | AX    | 15  | ASN  |
| 30  | AX    | 16  | THR  |
| 30  | AX    | 17  | GLU  |
| 30  | AX    | 23  | ARG  |
| 30  | AX    | 26  | PHE  |
| 30  | AX    | 27  | ASN  |
| 30  | AX    | 28  | LEU  |
| 30  | AX    | 32  | ALA  |
| 30  | AX    | 33  | ALA  |
| 30  | AX    | 34  | SER  |
| 30  | AX    | 48  | ARG  |
| 30  | AX    | 49  | ASP  |
| 31  | AY    | 9   | THR  |
| 31  | AY    | 12  | ALA  |
| 31  | AY    | 22  | THR  |
| 31  | AY    | 53  | MET  |
| 32  | AZ    | 3   | LYS  |
| 32  | AZ    | 4   | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 32  | AZ    | 7   | PRO  |
| 32  | AZ    | 8   | LYS  |
| 32  | AZ    | 26  | SER  |
| 32  | AZ    | 30  | HIS  |
| 32  | AZ    | 35  | ASP  |
| 32  | AZ    | 50  | ASP  |
| 34  | BB    | 19  | THR  |
| 34  | BB    | 22  | TRP  |
| 34  | BB    | 75  | ALA  |
| 34  | BB    | 87  | ASP  |
| 34  | BB    | 100 | LEU  |
| 34  | BB    | 150 | ILE  |
| 34  | BB    | 165 | ALA  |
| 35  | BC    | 54  | ILE  |
| 35  | BC    | 81  | GLU  |
| 35  | BC    | 132 | ALA  |
| 35  | BC    | 133 | MET  |
| 35  | BC    | 134 | LYS  |
| 36  | BD    | 4   | LEU  |
| 36  | BD    | 14  | GLU  |
| 36  | BD    | 16  | THR  |
| 36  | BD    | 27  | ILE  |
| 36  | BD    | 32  | LYS  |
| 36  | BD    | 105 | GLY  |
| 36  | BD    | 143 | SER  |
| 36  | BD    | 151 | GLN  |
| 36  | BD    | 188 | SER  |
| 36  | BD    | 191 | SER  |
| 37  | BE    | 20  | VAL  |
| 37  | BE    | 69  | ASN  |
| 37  | BE    | 77  | ASN  |
| 37  | BE    | 128 | GLY  |
| 37  | BE    | 150 | GLU  |
| 38  | BF    | 54  | LEU  |
| 38  | BF    | 92  | THR  |
| 38  | BF    | 100 | SER  |
| 39  | BG    | 3   | ARG  |
| 39  | BG    | 76  | SER  |
| 40  | BH    | 65  | PHE  |
| 40  | BH    | 66  | GLN  |
| 40  | BH    | 74  | ILE  |
| 40  | BH    | 95  | MET  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 41  | BI    | 8   | THR  |
| 41  | BI    | 71  | ILE  |
| 41  | BI    | 106 | ASP  |
| 41  | BI    | 120 | ALA  |
| 42  | BJ    | 53  | ILE  |
| 42  | BJ    | 56  | HIS  |
| 42  | BJ    | 57  | VAL  |
| 43  | BK    | 13  | LYS  |
| 43  | BK    | 72  | ALA  |
| 43  | BK    | 106 | ILE  |
| 43  | BK    | 125 | LYS  |
| 44  | BL    | 77  | SER  |
| 44  | BL    | 103 | CYS  |
| 45  | BM    | 81  | ASP  |
| 45  | BM    | 104 | ASN  |
| 46  | BN    | 3   | GLN  |
| 46  | BN    | 52  | ARG  |
| 46  | BN    | 80  | ARG  |
| 46  | BN    | 97  | LYS  |
| 46  | BN    | 98  | ALA  |
| 47  | BO    | 73  | ASP  |
| 48  | BP    | 28  | ARG  |
| 48  | BP    | 45  | GLU  |
| 49  | BQ    | 6   | THR  |
| 49  | BQ    | 35  | LYS  |
| 49  | BQ    | 81  | ALA  |
| 51  | BS    | 54  | ARG  |
| 52  | BT    | 5   | SER  |
| 52  | BT    | 76  | ALA  |
| 53  | BU    | 6   | ARG  |
| 53  | BU    | 12  | ASP  |
| 53  | BU    | 13  | VAL  |
| 53  | BU    | 32  | ARG  |
| 1   | C0    | 23  | ALA  |
| 1   | C0    | 29  | VAL  |
| 1   | C0    | 30  | ASP  |
| 1   | C0    | 36  | LYS  |
| 1   | C0    | 53  | VAL  |
| 2   | C1    | 20  | TYR  |
| 2   | C1    | 29  | LYS  |
| 2   | C1    | 45  | HIS  |
| 2   | C1    | 46  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | C1    | 47  | ILE  |
| 3   | C2    | 36  | ALA  |
| 3   | C2    | 37  | LYS  |
| 3   | C2    | 40  | ALA  |
| 4   | C3    | 14  | LYS  |
| 4   | C3    | 33  | THR  |
| 4   | C3    | 49  | VAL  |
| 4   | C3    | 53  | ASP  |
| 4   | C3    | 60  | CYS  |
| 5   | C4    | 3   | VAL  |
| 5   | C4    | 4   | ARG  |
| 5   | C4    | 5   | ALA  |
| 5   | C4    | 8   | LYS  |
| 5   | C4    | 17  | VAL  |
| 5   | C4    | 19  | ARG  |
| 5   | C4    | 23  | ILE  |
| 5   | C4    | 26  | ILE  |
| 5   | C4    | 28  | SER  |
| 5   | C4    | 33  | HIS  |
| 9   | CC    | 12  | ARG  |
| 9   | CC    | 21  | PRO  |
| 9   | CC    | 22  | GLU  |
| 9   | CC    | 25  | LYS  |
| 9   | CC    | 32  | LEU  |
| 9   | CC    | 33  | LEU  |
| 9   | CC    | 42  | ARG  |
| 9   | CC    | 45  | ASN  |
| 9   | CC    | 47  | ARG  |
| 9   | CC    | 48  | ILE  |
| 9   | CC    | 51  | ARG  |
| 9   | CC    | 53  | ILE  |
| 9   | CC    | 60  | ALA  |
| 9   | CC    | 61  | TYR  |
| 9   | CC    | 65  | ASP  |
| 9   | CC    | 79  | ARG  |
| 9   | CC    | 88  | ALA  |
| 9   | CC    | 92  | LEU  |
| 9   | CC    | 103 | ILE  |
| 9   | CC    | 107 | LYS  |
| 9   | CC    | 110 | LYS  |
| 9   | CC    | 122 | ALA  |
| 9   | CC    | 124 | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | CC    | 135 | PRO  |
| 9   | CC    | 142 | ASN  |
| 9   | CC    | 149 | LYS  |
| 9   | CC    | 163 | ILE  |
| 9   | CC    | 165 | ALA  |
| 9   | CC    | 170 | TYR  |
| 9   | CC    | 171 | VAL  |
| 9   | CC    | 172 | THR  |
| 9   | CC    | 173 | LEU  |
| 9   | CC    | 194 | VAL  |
| 9   | CC    | 207 | ALA  |
| 9   | CC    | 216 | ARG  |
| 9   | CC    | 217 | PRO  |
| 9   | CC    | 219 | VAL  |
| 9   | CC    | 221 | GLY  |
| 9   | CC    | 243 | PRO  |
| 9   | CC    | 246 | PRO  |
| 9   | CC    | 257 | ARG  |
| 9   | CC    | 265 | PHE  |
| 9   | CC    | 266 | ILE  |
| 10  | CD    | 3   | GLY  |
| 10  | CD    | 4   | LEU  |
| 10  | CD    | 7   | LYS  |
| 10  | CD    | 9   | VAL  |
| 10  | CD    | 17  | GLU  |
| 10  | CD    | 18  | ASP  |
| 10  | CD    | 30  | GLU  |
| 10  | CD    | 32  | ASN  |
| 10  | CD    | 33  | ARG  |
| 10  | CD    | 34  | VAL  |
| 10  | CD    | 42  | ASN  |
| 10  | CD    | 47  | ALA  |
| 10  | CD    | 50  | VAL  |
| 10  | CD    | 64  | GLU  |
| 10  | CD    | 82  | PHE  |
| 10  | CD    | 85  | ALA  |
| 10  | CD    | 89  | GLU  |
| 10  | CD    | 126 | ASN  |
| 10  | CD    | 132 | ALA  |
| 10  | CD    | 140 | HIS  |
| 10  | CD    | 141 | ARG  |
| 10  | CD    | 142 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10  | CD    | 148 | GLN  |
| 10  | CD    | 152 | PRO  |
| 10  | CD    | 153 | GLY  |
| 10  | CD    | 160 | LYS  |
| 10  | CD    | 175 | LEU  |
| 10  | CD    | 181 | ASP  |
| 10  | CD    | 182 | ALA  |
| 10  | CD    | 190 | LYS  |
| 10  | CD    | 192 | ALA  |
| 10  | CD    | 199 | SER  |
| 11  | CE    | 3   | LEU  |
| 11  | CE    | 13  | THR  |
| 11  | CE    | 16  | GLU  |
| 11  | CE    | 26  | ALA  |
| 11  | CE    | 41  | GLN  |
| 11  | CE    | 43  | THR  |
| 11  | CE    | 48  | THR  |
| 11  | CE    | 50  | ALA  |
| 11  | CE    | 51  | GLU  |
| 11  | CE    | 58  | LYS  |
| 11  | CE    | 59  | PRO  |
| 11  | CE    | 69  | ARG  |
| 11  | CE    | 80  | SER  |
| 11  | CE    | 84  | THR  |
| 11  | CE    | 97  | ASN  |
| 11  | CE    | 104 | ALA  |
| 11  | CE    | 113 | VAL  |
| 11  | CE    | 118 | LEU  |
| 11  | CE    | 122 | GLU  |
| 11  | CE    | 135 | ALA  |
| 11  | CE    | 146 | VAL  |
| 11  | CE    | 168 | ASP  |
| 11  | CE    | 169 | VAL  |
| 11  | CE    | 175 | ILE  |
| 11  | CE    | 199 | MET  |
| 12  | CF    | 3   | LEU  |
| 12  | CF    | 8   | LYS  |
| 12  | CF    | 19  | PHE  |
| 12  | CF    | 34  | THR  |
| 12  | CF    | 39  | VAL  |
| 12  | CF    | 66  | ILE  |
| 12  | CF    | 67  | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12  | CF    | 73  | VAL  |
| 12  | CF    | 74  | ALA  |
| 12  | CF    | 77  | LYS  |
| 12  | CF    | 83  | PRO  |
| 12  | CF    | 133 | GLU  |
| 12  | CF    | 134 | GLN  |
| 12  | CF    | 153 | ILE  |
| 12  | CF    | 176 | PHE  |
| 13  | CG    | 3   | VAL  |
| 13  | CG    | 4   | ALA  |
| 13  | CG    | 5   | LYS  |
| 13  | CG    | 11  | PRO  |
| 13  | CG    | 24  | THR  |
| 13  | CG    | 29  | ASN  |
| 13  | CG    | 37  | ASN  |
| 13  | CG    | 109 | SER  |
| 13  | CG    | 118 | ALA  |
| 13  | CG    | 125 | PRO  |
| 13  | CG    | 151 | ARG  |
| 13  | CG    | 159 | LYS  |
| 13  | CG    | 165 | ASP  |
| 13  | CG    | 166 | GLU  |
| 14  | CH    | 10  | ALA  |
| 14  | CH    | 14  | SER  |
| 14  | CH    | 23  | ALA  |
| 14  | CH    | 25  | TYR  |
| 14  | CH    | 32  | PRO  |
| 14  | CH    | 37  | VAL  |
| 14  | CH    | 38  | PRO  |
| 14  | CH    | 39  | ALA  |
| 14  | CH    | 96  | THR  |
| 14  | CH    | 112 | LYS  |
| 14  | CH    | 113 | SER  |
| 14  | CH    | 115 | VAL  |
| 15  | CI    | 13  | ALA  |
| 15  | CI    | 18  | ASN  |
| 15  | CI    | 19  | PRO  |
| 15  | CI    | 22  | PRO  |
| 15  | CI    | 101 | SER  |
| 16  | CJ    | 3   | THR  |
| 16  | CJ    | 9   | GLU  |
| 16  | CJ    | 11  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16  | CJ    | 23  | LYS  |
| 16  | CJ    | 25  | LEU  |
| 16  | CJ    | 41  | LYS  |
| 16  | CJ    | 58  | ASN  |
| 16  | CJ    | 63  | ALA  |
| 16  | CJ    | 81  | ILE  |
| 16  | CJ    | 84  | ILE  |
| 16  | CJ    | 110 | PRO  |
| 16  | CJ    | 128 | ASN  |
| 16  | CJ    | 129 | GLU  |
| 17  | CK    | 16  | ALA  |
| 17  | CK    | 17  | ARG  |
| 17  | CK    | 35  | VAL  |
| 17  | CK    | 72  | PRO  |
| 17  | CK    | 92  | GLU  |
| 17  | CK    | 122 | VAL  |
| 18  | CL    | 7   | SER  |
| 18  | CL    | 14  | LYS  |
| 18  | CL    | 15  | ALA  |
| 18  | CL    | 17  | LYS  |
| 18  | CL    | 38  | GLN  |
| 18  | CL    | 40  | SER  |
| 18  | CL    | 55  | MET  |
| 18  | CL    | 72  | ALA  |
| 18  | CL    | 77  | ILE  |
| 18  | CL    | 82  | LEU  |
| 18  | CL    | 84  | LYS  |
| 18  | CL    | 86  | GLU  |
| 18  | CL    | 92  | LEU  |
| 18  | CL    | 93  | ASN  |
| 18  | CL    | 111 | ILE  |
| 18  | CL    | 116 | VAL  |
| 18  | CL    | 118 | THR  |
| 18  | CL    | 120 | VAL  |
| 19  | CM    | 3   | GLN  |
| 19  | CM    | 5   | LYS  |
| 19  | CM    | 7   | THR  |
| 19  | CM    | 12  | MET  |
| 19  | CM    | 17  | ASN  |
| 19  | CM    | 31  | PHE  |
| 19  | CM    | 33  | LEU  |
| 19  | CM    | 67  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 19  | CM    | 77  | PRO  |
| 19  | CM    | 80  | VAL  |
| 19  | CM    | 89  | VAL  |
| 19  | CM    | 92  | TRP  |
| 19  | CM    | 127 | LYS  |
| 19  | CM    | 134 | THR  |
| 20  | CN    | 12  | ARG  |
| 20  | CN    | 56  | LYS  |
| 20  | CN    | 68  | ALA  |
| 20  | CN    | 72  | ASP  |
| 20  | CN    | 74  | GLU  |
| 20  | CN    | 86  | ARG  |
| 20  | CN    | 91  | ALA  |
| 20  | CN    | 111 | ALA  |
| 20  | CN    | 122 | ALA  |
| 21  | CO    | 11  | ALA  |
| 21  | CO    | 21  | LEU  |
| 21  | CO    | 27  | VAL  |
| 21  | CO    | 41  | ALA  |
| 21  | CO    | 54  | VAL  |
| 21  | CO    | 61  | GLN  |
| 21  | CO    | 63  | LYS  |
| 21  | CO    | 64  | TYR  |
| 21  | CO    | 84  | GLU  |
| 21  | CO    | 90  | VAL  |
| 21  | CO    | 107 | ALA  |
| 22  | CP    | 23  | ASP  |
| 22  | CP    | 42  | PHE  |
| 22  | CP    | 49  | ILE  |
| 22  | CP    | 60  | VAL  |
| 22  | CP    | 71  | ARG  |
| 22  | CP    | 77  | SER  |
| 22  | CP    | 79  | VAL  |
| 22  | CP    | 80  | VAL  |
| 22  | CP    | 92  | ARG  |
| 22  | CP    | 97  | TYR  |
| 22  | CP    | 105 | LYS  |
| 23  | CQ    | 9   | ALA  |
| 23  | CQ    | 30  | VAL  |
| 23  | CQ    | 41  | ALA  |
| 23  | CQ    | 46  | TYR  |
| 23  | CQ    | 54  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 23  | CQ    | 73  | ILE  |
| 23  | CQ    | 86  | SER  |
| 23  | CQ    | 89  | ILE  |
| 23  | CQ    | 93  | ILE  |
| 23  | CQ    | 114 | ALA  |
| 24  | CR    | 2   | TYR  |
| 24  | CR    | 4   | VAL  |
| 24  | CR    | 5   | PHE  |
| 24  | CR    | 11  | GLN  |
| 24  | CR    | 22  | LEU  |
| 24  | CR    | 27  | ILE  |
| 24  | CR    | 32  | THR  |
| 24  | CR    | 33  | VAL  |
| 24  | CR    | 37  | GLU  |
| 24  | CR    | 51  | VAL  |
| 24  | CR    | 59  | ILE  |
| 24  | CR    | 71  | LYS  |
| 24  | CR    | 75  | VAL  |
| 24  | CR    | 77  | PHE  |
| 24  | CR    | 80  | ARG  |
| 24  | CR    | 81  | LYS  |
| 24  | CR    | 85  | LYS  |
| 24  | CR    | 97  | LYS  |
| 24  | CR    | 102 | SER  |
| 25  | CS    | 3   | THR  |
| 25  | CS    | 8   | ARG  |
| 25  | CS    | 12  | SER  |
| 25  | CS    | 19  | LEU  |
| 25  | CS    | 20  | VAL  |
| 25  | CS    | 29  | VAL  |
| 25  | CS    | 41  | LYS  |
| 25  | CS    | 64  | ALA  |
| 25  | CS    | 92  | ARG  |
| 25  | CS    | 96  | ILE  |
| 25  | CS    | 99  | ARG  |
| 25  | CS    | 104 | THR  |
| 25  | CS    | 109 | ASP  |
| 26  | CT    | 6   | ARG  |
| 26  | CT    | 7   | LEU  |
| 26  | CT    | 12  | ARG  |
| 26  | CT    | 17  | SER  |
| 26  | CT    | 63  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 26  | CT    | 66  | LYS  |
| 26  | CT    | 71  | GLY  |
| 26  | CT    | 85  | VAL  |
| 26  | CT    | 95  | PHE  |
| 27  | CU    | 2   | ALA  |
| 27  | CU    | 4   | ILE  |
| 27  | CU    | 24  | VAL  |
| 27  | CU    | 25  | LYS  |
| 27  | CU    | 26  | ASN  |
| 27  | CU    | 35  | VAL  |
| 27  | CU    | 36  | GLU  |
| 27  | CU    | 40  | LEU  |
| 27  | CU    | 41  | VAL  |
| 27  | CU    | 50  | ALA  |
| 27  | CU    | 63  | ALA  |
| 27  | CU    | 66  | VAL  |
| 27  | CU    | 71  | ILE  |
| 27  | CU    | 75  | ALA  |
| 27  | CU    | 94  | PHE  |
| 27  | CU    | 97  | SER  |
| 27  | CU    | 99  | SER  |
| 27  | CU    | 101 | THR  |
| 28  | CV    | 14  | LYS  |
| 28  | CV    | 38  | LEU  |
| 29  | CW    | 14  | ASP  |
| 29  | CW    | 32  | ALA  |
| 29  | CW    | 44  | PHE  |
| 29  | CW    | 48  | ALA  |
| 29  | CW    | 58  | LEU  |
| 29  | CW    | 61  | LYS  |
| 29  | CW    | 66  | VAL  |
| 29  | CW    | 67  | LYS  |
| 29  | CW    | 72  | GLY  |
| 29  | CW    | 77  | LYS  |
| 29  | CW    | 80  | SER  |
| 30  | CX    | 30  | MET  |
| 30  | CX    | 31  | GLN  |
| 30  | CX    | 49  | ASP  |
| 31  | CY    | 9   | THR  |
| 31  | CY    | 12  | ALA  |
| 31  | CY    | 51  | SER  |
| 31  | CY    | 53  | MET  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 31  | CY    | 57  | GLU  |
| 32  | CZ    | 4   | ASP  |
| 32  | CZ    | 22  | MET  |
| 32  | CZ    | 50  | ASP  |
| 34  | DB    | 11  | ALA  |
| 34  | DB    | 15  | PHE  |
| 34  | DB    | 73  | ARG  |
| 34  | DB    | 86  | CYS  |
| 34  | DB    | 88  | GLN  |
| 34  | DB    | 94  | ARG  |
| 34  | DB    | 128 | LEU  |
| 34  | DB    | 132 | GLU  |
| 34  | DB    | 169 | HIS  |
| 34  | DB    | 170 | ILE  |
| 35  | DC    | 7   | ASN  |
| 35  | DC    | 15  | LYS  |
| 35  | DC    | 54  | ILE  |
| 35  | DC    | 153 | SER  |
| 35  | DC    | 203 | LYS  |
| 36  | DD    | 26  | ALA  |
| 36  | DD    | 27  | ILE  |
| 36  | DD    | 33  | ILE  |
| 36  | DD    | 82  | LYS  |
| 36  | DD    | 115 | GLN  |
| 36  | DD    | 121 | ALA  |
| 36  | DD    | 139 | ASN  |
| 36  | DD    | 143 | SER  |
| 36  | DD    | 165 | GLU  |
| 36  | DD    | 191 | SER  |
| 36  | DD    | 204 | SER  |
| 37  | DE    | 42  | ASN  |
| 37  | DE    | 82  | HIS  |
| 37  | DE    | 88  | HIS  |
| 37  | DE    | 89  | THR  |
| 37  | DE    | 107 | GLY  |
| 37  | DE    | 144 | GLU  |
| 38  | DF    | 12  | PRO  |
| 38  | DF    | 39  | LEU  |
| 38  | DF    | 40  | GLU  |
| 38  | DF    | 54  | LEU  |
| 38  | DF    | 86  | ARG  |
| 38  | DF    | 95  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 38  | DF    | 99  | ALA  |
| 39  | DG    | 19  | SER  |
| 40  | DH    | 22  | ALA  |
| 40  | DH    | 24  | VAL  |
| 40  | DH    | 33  | VAL  |
| 40  | DH    | 47  | ASP  |
| 40  | DH    | 77  | VAL  |
| 40  | DH    | 82  | LEU  |
| 40  | DH    | 94  | VAL  |
| 40  | DH    | 105 | THR  |
| 41  | DI    | 8   | THR  |
| 41  | DI    | 37  | TYR  |
| 41  | DI    | 42  | THR  |
| 41  | DI    | 55  | ASP  |
| 41  | DI    | 57  | VAL  |
| 41  | DI    | 107 | ALA  |
| 41  | DI    | 108 | ARG  |
| 42  | DJ    | 42  | LEU  |
| 42  | DJ    | 57  | VAL  |
| 43  | DK    | 15  | VAL  |
| 43  | DK    | 109 | ILE  |
| 44  | DL    | 75  | GLU  |
| 44  | DL    | 98  | ARG  |
| 44  | DL    | 101 | LEU  |
| 44  | DL    | 111 | GLN  |
| 45  | DM    | 3   | ILE  |
| 45  | DM    | 22  | TYR  |
| 45  | DM    | 65  | GLU  |
| 45  | DM    | 102 | LYS  |
| 46  | DN    | 3   | GLN  |
| 46  | DN    | 29  | ILE  |
| 46  | DN    | 31  | SER  |
| 46  | DN    | 50  | LEU  |
| 46  | DN    | 70  | HIS  |
| 47  | DO    | 73  | ASP  |
| 48  | DP    | 7   | ALA  |
| 48  | DP    | 33  | ILE  |
| 48  | DP    | 42  | ILE  |
| 48  | DP    | 67  | ILE  |
| 48  | DP    | 80  | LYS  |
| 49  | DQ    | 6   | THR  |
| 49  | DQ    | 35  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 49  | DQ    | 56  | ASP  |
| 49  | DQ    | 81  | ALA  |
| 50  | DR    | 33  | THR  |
| 51  | DS    | 2   | ARG  |
| 51  | DS    | 62  | THR  |
| 51  | DS    | 69  | LYS  |
| 52  | DT    | 4   | LYS  |
| 53  | DU    | 13  | VAL  |
| 53  | DU    | 23  | GLU  |
| 1   | A0    | 7   | PRO  |
| 1   | A0    | 17  | SER  |
| 1   | A0    | 24  | VAL  |
| 1   | A0    | 37  | HIS  |
| 2   | A1    | 16  | THR  |
| 2   | A1    | 18  | HIS  |
| 2   | A1    | 40  | PRO  |
| 2   | A1    | 43  | ARG  |
| 2   | A1    | 48  | TYR  |
| 3   | A2    | 29  | GLN  |
| 3   | A2    | 35  | ARG  |
| 3   | A2    | 43  | THR  |
| 4   | A3    | 5   | THR  |
| 4   | A3    | 29  | ARG  |
| 4   | A3    | 32  | LEU  |
| 4   | A3    | 34  | LYS  |
| 4   | A3    | 52  | GLY  |
| 4   | A3    | 55  | GLY  |
| 4   | A3    | 57  | VAL  |
| 4   | A3    | 59  | ALA  |
| 5   | A4    | 3   | VAL  |
| 5   | A4    | 6   | SER  |
| 9   | AC    | 16  | VAL  |
| 9   | AC    | 31  | PRO  |
| 9   | AC    | 46  | GLY  |
| 9   | AC    | 54  | GLY  |
| 9   | AC    | 67  | LYS  |
| 9   | AC    | 93  | VAL  |
| 9   | AC    | 122 | ALA  |
| 9   | AC    | 137 | GLY  |
| 9   | AC    | 141 | HIS  |
| 9   | AC    | 179 | GLU  |
| 9   | AC    | 196 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AC    | 204 | LEU  |
| 9   | AC    | 207 | ALA  |
| 9   | AC    | 209 | ALA  |
| 9   | AC    | 259 | ASN  |
| 10  | AD    | 21  | SER  |
| 10  | AD    | 33  | ARG  |
| 10  | AD    | 48  | ILE  |
| 10  | AD    | 53  | GLY  |
| 10  | AD    | 57  | ALA  |
| 10  | AD    | 71  | ALA  |
| 10  | AD    | 76  | GLY  |
| 10  | AD    | 92  | VAL  |
| 10  | AD    | 98  | VAL  |
| 10  | AD    | 102 | ALA  |
| 10  | AD    | 109 | VAL  |
| 10  | AD    | 127 | PHE  |
| 10  | AD    | 130 | GLN  |
| 10  | AD    | 136 | ASN  |
| 10  | AD    | 154 | LYS  |
| 10  | AD    | 155 | VAL  |
| 10  | AD    | 160 | LYS  |
| 10  | AD    | 162 | ALA  |
| 10  | AD    | 173 | GLN  |
| 10  | AD    | 174 | SER  |
| 10  | AD    | 178 | VAL  |
| 10  | AD    | 205 | PRO  |
| 11  | AE    | 2   | GLU  |
| 11  | AE    | 8   | ALA  |
| 11  | AE    | 17  | THR  |
| 11  | AE    | 21  | ARG  |
| 11  | AE    | 26  | ALA  |
| 11  | AE    | 48  | THR  |
| 11  | AE    | 52  | VAL  |
| 11  | AE    | 54  | GLY  |
| 11  | AE    | 59  | PRO  |
| 11  | AE    | 89  | PRO  |
| 11  | AE    | 97  | ASN  |
| 11  | AE    | 113 | VAL  |
| 11  | AE    | 170 | ARG  |
| 11  | AE    | 172 | ALA  |
| 11  | AE    | 173 | THR  |
| 11  | AE    | 178 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12  | AF    | 9   | ASP  |
| 12  | AF    | 33  | ILE  |
| 12  | AF    | 46  | LYS  |
| 12  | AF    | 74  | ALA  |
| 12  | AF    | 84  | ILE  |
| 12  | AF    | 138 | PRO  |
| 12  | AF    | 148 | VAL  |
| 12  | AF    | 150 | GLY  |
| 13  | AG    | 19  | ASN  |
| 13  | AG    | 26  | LYS  |
| 13  | AG    | 36  | LEU  |
| 13  | AG    | 42  | VAL  |
| 13  | AG    | 92  | GLY  |
| 13  | AG    | 109 | SER  |
| 13  | AG    | 111 | PRO  |
| 13  | AG    | 118 | ALA  |
| 13  | AG    | 153 | PRO  |
| 13  | AG    | 159 | LYS  |
| 13  | AG    | 161 | VAL  |
| 14  | AH    | 27  | ARG  |
| 14  | AH    | 118 | PRO  |
| 15  | AI    | 2   | LYS  |
| 15  | AI    | 23  | VAL  |
| 15  | AI    | 62  | ALA  |
| 15  | AI    | 88  | GLY  |
| 16  | AJ    | 3   | THR  |
| 16  | AJ    | 8   | PRO  |
| 16  | AJ    | 26  | GLY  |
| 16  | AJ    | 30  | THR  |
| 16  | AJ    | 40  | HIS  |
| 16  | AJ    | 46  | PRO  |
| 16  | AJ    | 48  | VAL  |
| 16  | AJ    | 62  | VAL  |
| 16  | AJ    | 65  | THR  |
| 16  | AJ    | 116 | ARG  |
| 17  | AK    | 3   | GLN  |
| 17  | AK    | 4   | GLU  |
| 17  | AK    | 85  | VAL  |
| 17  | AK    | 89  | ASN  |
| 18  | AL    | 8   | PRO  |
| 18  | AL    | 26  | GLY  |
| 18  | AL    | 38  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 18  | AL    | 39  | LYS  |
| 18  | AL    | 57  | LEU  |
| 18  | AL    | 71  | ALA  |
| 18  | AL    | 77  | ILE  |
| 18  | AL    | 83  | ALA  |
| 18  | AL    | 89  | VAL  |
| 18  | AL    | 99  | ASN  |
| 18  | AL    | 104 | GLN  |
| 18  | AL    | 105 | ILE  |
| 18  | AL    | 117 | THR  |
| 18  | AL    | 125 | LEU  |
| 18  | AL    | 138 | ALA  |
| 18  | AL    | 142 | ILE  |
| 19  | AM    | 2   | LEU  |
| 19  | AM    | 21  | ALA  |
| 19  | AM    | 26  | VAL  |
| 19  | AM    | 43  | ALA  |
| 19  | AM    | 57  | VAL  |
| 19  | AM    | 69  | PRO  |
| 19  | AM    | 80  | VAL  |
| 19  | AM    | 84  | LYS  |
| 19  | AM    | 101 | VAL  |
| 19  | AM    | 126 | ILE  |
| 20  | AN    | 11  | ASN  |
| 20  | AN    | 17  | ARG  |
| 20  | AN    | 46  | ARG  |
| 20  | AN    | 56  | LYS  |
| 20  | AN    | 93  | GLY  |
| 20  | AN    | 111 | ALA  |
| 21  | AO    | 6   | ALA  |
| 21  | AO    | 22  | GLY  |
| 21  | AO    | 27  | VAL  |
| 21  | AO    | 48  | LEU  |
| 21  | AO    | 49  | VAL  |
| 21  | AO    | 78  | VAL  |
| 21  | AO    | 87  | ILE  |
| 21  | AO    | 101 | GLY  |
| 22  | AP    | 8   | GLU  |
| 22  | AP    | 15  | ASP  |
| 22  | AP    | 17  | PRO  |
| 22  | AP    | 18  | SER  |
| 22  | AP    | 26  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 22  | AP    | 38  | ARG  |
| 22  | AP    | 39  | LEU  |
| 22  | AP    | 52  | ARG  |
| 22  | AP    | 55  | HIS  |
| 22  | AP    | 83  | ILE  |
| 22  | AP    | 110 | LYS  |
| 23  | AQ    | 4   | LYS  |
| 23  | AQ    | 30  | VAL  |
| 23  | AQ    | 36  | GLN  |
| 23  | AQ    | 42  | GLY  |
| 23  | AQ    | 73  | ILE  |
| 23  | AQ    | 98  | ALA  |
| 23  | AQ    | 102 | LYS  |
| 24  | AR    | 4   | VAL  |
| 24  | AR    | 18  | GLN  |
| 24  | AR    | 25  | LEU  |
| 24  | AR    | 42  | ALA  |
| 24  | AR    | 54  | VAL  |
| 24  | AR    | 65  | ALA  |
| 24  | AR    | 77  | PHE  |
| 24  | AR    | 84  | ARG  |
| 25  | AS    | 32  | ALA  |
| 25  | AS    | 87  | PRO  |
| 26  | AT    | 5   | GLU  |
| 26  | AT    | 11  | LEU  |
| 26  | AT    | 16  | VAL  |
| 26  | AT    | 62  | VAL  |
| 26  | AT    | 89  | GLU  |
| 27  | AU    | 31  | GLY  |
| 27  | AU    | 54  | PRO  |
| 27  | AU    | 58  | VAL  |
| 27  | AU    | 94  | PHE  |
| 27  | AU    | 97  | SER  |
| 28  | AV    | 15  | GLY  |
| 28  | AV    | 36  | ALA  |
| 28  | AV    | 44  | HIS  |
| 29  | AW    | 14  | ASP  |
| 29  | AW    | 20  | LEU  |
| 29  | AW    | 37  | VAL  |
| 29  | AW    | 42  | THR  |
| 29  | AW    | 44  | PHE  |
| 29  | AW    | 46  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | AW    | 47  | GLY  |
| 29  | AW    | 57  | THR  |
| 29  | AW    | 63  | ASP  |
| 29  | AW    | 69  | GLU  |
| 29  | AW    | 75  | ASN  |
| 29  | AW    | 76  | ARG  |
| 30  | AX    | 5   | GLU  |
| 30  | AX    | 36  | GLN  |
| 30  | AX    | 38  | GLN  |
| 30  | AX    | 41  | HIS  |
| 31  | AY    | 17  | PRO  |
| 31  | AY    | 30  | ARG  |
| 31  | AY    | 51  | SER  |
| 32  | AZ    | 31  | ASP  |
| 32  | AZ    | 34  | LEU  |
| 32  | AZ    | 40  | CYS  |
| 34  | BB    | 10  | LYS  |
| 34  | BB    | 35  | ASN  |
| 34  | BB    | 78  | ALA  |
| 34  | BB    | 153 | MET  |
| 34  | BB    | 205 | ALA  |
| 35  | BC    | 18  | ASN  |
| 35  | BC    | 28  | PHE  |
| 35  | BC    | 60  | ALA  |
| 35  | BC    | 91  | ALA  |
| 35  | BC    | 112 | ALA  |
| 35  | BC    | 153 | SER  |
| 36  | BD    | 25  | ARG  |
| 36  | BD    | 29  | THR  |
| 36  | BD    | 41  | GLY  |
| 36  | BD    | 56  | GLU  |
| 37  | BE    | 62  | ALA  |
| 37  | BE    | 73  | VAL  |
| 37  | BE    | 151 | MET  |
| 38  | BF    | 12  | PRO  |
| 38  | BF    | 64  | VAL  |
| 39  | BG    | 16  | LYS  |
| 39  | BG    | 41  | ILE  |
| 40  | BH    | 78  | SER  |
| 40  | BH    | 107 | LYS  |
| 41  | BI    | 54  | VAL  |
| 42  | BJ    | 36  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 42  | BJ    | 74  | VAL  |
| 42  | BJ    | 92  | LEU  |
| 43  | BK    | 37  | GLN  |
| 43  | BK    | 46  | ALA  |
| 43  | BK    | 50  | GLY  |
| 43  | BK    | 118 | ASN  |
| 43  | BK    | 126 | ARG  |
| 44  | BL    | 43  | LYS  |
| 44  | BL    | 96  | THR  |
| 44  | BL    | 102 | ASP  |
| 44  | BL    | 121 | PRO  |
| 45  | BM    | 3   | ILE  |
| 45  | BM    | 7   | ASN  |
| 45  | BM    | 44  | ILE  |
| 46  | BN    | 33  | VAL  |
| 47  | BO    | 23  | SER  |
| 47  | BO    | 28  | VAL  |
| 48  | BP    | 17  | TYR  |
| 48  | BP    | 24  | SER  |
| 48  | BP    | 26  | ASN  |
| 48  | BP    | 47  | GLU  |
| 48  | BP    | 65  | ALA  |
| 49  | BQ    | 4   | ILE  |
| 49  | BQ    | 47  | ASP  |
| 49  | BQ    | 56  | ASP  |
| 50  | BR    | 32  | ILE  |
| 50  | BR    | 42  | ARG  |
| 50  | BR    | 43  | ILE  |
| 50  | BR    | 45  | GLY  |
| 50  | BR    | 73  | HIS  |
| 51  | BS    | 3   | SER  |
| 52  | BT    | 6   | ALA  |
| 52  | BT    | 41  | GLY  |
| 52  | BT    | 68  | LYS  |
| 53  | BU    | 23  | GLU  |
| 53  | BU    | 33  | ARG  |
| 1   | C0    | 7   | PRO  |
| 1   | C0    | 17  | SER  |
| 1   | C0    | 19  | ASP  |
| 1   | C0    | 37  | HIS  |
| 1   | C0    | 48  | TYR  |
| 2   | C1    | 18  | HIS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | C1    | 40  | PRO  |
| 2   | C1    | 48  | TYR  |
| 2   | C1    | 53  | ILE  |
| 3   | C2    | 17  | GLY  |
| 3   | C2    | 29  | GLN  |
| 4   | C3    | 5   | THR  |
| 4   | C3    | 13  | PHE  |
| 4   | C3    | 32  | LEU  |
| 4   | C3    | 45  | PRO  |
| 4   | C3    | 55  | GLY  |
| 5   | C4    | 37  | GLN  |
| 9   | CC    | 19  | VAL  |
| 9   | CC    | 31  | PRO  |
| 9   | CC    | 46  | GLY  |
| 9   | CC    | 54  | GLY  |
| 9   | CC    | 67  | LYS  |
| 9   | CC    | 93  | VAL  |
| 9   | CC    | 113 | ASP  |
| 9   | CC    | 137 | GLY  |
| 9   | CC    | 141 | HIS  |
| 9   | CC    | 143 | VAL  |
| 9   | CC    | 179 | GLU  |
| 9   | CC    | 196 | ASN  |
| 9   | CC    | 204 | LEU  |
| 9   | CC    | 255 | LYS  |
| 9   | CC    | 260 | LYS  |
| 9   | CC    | 263 | ASP  |
| 10  | CD    | 21  | SER  |
| 10  | CD    | 54  | ALA  |
| 10  | CD    | 56  | LYS  |
| 10  | CD    | 69  | ALA  |
| 10  | CD    | 81  | GLU  |
| 10  | CD    | 84  | LEU  |
| 10  | CD    | 87  | GLY  |
| 10  | CD    | 109 | VAL  |
| 10  | CD    | 113 | SER  |
| 10  | CD    | 138 | LEU  |
| 10  | CD    | 145 | SER  |
| 10  | CD    | 147 | GLY  |
| 10  | CD    | 162 | ALA  |
| 10  | CD    | 173 | GLN  |
| 10  | CD    | 174 | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10  | CD    | 178 | VAL  |
| 10  | CD    | 205 | PRO  |
| 11  | CE    | 6   | LYS  |
| 11  | CE    | 8   | ALA  |
| 11  | CE    | 17  | THR  |
| 11  | CE    | 49  | ARG  |
| 11  | CE    | 53  | THR  |
| 11  | CE    | 89  | PRO  |
| 11  | CE    | 93  | SER  |
| 11  | CE    | 114 | ARG  |
| 11  | CE    | 116 | ASP  |
| 11  | CE    | 120 | VAL  |
| 11  | CE    | 140 | ASP  |
| 11  | CE    | 141 | MET  |
| 11  | CE    | 148 | ILE  |
| 11  | CE    | 155 | GLU  |
| 11  | CE    | 178 | VAL  |
| 12  | CF    | 9   | ASP  |
| 12  | CF    | 33  | ILE  |
| 12  | CF    | 46  | LYS  |
| 12  | CF    | 84  | ILE  |
| 12  | CF    | 138 | PRO  |
| 12  | CF    | 148 | VAL  |
| 12  | CF    | 150 | GLY  |
| 13  | CG    | 46  | ASP  |
| 13  | CG    | 68  | ARG  |
| 13  | CG    | 119 | GLY  |
| 13  | CG    | 140 | ILE  |
| 13  | CG    | 141 | GLY  |
| 14  | CH    | 9   | VAL  |
| 14  | CH    | 19  | VAL  |
| 14  | CH    | 29  | PHE  |
| 14  | CH    | 35  | LYS  |
| 14  | CH    | 75  | LEU  |
| 14  | CH    | 76  | GLU  |
| 14  | CH    | 100 | ALA  |
| 14  | CH    | 108 | VAL  |
| 14  | CH    | 120 | GLY  |
| 14  | CH    | 123 | ARG  |
| 14  | CH    | 147 | VAL  |
| 15  | CI    | 17  | ALA  |
| 15  | CI    | 83  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 15  | CI    | 88  | GLY  |
| 16  | CJ    | 8   | PRO  |
| 16  | CJ    | 26  | GLY  |
| 16  | CJ    | 30  | THR  |
| 16  | CJ    | 39  | LYS  |
| 16  | CJ    | 47  | HIS  |
| 16  | CJ    | 65  | THR  |
| 16  | CJ    | 116 | ARG  |
| 16  | CJ    | 131 | ASN  |
| 17  | CK    | 3   | GLN  |
| 17  | CK    | 4   | GLU  |
| 17  | CK    | 85  | VAL  |
| 17  | CK    | 89  | ASN  |
| 18  | CL    | 27  | LEU  |
| 18  | CL    | 33  | ARG  |
| 18  | CL    | 39  | LYS  |
| 18  | CL    | 44  | GLY  |
| 18  | CL    | 46  | VAL  |
| 18  | CL    | 56  | PRO  |
| 18  | CL    | 57  | LEU  |
| 18  | CL    | 58  | TYR  |
| 18  | CL    | 87  | GLY  |
| 18  | CL    | 103 | ILE  |
| 18  | CL    | 117 | THR  |
| 18  | CL    | 138 | ALA  |
| 18  | CL    | 142 | ILE  |
| 19  | CM    | 9   | PHE  |
| 19  | CM    | 14  | LYS  |
| 19  | CM    | 21  | ALA  |
| 19  | CM    | 26  | VAL  |
| 19  | CM    | 43  | ALA  |
| 19  | CM    | 58  | LYS  |
| 19  | CM    | 84  | LYS  |
| 19  | CM    | 101 | VAL  |
| 19  | CM    | 133 | LYS  |
| 20  | CN    | 11  | ASN  |
| 20  | CN    | 17  | ARG  |
| 20  | CN    | 46  | ARG  |
| 20  | CN    | 73  | ASN  |
| 20  | CN    | 93  | GLY  |
| 20  | CN    | 121 | LYS  |
| 21  | CO    | 7   | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 21  | CO    | 35  | ILE  |
| 21  | CO    | 38  | GLN  |
| 21  | CO    | 40  | ILE  |
| 21  | CO    | 87  | ILE  |
| 21  | CO    | 97  | PHE  |
| 21  | CO    | 100 | HIS  |
| 22  | CP    | 8   | GLU  |
| 22  | CP    | 15  | ASP  |
| 22  | CP    | 17  | PRO  |
| 22  | CP    | 18  | SER  |
| 22  | CP    | 26  | GLU  |
| 22  | CP    | 39  | LEU  |
| 22  | CP    | 55  | HIS  |
| 22  | CP    | 85  | VAL  |
| 22  | CP    | 96  | LEU  |
| 22  | CP    | 110 | LYS  |
| 23  | CQ    | 4   | LYS  |
| 23  | CQ    | 31  | TYR  |
| 23  | CQ    | 68  | ALA  |
| 23  | CQ    | 72  | GLY  |
| 23  | CQ    | 91  | ARG  |
| 23  | CQ    | 102 | LYS  |
| 24  | CR    | 7   | SER  |
| 24  | CR    | 50  | GLY  |
| 24  | CR    | 65  | ALA  |
| 24  | CR    | 78  | ARG  |
| 24  | CR    | 89  | HIS  |
| 24  | CR    | 98  | ILE  |
| 25  | CS    | 25  | ARG  |
| 25  | CS    | 54  | ALA  |
| 25  | CS    | 87  | PRO  |
| 25  | CS    | 90  | LYS  |
| 26  | CT    | 11  | LEU  |
| 26  | CT    | 16  | VAL  |
| 26  | CT    | 62  | VAL  |
| 27  | CU    | 39  | ASN  |
| 27  | CU    | 52  | ASN  |
| 27  | CU    | 55  | GLY  |
| 27  | CU    | 67  | SER  |
| 27  | CU    | 88  | ASP  |
| 28  | CV    | 15  | GLY  |
| 28  | CV    | 36  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 28  | CV    | 37  | PRO  |
| 28  | CV    | 44  | HIS  |
| 28  | CV    | 85  | LYS  |
| 29  | CW    | 4   | LYS  |
| 29  | CW    | 9   | THR  |
| 29  | CW    | 20  | LEU  |
| 29  | CW    | 36  | ILE  |
| 29  | CW    | 40  | ARG  |
| 29  | CW    | 45  | HIS  |
| 29  | CW    | 47  | GLY  |
| 29  | CW    | 51  | GLY  |
| 29  | CW    | 57  | THR  |
| 29  | CW    | 63  | ASP  |
| 29  | CW    | 69  | GLU  |
| 29  | CW    | 75  | ASN  |
| 30  | CX    | 27  | ASN  |
| 30  | CX    | 28  | LEU  |
| 30  | CX    | 48  | ARG  |
| 31  | CY    | 4   | ILE  |
| 31  | CY    | 30  | ARG  |
| 32  | CZ    | 9   | TYR  |
| 32  | CZ    | 40  | CYS  |
| 34  | DB    | 20  | ARG  |
| 34  | DB    | 103 | TRP  |
| 34  | DB    | 148 | GLY  |
| 34  | DB    | 150 | ILE  |
| 34  | DB    | 205 | ALA  |
| 35  | DC    | 18  | ASN  |
| 35  | DC    | 50  | SER  |
| 35  | DC    | 56  | ILE  |
| 35  | DC    | 75  | VAL  |
| 35  | DC    | 98  | ALA  |
| 35  | DC    | 100 | ILE  |
| 35  | DC    | 144 | GLY  |
| 35  | DC    | 167 | TYR  |
| 36  | DD    | 3   | TYR  |
| 36  | DD    | 4   | LEU  |
| 36  | DD    | 14  | GLU  |
| 36  | DD    | 88  | ASN  |
| 36  | DD    | 112 | GLU  |
| 36  | DD    | 146 | GLU  |
| 36  | DD    | 180 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36  | DD    | 192 | ALA  |
| 37  | DE    | 23  | THR  |
| 37  | DE    | 24  | VAL  |
| 37  | DE    | 149 | PRO  |
| 37  | DE    | 158 | LYS  |
| 38  | DF    | 41  | ASP  |
| 38  | DF    | 73  | GLU  |
| 38  | DF    | 81  | ASN  |
| 38  | DF    | 89  | VAL  |
| 38  | DF    | 94  | HIS  |
| 38  | DF    | 98  | GLU  |
| 39  | DG    | 10  | LYS  |
| 39  | DG    | 34  | LYS  |
| 39  | DG    | 84  | TYR  |
| 39  | DG    | 129 | ASN  |
| 40  | DH    | 32  | LYS  |
| 40  | DH    | 62  | LEU  |
| 40  | DH    | 90  | GLU  |
| 41  | DI    | 30  | ASN  |
| 41  | DI    | 44  | ARG  |
| 41  | DI    | 45  | MET  |
| 41  | DI    | 106 | ASP  |
| 41  | DI    | 127 | SER  |
| 42  | DJ    | 36  | VAL  |
| 42  | DJ    | 37  | ARG  |
| 42  | DJ    | 61  | ALA  |
| 42  | DJ    | 74  | VAL  |
| 42  | DJ    | 101 | SER  |
| 43  | DK    | 37  | GLN  |
| 43  | DK    | 46  | ALA  |
| 43  | DK    | 97  | ARG  |
| 44  | DL    | 14  | LYS  |
| 44  | DL    | 43  | LYS  |
| 44  | DL    | 76  | HIS  |
| 44  | DL    | 83  | GLY  |
| 44  | DL    | 108 | ASP  |
| 44  | DL    | 116 | TYR  |
| 45  | DM    | 9   | PRO  |
| 45  | DM    | 13  | HIS  |
| 45  | DM    | 29  | SER  |
| 46  | DN    | 2   | LYS  |
| 46  | DN    | 8   | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 46  | DN    | 27  | LYS  |
| 46  | DN    | 62  | ARG  |
| 46  | DN    | 77  | GLY  |
| 47  | DO    | 28  | VAL  |
| 47  | DO    | 29  | ALA  |
| 47  | DO    | 86  | LEU  |
| 48  | DP    | 12  | LYS  |
| 48  | DP    | 21  | VAL  |
| 48  | DP    | 24  | SER  |
| 48  | DP    | 30  | GLY  |
| 48  | DP    | 43  | ALA  |
| 48  | DP    | 57  | ILE  |
| 49  | DQ    | 4   | ILE  |
| 49  | DQ    | 47  | ASP  |
| 49  | DQ    | 57  | VAL  |
| 50  | DR    | 25  | ILE  |
| 50  | DR    | 73  | HIS  |
| 51  | DS    | 63  | ASP  |
| 52  | DT    | 6   | ALA  |
| 52  | DT    | 41  | GLY  |
| 52  | DT    | 67  | HIS  |
| 52  | DT    | 68  | LYS  |
| 53  | DU    | 39  | LYS  |
| 1   | A0    | 20  | ALA  |
| 1   | A0    | 34  | GLY  |
| 1   | A0    | 41  | HIS  |
| 1   | A0    | 53  | VAL  |
| 2   | A1    | 7   | LYS  |
| 2   | A1    | 45  | HIS  |
| 3   | A2    | 5   | PHE  |
| 3   | A2    | 10  | LEU  |
| 4   | A3    | 12  | ARG  |
| 4   | A3    | 26  | ALA  |
| 4   | A3    | 42  | HIS  |
| 4   | A3    | 58  | ILE  |
| 5   | A4    | 35  | GLN  |
| 9   | AC    | 19  | VAL  |
| 9   | AC    | 58  | LYS  |
| 9   | AC    | 63  | ILE  |
| 9   | AC    | 64  | VAL  |
| 9   | AC    | 91  | ALA  |
| 9   | AC    | 113 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AC    | 114 | GLN  |
| 9   | AC    | 120 | ASP  |
| 9   | AC    | 157 | ALA  |
| 9   | AC    | 162 | GLN  |
| 9   | AC    | 189 | ALA  |
| 9   | AC    | 193 | GLU  |
| 9   | AC    | 255 | LYS  |
| 9   | AC    | 269 | ARG  |
| 10  | AD    | 69  | ALA  |
| 10  | AD    | 84  | LEU  |
| 10  | AD    | 103 | ASP  |
| 10  | AD    | 113 | SER  |
| 10  | AD    | 179 | ARG  |
| 10  | AD    | 193 | VAL  |
| 11  | AE    | 24  | ASN  |
| 11  | AE    | 93  | SER  |
| 11  | AE    | 112 | LEU  |
| 11  | AE    | 180 | LEU  |
| 11  | AE    | 194 | LYS  |
| 11  | AE    | 196 | VAL  |
| 12  | AF    | 14  | LYS  |
| 12  | AF    | 20  | ASN  |
| 12  | AF    | 42  | ALA  |
| 12  | AF    | 80  | GLN  |
| 12  | AF    | 149 | ARG  |
| 13  | AG    | 5   | LYS  |
| 13  | AG    | 7   | PRO  |
| 13  | AG    | 34  | ARG  |
| 13  | AG    | 60  | GLY  |
| 13  | AG    | 61  | TRP  |
| 13  | AG    | 108 | PHE  |
| 13  | AG    | 117 | PRO  |
| 13  | AG    | 151 | ARG  |
| 14  | AH    | 15  | LEU  |
| 14  | AH    | 20  | ASN  |
| 14  | AH    | 31  | VAL  |
| 14  | AH    | 88  | GLY  |
| 14  | AH    | 95  | GLY  |
| 15  | AI    | 19  | PRO  |
| 15  | AI    | 21  | PRO  |
| 15  | AI    | 64  | ARG  |
| 15  | AI    | 74  | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16  | AJ    | 10  | THR  |
| 16  | AJ    | 21  | THR  |
| 16  | AJ    | 38  | GLY  |
| 16  | AJ    | 60  | ASP  |
| 16  | AJ    | 75  | TYR  |
| 16  | AJ    | 77  | HIS  |
| 17  | AK    | 14  | SER  |
| 17  | AK    | 46  | ALA  |
| 18  | AL    | 12  | SER  |
| 18  | AL    | 19  | LEU  |
| 18  | AL    | 33  | ARG  |
| 18  | AL    | 40  | SER  |
| 18  | AL    | 94  | THR  |
| 18  | AL    | 98  | ALA  |
| 18  | AL    | 106 | GLU  |
| 19  | AM    | 8   | LYS  |
| 19  | AM    | 14  | LYS  |
| 19  | AM    | 24  | THR  |
| 19  | AM    | 38  | ARG  |
| 19  | AM    | 64  | TRP  |
| 19  | AM    | 78  | LEU  |
| 19  | AM    | 91  | TYR  |
| 20  | AN    | 2   | ARG  |
| 20  | AN    | 61  | ALA  |
| 20  | AN    | 69  | ARG  |
| 20  | AN    | 71  | ARG  |
| 20  | AN    | 109 | PRO  |
| 21  | AO    | 19  | GLN  |
| 21  | AO    | 20  | GLU  |
| 21  | AO    | 23  | ALA  |
| 21  | AO    | 30  | ARG  |
| 22  | AP    | 25  | VAL  |
| 22  | AP    | 28  | LYS  |
| 22  | AP    | 41  | ALA  |
| 22  | AP    | 81  | ASP  |
| 22  | AP    | 96  | LEU  |
| 22  | AP    | 98  | TYR  |
| 23  | AQ    | 5   | ARG  |
| 23  | AQ    | 6   | GLY  |
| 24  | AR    | 24  | LYS  |
| 24  | AR    | 33  | VAL  |
| 24  | AR    | 67  | GLY  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24  | AR    | 81  | LYS  |
| 25  | AS    | 13  | SER  |
| 25  | AS    | 21  | ALA  |
| 25  | AS    | 29  | VAL  |
| 25  | AS    | 67  | ASP  |
| 25  | AS    | 88  | ARG  |
| 25  | AS    | 90  | LYS  |
| 26  | AT    | 39  | THR  |
| 26  | AT    | 78  | SER  |
| 26  | AT    | 79  | ASP  |
| 26  | AT    | 94  | ASP  |
| 27  | AU    | 35  | VAL  |
| 27  | AU    | 50  | ALA  |
| 28  | AV    | 55  | GLU  |
| 28  | AV    | 71  | LYS  |
| 28  | AV    | 81  | PRO  |
| 28  | AV    | 85  | LYS  |
| 30  | AX    | 47  | ARG  |
| 31  | AY    | 3   | THR  |
| 31  | AY    | 42  | ALA  |
| 32  | AZ    | 5   | ILE  |
| 32  | AZ    | 13  | THR  |
| 32  | AZ    | 45  | THR  |
| 34  | BB    | 15  | PHE  |
| 34  | BB    | 18  | GLN  |
| 34  | BB    | 31  | PHE  |
| 34  | BB    | 80  | LYS  |
| 34  | BB    | 163 | ILE  |
| 35  | BC    | 36  | PHE  |
| 35  | BC    | 136 | ALA  |
| 35  | BC    | 146 | LYS  |
| 35  | BC    | 167 | TYR  |
| 35  | BC    | 189 | HIS  |
| 36  | BD    | 37  | PRO  |
| 36  | BD    | 43  | ARG  |
| 36  | BD    | 197 | HIS  |
| 37  | BE    | 34  | ALA  |
| 37  | BE    | 43  | GLY  |
| 37  | BE    | 53  | ARG  |
| 37  | BE    | 103 | GLY  |
| 37  | BE    | 114 | LEU  |
| 37  | BE    | 132 | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 37  | BE    | 146 | MET  |
| 37  | BE    | 152 | VAL  |
| 38  | BF    | 24  | ARG  |
| 38  | BF    | 37  | HIS  |
| 38  | BF    | 53  | LYS  |
| 38  | BF    | 99  | ALA  |
| 39  | BG    | 6   | ILE  |
| 39  | BG    | 53  | SER  |
| 39  | BG    | 58  | LEU  |
| 39  | BG    | 60  | ALA  |
| 39  | BG    | 98  | LEU  |
| 40  | BH    | 46  | GLU  |
| 41  | BI    | 26  | LYS  |
| 41  | BI    | 37  | TYR  |
| 42  | BJ    | 11  | LYS  |
| 42  | BJ    | 62  | ARG  |
| 43  | BK    | 99  | LEU  |
| 43  | BK    | 102 | ALA  |
| 44  | BL    | 14  | LYS  |
| 44  | BL    | 42  | LYS  |
| 44  | BL    | 72  | ASN  |
| 44  | BL    | 114 | SER  |
| 45  | BM    | 23  | GLY  |
| 45  | BM    | 39  | ALA  |
| 45  | BM    | 48  | SER  |
| 45  | BM    | 61  | LYS  |
| 46  | BN    | 22  | LYS  |
| 46  | BN    | 34  | ASN  |
| 46  | BN    | 66  | THR  |
| 46  | BN    | 67  | GLY  |
| 46  | BN    | 93  | PRO  |
| 46  | BN    | 94  | GLY  |
| 47  | BO    | 86  | LEU  |
| 48  | BP    | 22  | ALA  |
| 48  | BP    | 52  | LEU  |
| 48  | BP    | 79  | ASN  |
| 49  | BQ    | 70  | LYS  |
| 50  | BR    | 37  | LYS  |
| 50  | BR    | 59  | LYS  |
| 51  | BS    | 80  | ARG  |
| 52  | BT    | 39  | GLU  |
| 52  | BT    | 46  | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53  | BU    | 14  | ALA  |
| 1   | C0    | 31  | LYS  |
| 1   | C0    | 34  | GLY  |
| 1   | C0    | 41  | HIS  |
| 2   | C1    | 7   | LYS  |
| 2   | C1    | 12  | SER  |
| 2   | C1    | 24  | LYS  |
| 2   | C1    | 32  | LYS  |
| 2   | C1    | 43  | ARG  |
| 3   | C2    | 10  | LEU  |
| 3   | C2    | 35  | ARG  |
| 4   | C3    | 12  | ARG  |
| 4   | C3    | 52  | GLY  |
| 9   | CC    | 40  | GLY  |
| 9   | CC    | 58  | LYS  |
| 9   | CC    | 63  | ILE  |
| 9   | CC    | 85  | ASN  |
| 9   | CC    | 91  | ALA  |
| 9   | CC    | 114 | GLN  |
| 9   | CC    | 120 | ASP  |
| 9   | CC    | 162 | GLN  |
| 9   | CC    | 189 | ALA  |
| 9   | CC    | 193 | GLU  |
| 9   | CC    | 209 | ALA  |
| 9   | CC    | 252 | LYS  |
| 10  | CD    | 91  | THR  |
| 10  | CD    | 156 | PHE  |
| 10  | CD    | 179 | ARG  |
| 10  | CD    | 194 | PRO  |
| 11  | CE    | 5   | LEU  |
| 11  | CE    | 10  | SER  |
| 11  | CE    | 28  | VAL  |
| 11  | CE    | 65  | THR  |
| 11  | CE    | 103 | GLY  |
| 11  | CE    | 115 | GLN  |
| 11  | CE    | 125 | SER  |
| 11  | CE    | 156 | ASN  |
| 11  | CE    | 172 | ALA  |
| 11  | CE    | 194 | LYS  |
| 11  | CE    | 198 | GLU  |
| 12  | CF    | 14  | LYS  |
| 12  | CF    | 20  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12  | CF    | 36  | ASN  |
| 12  | CF    | 42  | ALA  |
| 12  | CF    | 80  | GLN  |
| 12  | CF    | 149 | ARG  |
| 13  | CG    | 6   | ALA  |
| 13  | CG    | 17  | LYS  |
| 13  | CG    | 34  | ARG  |
| 13  | CG    | 59  | ASP  |
| 13  | CG    | 98  | LYS  |
| 13  | CG    | 111 | PRO  |
| 13  | CG    | 127 | GLN  |
| 13  | CG    | 155 | PRO  |
| 14  | CH    | 86  | ASP  |
| 14  | CH    | 107 | GLY  |
| 14  | CH    | 119 | ASN  |
| 14  | CH    | 121 | VAL  |
| 15  | CI    | 4   | VAL  |
| 15  | CI    | 23  | VAL  |
| 15  | CI    | 49  | GLU  |
| 15  | CI    | 61  | TYR  |
| 15  | CI    | 74  | PRO  |
| 16  | CJ    | 21  | THR  |
| 16  | CJ    | 52  | ASP  |
| 16  | CJ    | 60  | ASP  |
| 16  | CJ    | 62  | VAL  |
| 16  | CJ    | 77  | HIS  |
| 16  | CJ    | 137 | PRO  |
| 18  | CL    | 9   | ALA  |
| 18  | CL    | 62  | PRO  |
| 18  | CL    | 70  | LYS  |
| 18  | CL    | 98  | ALA  |
| 18  | CL    | 125 | LEU  |
| 19  | CM    | 4   | PRO  |
| 19  | CM    | 24  | THR  |
| 19  | CM    | 38  | ARG  |
| 20  | CN    | 99  | LYS  |
| 20  | CN    | 109 | PRO  |
| 21  | CO    | 14  | ALA  |
| 21  | CO    | 28  | VAL  |
| 21  | CO    | 91  | SER  |
| 21  | CO    | 96  | GLY  |
| 22  | CP    | 25  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 22  | CP    | 28  | LYS  |
| 22  | CP    | 32  | VAL  |
| 22  | CP    | 38  | ARG  |
| 22  | CP    | 41  | ALA  |
| 22  | CP    | 52  | ARG  |
| 22  | CP    | 87  | ARG  |
| 23  | CQ    | 5   | ARG  |
| 23  | CQ    | 6   | GLY  |
| 23  | CQ    | 43  | GLN  |
| 24  | CR    | 66  | HIS  |
| 24  | CR    | 84  | ARG  |
| 24  | CR    | 88  | GLY  |
| 25  | CS    | 13  | SER  |
| 25  | CS    | 21  | ALA  |
| 25  | CS    | 27  | LYS  |
| 25  | CS    | 31  | GLN  |
| 25  | CS    | 65  | ASP  |
| 25  | CS    | 88  | ARG  |
| 26  | CT    | 3   | ARG  |
| 26  | CT    | 39  | THR  |
| 26  | CT    | 78  | SER  |
| 26  | CT    | 79  | ASP  |
| 27  | CU    | 64  | ILE  |
| 28  | CV    | 55  | GLU  |
| 28  | CV    | 71  | LYS  |
| 28  | CV    | 81  | PRO  |
| 29  | CW    | 8   | SER  |
| 29  | CW    | 18  | LYS  |
| 29  | CW    | 49  | ASN  |
| 29  | CW    | 78  | PHE  |
| 30  | CX    | 42  | LEU  |
| 31  | CY    | 5   | LYS  |
| 31  | CY    | 39  | ASP  |
| 32  | CZ    | 7   | PRO  |
| 32  | CZ    | 15  | SER  |
| 32  | CZ    | 18  | CYS  |
| 32  | CZ    | 19  | GLY  |
| 32  | CZ    | 45  | THR  |
| 34  | DB    | 63  | LYS  |
| 34  | DB    | 72  | LYS  |
| 34  | DB    | 90  | PHE  |
| 34  | DB    | 153 | MET  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | DB    | 158 | ASP  |
| 34  | DB    | 163 | ILE  |
| 34  | DB    | 188 | THR  |
| 35  | DC    | 3   | LYS  |
| 35  | DC    | 60  | ALA  |
| 35  | DC    | 190 | THR  |
| 36  | DD    | 19  | PHE  |
| 36  | DD    | 37  | PRO  |
| 36  | DD    | 41  | GLY  |
| 36  | DD    | 116 | LEU  |
| 36  | DD    | 140 | ASP  |
| 36  | DD    | 167 | PRO  |
| 37  | DE    | 77  | ASN  |
| 37  | DE    | 102 | THR  |
| 38  | DF    | 24  | ARG  |
| 38  | DF    | 44  | ARG  |
| 38  | DF    | 53  | LYS  |
| 38  | DF    | 64  | VAL  |
| 38  | DF    | 80  | PHE  |
| 39  | DG    | 17  | PHE  |
| 39  | DG    | 62  | GLU  |
| 40  | DH    | 57  | GLU  |
| 41  | DI    | 86  | LEU  |
| 41  | DI    | 110 | VAL  |
| 42  | DJ    | 32  | THR  |
| 42  | DJ    | 41  | PRO  |
| 42  | DJ    | 56  | HIS  |
| 44  | DL    | 42  | LYS  |
| 44  | DL    | 121 | PRO  |
| 46  | DN    | 32  | ASP  |
| 46  | DN    | 51  | PRO  |
| 47  | DO    | 57  | ARG  |
| 48  | DP    | 59  | HIS  |
| 50  | DR    | 20  | ILE  |
| 50  | DR    | 40  | PRO  |
| 50  | DR    | 54  | LEU  |
| 51  | DS    | 66  | VAL  |
| 51  | DS    | 70  | LEU  |
| 52  | DT    | 39  | GLU  |
| 53  | DU    | 11  | PHE  |
| 53  | DU    | 28  | LEU  |
| 53  | DU    | 37  | TYR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | A1    | 21  | THR  |
| 2   | A1    | 24  | LYS  |
| 2   | A1    | 52  | LYS  |
| 3   | A2    | 6   | GLN  |
| 5   | A4    | 28  | SER  |
| 9   | AC    | 4   | LYS  |
| 9   | AC    | 40  | GLY  |
| 9   | AC    | 59  | GLN  |
| 9   | AC    | 85  | ASN  |
| 9   | AC    | 115 | ILE  |
| 9   | AC    | 140 | VAL  |
| 9   | AC    | 252 | LYS  |
| 9   | AC    | 253 | GLY  |
| 9   | AC    | 257 | ARG  |
| 10  | AD    | 14  | ILE  |
| 10  | AD    | 150 | GLN  |
| 10  | AD    | 194 | PRO  |
| 10  | AD    | 208 | LYS  |
| 11  | AE    | 65  | THR  |
| 11  | AE    | 68  | ALA  |
| 11  | AE    | 72  | SER  |
| 11  | AE    | 103 | GLY  |
| 11  | AE    | 117 | ARG  |
| 11  | AE    | 120 | VAL  |
| 11  | AE    | 129 | PRO  |
| 11  | AE    | 191 | ASP  |
| 11  | AE    | 198 | GLU  |
| 12  | AF    | 13  | LYS  |
| 12  | AF    | 31  | GLU  |
| 12  | AF    | 36  | ASN  |
| 12  | AF    | 102 | LEU  |
| 13  | AG    | 68  | ARG  |
| 13  | AG    | 105 | SER  |
| 13  | AG    | 116 | LEU  |
| 14  | AH    | 36  | ALA  |
| 14  | AH    | 89  | LYS  |
| 15  | AI    | 20  | SER  |
| 16  | AJ    | 20  | ALA  |
| 16  | AJ    | 64  | VAL  |
| 16  | AJ    | 83  | GLY  |
| 16  | AJ    | 114 | LEU  |
| 16  | AJ    | 134 | ALA  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 17  | AK    | 94  | PRO  |
| 17  | AK    | 113 | MET  |
| 18  | AL    | 6   | LEU  |
| 18  | AL    | 15  | ALA  |
| 18  | AL    | 36  | LYS  |
| 18  | AL    | 43  | GLY  |
| 19  | AM    | 44  | ARG  |
| 19  | AM    | 111 | GLU  |
| 20  | AN    | 4   | ARG  |
| 20  | AN    | 18  | GLN  |
| 20  | AN    | 99  | LYS  |
| 21  | AO    | 47  | VAL  |
| 21  | AO    | 108 | ASP  |
| 22  | AP    | 32  | VAL  |
| 23  | AQ    | 15  | LYS  |
| 23  | AQ    | 17  | LEU  |
| 23  | AQ    | 41  | ALA  |
| 23  | AQ    | 78  | PHE  |
| 23  | AQ    | 95  | ALA  |
| 24  | AR    | 12  | HIS  |
| 24  | AR    | 23  | GLU  |
| 24  | AR    | 76  | LYS  |
| 24  | AR    | 79  | ARG  |
| 25  | AS    | 9   | HIS  |
| 25  | AS    | 60  | HIS  |
| 25  | AS    | 71  | VAL  |
| 26  | AT    | 26  | LYS  |
| 26  | AT    | 32  | LEU  |
| 26  | AT    | 42  | GLU  |
| 27  | AU    | 63  | ALA  |
| 27  | AU    | 75  | ALA  |
| 27  | AU    | 91  | LYS  |
| 29  | AW    | 31  | LEU  |
| 29  | AW    | 38  | ARG  |
| 29  | AW    | 65  | LYS  |
| 31  | AY    | 39  | ASP  |
| 32  | AZ    | 24  | ILE  |
| 32  | AZ    | 28  | VAL  |
| 34  | BB    | 36  | LYS  |
| 34  | BB    | 96  | LEU  |
| 34  | BB    | 115 | ASP  |
| 34  | BB    | 122 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BB    | 211 | LEU  |
| 34  | BB    | 214 | GLY  |
| 35  | BC    | 29  | ALA  |
| 35  | BC    | 50  | SER  |
| 35  | BC    | 180 | ASP  |
| 36  | BD    | 28  | ASP  |
| 36  | BD    | 189 | ASP  |
| 37  | BE    | 98  | ALA  |
| 39  | BG    | 95  | ARG  |
| 39  | BG    | 101 | ARG  |
| 41  | BI    | 36  | GLN  |
| 41  | BI    | 39  | GLY  |
| 41  | BI    | 110 | VAL  |
| 42  | BJ    | 60  | ASP  |
| 42  | BJ    | 75  | ASP  |
| 42  | BJ    | 82  | LYS  |
| 42  | BJ    | 88  | MET  |
| 42  | BJ    | 93  | ALA  |
| 43  | BK    | 38  | GLY  |
| 43  | BK    | 100 | ASN  |
| 44  | BL    | 70  | GLY  |
| 44  | BL    | 122 | LYS  |
| 45  | BM    | 62  | PHE  |
| 47  | BO    | 27  | GLN  |
| 47  | BO    | 29  | ALA  |
| 47  | BO    | 60  | SER  |
| 48  | BP    | 27  | ALA  |
| 49  | BQ    | 57  | VAL  |
| 49  | BQ    | 69  | THR  |
| 51  | BS    | 41  | PRO  |
| 51  | BS    | 64  | GLU  |
| 51  | BS    | 68  | HIS  |
| 52  | BT    | 24  | ARG  |
| 52  | BT    | 77  | ASN  |
| 53  | BU    | 35  | GLU  |
| 1   | C0    | 51  | ARG  |
| 2   | C1    | 21  | THR  |
| 3   | C2    | 5   | PHE  |
| 3   | C2    | 6   | GLN  |
| 3   | C2    | 18  | PHE  |
| 9   | CC    | 4   | LYS  |
| 9   | CC    | 16  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | CC    | 115 | ILE  |
| 9   | CC    | 140 | VAL  |
| 9   | CC    | 218 | THR  |
| 9   | CC    | 235 | GLU  |
| 10  | CD    | 14  | ILE  |
| 10  | CD    | 103 | ASP  |
| 10  | CD    | 128 | ARG  |
| 10  | CD    | 193 | VAL  |
| 11  | CE    | 72  | SER  |
| 11  | CE    | 133 | LEU  |
| 11  | CE    | 142 | ALA  |
| 11  | CE    | 180 | LEU  |
| 11  | CE    | 189 | THR  |
| 11  | CE    | 191 | ASP  |
| 11  | CE    | 196 | VAL  |
| 12  | CF    | 13  | LYS  |
| 12  | CF    | 31  | GLU  |
| 12  | CF    | 102 | LEU  |
| 13  | CG    | 16  | VAL  |
| 13  | CG    | 72  | ASN  |
| 14  | CH    | 40  | THR  |
| 14  | CH    | 51  | ARG  |
| 15  | CI    | 20  | SER  |
| 16  | CJ    | 10  | THR  |
| 16  | CJ    | 20  | ALA  |
| 16  | CJ    | 45  | THR  |
| 16  | CJ    | 46  | PRO  |
| 16  | CJ    | 64  | VAL  |
| 16  | CJ    | 75  | TYR  |
| 16  | CJ    | 111 | LYS  |
| 16  | CJ    | 113 | PRO  |
| 16  | CJ    | 114 | LEU  |
| 16  | CJ    | 132 | HIS  |
| 17  | CK    | 14  | SER  |
| 17  | CK    | 46  | ALA  |
| 17  | CK    | 94  | PRO  |
| 17  | CK    | 113 | MET  |
| 18  | CL    | 25  | SER  |
| 19  | CM    | 27  | SER  |
| 19  | CM    | 44  | ARG  |
| 20  | CN    | 18  | GLN  |
| 20  | CN    | 58  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | CN    | 116 | VAL  |
| 21  | CO    | 36  | TYR  |
| 21  | CO    | 70  | ALA  |
| 21  | CO    | 88  | LYS  |
| 21  | CO    | 94  | ARG  |
| 22  | CP    | 84  | SER  |
| 22  | CP    | 98  | TYR  |
| 23  | CQ    | 15  | LYS  |
| 23  | CQ    | 53  | LYS  |
| 23  | CQ    | 78  | PHE  |
| 23  | CQ    | 87  | VAL  |
| 23  | CQ    | 113 | LYS  |
| 24  | CR    | 9   | GLY  |
| 24  | CR    | 24  | LYS  |
| 24  | CR    | 29  | THR  |
| 24  | CR    | 47  | VAL  |
| 24  | CR    | 52  | PRO  |
| 24  | CR    | 61  | ALA  |
| 24  | CR    | 86  | GLN  |
| 25  | CS    | 9   | HIS  |
| 25  | CS    | 28  | LYS  |
| 25  | CS    | 71  | VAL  |
| 26  | CT    | 23  | ALA  |
| 26  | CT    | 42  | GLU  |
| 26  | CT    | 99  | ALA  |
| 27  | CU    | 23  | LYS  |
| 28  | CV    | 66  | ASP  |
| 29  | CW    | 13  | ARG  |
| 29  | CW    | 31  | LEU  |
| 29  | CW    | 54  | ARG  |
| 29  | CW    | 65  | LYS  |
| 30  | CX    | 8   | GLU  |
| 31  | CY    | 42  | ALA  |
| 32  | CZ    | 35  | ASP  |
| 34  | DB    | 18  | GLN  |
| 34  | DB    | 24  | PRO  |
| 34  | DB    | 25  | LYS  |
| 34  | DB    | 35  | ASN  |
| 35  | DC    | 25  | THR  |
| 35  | DC    | 57  | GLU  |
| 35  | DC    | 61  | LYS  |
| 35  | DC    | 164 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36  | DD    | 29  | THR  |
| 36  | DD    | 142 | VAL  |
| 36  | DD    | 203 | TYR  |
| 37  | DE    | 110 | MET  |
| 37  | DE    | 129 | SER  |
| 39  | DG    | 52  | ARG  |
| 39  | DG    | 61  | PHE  |
| 39  | DG    | 109 | LYS  |
| 39  | DG    | 151 | ALA  |
| 40  | DH    | 27  | PRO  |
| 40  | DH    | 63  | LYS  |
| 40  | DH    | 124 | ILE  |
| 41  | DI    | 17  | ARG  |
| 41  | DI    | 22  | PRO  |
| 41  | DI    | 32  | ARG  |
| 41  | DI    | 49  | GLN  |
| 41  | DI    | 120 | ALA  |
| 43  | DK    | 38  | GLY  |
| 43  | DK    | 76  | TYR  |
| 43  | DK    | 96  | ILE  |
| 45  | DM    | 2   | ARG  |
| 45  | DM    | 36  | ALA  |
| 45  | DM    | 64  | VAL  |
| 45  | DM    | 99  | GLN  |
| 46  | DN    | 16  | ALA  |
| 46  | DN    | 52  | ARG  |
| 46  | DN    | 63  | CYS  |
| 46  | DN    | 69  | PRO  |
| 46  | DN    | 98  | ALA  |
| 48  | DP    | 15  | PRO  |
| 48  | DP    | 55  | ASP  |
| 48  | DP    | 79  | ASN  |
| 50  | DR    | 42  | ARG  |
| 50  | DR    | 62  | ARG  |
| 52  | DT    | 10  | ALA  |
| 52  | DT    | 24  | ARG  |
| 52  | DT    | 46  | ALA  |
| 52  | DT    | 50  | PHE  |
| 53  | DU    | 9   | GLU  |
| 1   | A0    | 44  | ALA  |
| 9   | AC    | 55  | GLY  |
| 9   | AC    | 89  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AC    | 235 | GLU  |
| 10  | AD    | 87  | GLY  |
| 10  | AD    | 171 | THR  |
| 10  | AD    | 180 | VAL  |
| 11  | AE    | 53  | THR  |
| 11  | AE    | 147 | LEU  |
| 11  | AE    | 153 | LEU  |
| 11  | AE    | 189 | THR  |
| 11  | AE    | 190 | ALA  |
| 13  | AG    | 91  | VAL  |
| 13  | AG    | 120 | ILE  |
| 13  | AG    | 171 | LYS  |
| 14  | AH    | 6   | LEU  |
| 14  | AH    | 11  | ASN  |
| 14  | AH    | 56  | ALA  |
| 15  | AI    | 33  | ASN  |
| 15  | AI    | 97  | VAL  |
| 15  | AI    | 123 | ALA  |
| 16  | AJ    | 111 | LYS  |
| 16  | AJ    | 113 | PRO  |
| 16  | AJ    | 117 | ALA  |
| 16  | AJ    | 138 | GLN  |
| 17  | AK    | 91  | SER  |
| 17  | AK    | 114 | LYS  |
| 18  | AL    | 4   | ASN  |
| 18  | AL    | 55  | MET  |
| 18  | AL    | 80  | SER  |
| 19  | AM    | 27  | SER  |
| 20  | AN    | 112 | TYR  |
| 20  | AN    | 113 | ILE  |
| 20  | AN    | 116 | VAL  |
| 21  | AO    | 36  | TYR  |
| 21  | AO    | 77  | ALA  |
| 22  | AP    | 33  | GLU  |
| 22  | AP    | 61  | ARG  |
| 22  | AP    | 84  | SER  |
| 23  | AQ    | 23  | TYR  |
| 23  | AQ    | 67  | ALA  |
| 24  | AR    | 20  | VAL  |
| 24  | AR    | 21  | ARG  |
| 24  | AR    | 102 | SER  |
| 26  | AT    | 50  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 27  | AU    | 49  | PRO  |
| 27  | AU    | 72  | PHE  |
| 27  | AU    | 78  | LYS  |
| 28  | AV    | 65  | VAL  |
| 28  | AV    | 66  | ASP  |
| 29  | AW    | 40  | ARG  |
| 29  | AW    | 43  | LYS  |
| 29  | AW    | 54  | ARG  |
| 31  | AY    | 2   | LYS  |
| 31  | AY    | 20  | LYS  |
| 31  | AY    | 57  | GLU  |
| 32  | AZ    | 65  | ASN  |
| 35  | BC    | 16  | PRO  |
| 35  | BC    | 42  | LEU  |
| 35  | BC    | 104 | GLU  |
| 35  | BC    | 193 | GLY  |
| 36  | BD    | 10  | LEU  |
| 36  | BD    | 71  | PHE  |
| 36  | BD    | 148 | ALA  |
| 37  | BE    | 52  | ALA  |
| 37  | BE    | 89  | THR  |
| 37  | BE    | 133 | ILE  |
| 39  | BG    | 81  | GLY  |
| 39  | BG    | 86  | VAL  |
| 40  | BH    | 16  | GLY  |
| 40  | BH    | 87  | ARG  |
| 40  | BH    | 104 | SER  |
| 41  | BI    | 11  | ARG  |
| 41  | BI    | 86  | LEU  |
| 42  | BJ    | 20  | GLN  |
| 43  | BK    | 15  | VAL  |
| 44  | BL    | 8   | ARG  |
| 44  | BL    | 27  | PRO  |
| 44  | BL    | 52  | CYS  |
| 46  | BN    | 2   | LYS  |
| 47  | BO    | 53  | ARG  |
| 47  | BO    | 57  | ARG  |
| 48  | BP    | 39  | PHE  |
| 48  | BP    | 42  | ILE  |
| 48  | BP    | 77  | GLU  |
| 49  | BQ    | 5   | ARG  |
| 50  | BR    | 33  | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 50  | BR    | 67  | LEU  |
| 52  | BT    | 50  | PHE  |
| 52  | BT    | 69  | ASN  |
| 53  | BU    | 37  | TYR  |
| 1   | C0    | 20  | ALA  |
| 1   | C0    | 22  | THR  |
| 1   | C0    | 24  | VAL  |
| 1   | C0    | 25  | THR  |
| 2   | C1    | 5   | ARG  |
| 2   | C1    | 23  | THR  |
| 2   | C1    | 36  | LYS  |
| 3   | C2    | 44  | VAL  |
| 3   | C2    | 45  | SER  |
| 9   | CC    | 14  | HIS  |
| 9   | CC    | 50  | THR  |
| 9   | CC    | 64  | VAL  |
| 9   | CC    | 156 | SER  |
| 9   | CC    | 269 | ARG  |
| 10  | CD    | 48  | ILE  |
| 10  | CD    | 55  | LYS  |
| 10  | CD    | 68  | PHE  |
| 10  | CD    | 129 | THR  |
| 10  | CD    | 139 | SER  |
| 10  | CD    | 171 | THR  |
| 11  | CE    | 11  | ALA  |
| 11  | CE    | 68  | ALA  |
| 11  | CE    | 121 | VAL  |
| 11  | CE    | 190 | ALA  |
| 12  | CF    | 162 | ASP  |
| 14  | CH    | 31  | VAL  |
| 15  | CI    | 6   | ALA  |
| 16  | CJ    | 123 | LYS  |
| 17  | CK    | 45  | GLU  |
| 18  | CL    | 23  | ILE  |
| 18  | CL    | 36  | LYS  |
| 18  | CL    | 83  | ALA  |
| 18  | CL    | 89  | VAL  |
| 19  | CM    | 2   | LEU  |
| 19  | CM    | 111 | GLU  |
| 20  | CN    | 8   | ARG  |
| 20  | CN    | 66  | ALA  |
| 20  | CN    | 112 | TYR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | CN    | 113 | ILE  |
| 22  | CP    | 33  | GLU  |
| 22  | CP    | 61  | ARG  |
| 23  | CQ    | 39  | ILE  |
| 23  | CQ    | 49  | ARG  |
| 23  | CQ    | 67  | ALA  |
| 24  | CR    | 15  | SER  |
| 24  | CR    | 23  | GLU  |
| 24  | CR    | 30  | GLY  |
| 26  | CT    | 32  | LEU  |
| 27  | CU    | 43  | LYS  |
| 27  | CU    | 78  | LYS  |
| 29  | CW    | 37  | VAL  |
| 29  | CW    | 73  | PRO  |
| 30  | CX    | 21  | LEU  |
| 30  | CX    | 24  | GLU  |
| 30  | CX    | 47  | ARG  |
| 32  | CZ    | 58  | ASP  |
| 34  | DB    | 102 | ASN  |
| 34  | DB    | 139 | GLU  |
| 34  | DB    | 156 | LEU  |
| 34  | DB    | 157 | PRO  |
| 34  | DB    | 201 | GLY  |
| 34  | DB    | 210 | THR  |
| 34  | DB    | 225 | SER  |
| 35  | DC    | 22  | PHE  |
| 35  | DC    | 24  | ASN  |
| 35  | DC    | 107 | LYS  |
| 35  | DC    | 113 | LYS  |
| 36  | DD    | 63  | ILE  |
| 36  | DD    | 103 | ARG  |
| 36  | DD    | 120 | LYS  |
| 37  | DE    | 57  | ALA  |
| 37  | DE    | 101 | GLY  |
| 39  | DG    | 148 | LYS  |
| 40  | DH    | 13  | ILE  |
| 40  | DH    | 101 | ALA  |
| 42  | DJ    | 34  | ALA  |
| 43  | DK    | 14  | GLN  |
| 43  | DK    | 59  | PRO  |
| 44  | DL    | 8   | ARG  |
| 44  | DL    | 27  | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 45  | DM    | 46  | GLU  |
| 45  | DM    | 111 | PRO  |
| 46  | DN    | 99  | SER  |
| 47  | DO    | 16  | ARG  |
| 47  | DO    | 53  | ARG  |
| 47  | DO    | 60  | SER  |
| 49  | DQ    | 5   | ARG  |
| 50  | DR    | 51  | GLN  |
| 52  | DT    | 5   | SER  |
| 53  | DU    | 43  | GLU  |
| 2   | A1    | 5   | ARG  |
| 2   | A1    | 36  | LYS  |
| 9   | AC    | 39  | SER  |
| 9   | AC    | 50  | THR  |
| 9   | AC    | 156 | SER  |
| 9   | AC    | 245 | THR  |
| 10  | AD    | 149 | ASN  |
| 11  | AE    | 10  | SER  |
| 11  | AE    | 11  | ALA  |
| 11  | AE    | 45  | ALA  |
| 11  | AE    | 119 | ILE  |
| 11  | AE    | 154 | ASP  |
| 16  | AJ    | 85  | LYS  |
| 16  | AJ    | 123 | LYS  |
| 17  | AK    | 45  | GLU  |
| 17  | AK    | 48  | PRO  |
| 17  | AK    | 71  | ARG  |
| 18  | AL    | 110 | VAL  |
| 23  | AQ    | 3   | VAL  |
| 23  | AQ    | 59  | LEU  |
| 24  | AR    | 88  | GLY  |
| 26  | AT    | 30  | ILE  |
| 26  | AT    | 31  | VAL  |
| 26  | AT    | 96  | VAL  |
| 28  | AV    | 64  | VAL  |
| 29  | AW    | 30  | VAL  |
| 30  | AX    | 46  | VAL  |
| 31  | AY    | 35  | VAL  |
| 32  | AZ    | 11  | GLU  |
| 35  | BC    | 26  | LYS  |
| 35  | BC    | 100 | ILE  |
| 35  | BC    | 107 | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 35  | BC    | 174 | LEU  |
| 36  | BD    | 24  | VAL  |
| 36  | BD    | 133 | SER  |
| 42  | BJ    | 79  | PRO  |
| 44  | BL    | 92  | VAL  |
| 53  | BU    | 9   | GLU  |
| 2   | C1    | 14  | ALA  |
| 9   | CC    | 55  | GLY  |
| 9   | CC    | 89  | ASN  |
| 9   | CC    | 203 | VAL  |
| 9   | CC    | 245 | THR  |
| 10  | CD    | 73  | VAL  |
| 10  | CD    | 180 | VAL  |
| 10  | CD    | 183 | GLU  |
| 10  | CD    | 207 | VAL  |
| 12  | CF    | 47  | LYS  |
| 13  | CG    | 56  | GLY  |
| 14  | CH    | 30  | LEU  |
| 14  | CH    | 95  | GLY  |
| 14  | CH    | 118 | PRO  |
| 15  | CI    | 99  | LYS  |
| 15  | CI    | 118 | GLY  |
| 16  | CJ    | 83  | GLY  |
| 16  | CJ    | 85  | LYS  |
| 16  | CJ    | 117 | ALA  |
| 17  | CK    | 71  | ARG  |
| 17  | CK    | 91  | SER  |
| 18  | CL    | 141 | LYS  |
| 19  | CM    | 57  | VAL  |
| 20  | CN    | 7   | GLY  |
| 20  | CN    | 102 | PHE  |
| 21  | CO    | 31  | THR  |
| 21  | CO    | 113 | ALA  |
| 24  | CR    | 28  | ALA  |
| 24  | CR    | 90  | ARG  |
| 26  | CT    | 30  | ILE  |
| 26  | CT    | 31  | VAL  |
| 26  | CT    | 60  | THR  |
| 27  | CU    | 38  | ILE  |
| 27  | CU    | 51  | LEU  |
| 28  | CV    | 2   | PHE  |
| 28  | CV    | 64  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | CW    | 46  | ALA  |
| 30  | CX    | 17  | GLU  |
| 31  | CY    | 35  | VAL  |
| 32  | CZ    | 34  | LEU  |
| 35  | DC    | 73  | GLY  |
| 36  | DD    | 47  | LEU  |
| 36  | DD    | 105 | GLY  |
| 36  | DD    | 141 | VAL  |
| 36  | DD    | 150 | LYS  |
| 36  | DD    | 166 | LYS  |
| 37  | DE    | 135 | VAL  |
| 37  | DE    | 140 | ILE  |
| 39  | DG    | 125 | ASP  |
| 40  | DH    | 96  | ALA  |
| 41  | DI    | 5   | TYR  |
| 44  | DL    | 52  | CYS  |
| 44  | DL    | 73  | LEU  |
| 46  | DN    | 61  | ASN  |
| 47  | DO    | 68  | TYR  |
| 48  | DP    | 6   | LEU  |
| 49  | DQ    | 76  | ARG  |
| 51  | DS    | 11  | ASP  |
| 51  | DS    | 43  | MET  |
| 53  | DU    | 40  | PRO  |
| 9   | AC    | 90  | ILE  |
| 9   | AC    | 225 | ASN  |
| 9   | AC    | 249 | VAL  |
| 10  | AD    | 62  | LYS  |
| 10  | AD    | 63  | PRO  |
| 10  | AD    | 73  | VAL  |
| 12  | AF    | 88  | VAL  |
| 13  | AG    | 89  | VAL  |
| 13  | AG    | 101 | VAL  |
| 14  | AH    | 9   | VAL  |
| 14  | AH    | 120 | GLY  |
| 19  | AM    | 96  | ILE  |
| 21  | AO    | 96  | GLY  |
| 24  | AR    | 72  | VAL  |
| 34  | BB    | 13  | VAL  |
| 35  | BC    | 4   | VAL  |
| 35  | BC    | 65  | VAL  |
| 46  | BN    | 50  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 48  | BP    | 2   | VAL  |
| 49  | BQ    | 32  | ILE  |
| 52  | BT    | 82  | ILE  |
| 9   | CC    | 90  | ILE  |
| 9   | CC    | 178 | GLY  |
| 9   | CC    | 225 | ASN  |
| 9   | CC    | 249 | VAL  |
| 12  | CF    | 88  | VAL  |
| 13  | CG    | 107 | GLY  |
| 13  | CG    | 152 | ARG  |
| 15  | CI    | 92  | PRO  |
| 18  | CL    | 8   | PRO  |
| 19  | CM    | 96  | ILE  |
| 23  | CQ    | 3   | VAL  |
| 27  | CU    | 58  | VAL  |
| 29  | CW    | 30  | VAL  |
| 29  | CW    | 50  | VAL  |
| 30  | CX    | 35  | GLY  |
| 36  | DD    | 107 | GLY  |
| 40  | DH    | 35  | ILE  |
| 40  | DH    | 125 | ILE  |
| 43  | DK    | 88  | PRO  |
| 43  | DK    | 119 | GLY  |
| 48  | DP    | 20  | VAL  |
| 49  | DQ    | 32  | ILE  |
| 9   | AC    | 178 | GLY  |
| 9   | AC    | 203 | VAL  |
| 9   | AC    | 227 | VAL  |
| 10  | AD    | 104 | VAL  |
| 10  | AD    | 207 | VAL  |
| 11  | AE    | 149 | ILE  |
| 11  | AE    | 181 | ILE  |
| 17  | AK    | 102 | PRO  |
| 19  | AM    | 72  | PRO  |
| 19  | AM    | 89  | VAL  |
| 27  | AU    | 66  | VAL  |
| 29  | AW    | 6   | GLY  |
| 36  | BD    | 126 | GLY  |
| 37  | BE    | 116 | VAL  |
| 38  | BF    | 19  | PRO  |
| 38  | BF    | 60  | VAL  |
| 39  | BG    | 111 | GLY  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 39  | BG    | 131 | GLY  |
| 44  | BL    | 118 | VAL  |
| 50  | BR    | 38  | ILE  |
| 2   | C1    | 4   | ILE  |
| 9   | CC    | 227 | VAL  |
| 9   | CC    | 253 | GLY  |
| 10  | CD    | 195 | GLY  |
| 11  | CE    | 108 | ILE  |
| 13  | CG    | 91  | VAL  |
| 16  | CJ    | 51  | GLY  |
| 16  | CJ    | 100 | VAL  |
| 16  | CJ    | 136 | GLN  |
| 17  | CK    | 48  | PRO  |
| 17  | CK    | 102 | PRO  |
| 18  | CL    | 49  | GLY  |
| 18  | CL    | 52  | GLY  |
| 18  | CL    | 110 | VAL  |
| 22  | CP    | 78  | PRO  |
| 27  | CU    | 47  | PRO  |
| 28  | CV    | 65  | VAL  |
| 37  | DE    | 59  | ILE  |
| 38  | DF    | 19  | PRO  |
| 38  | DF    | 60  | VAL  |
| 40  | DH    | 52  | GLY  |
| 40  | DH    | 109 | VAL  |
| 50  | DR    | 45  | GLY  |
| 9   | AC    | 244 | VAL  |
| 12  | AF    | 174 | PHE  |
| 17  | AK    | 119 | ALA  |
| 24  | AR    | 49  | ILE  |
| 26  | AT    | 74  | ILE  |
| 38  | BF    | 11  | HIS  |
| 40  | BH    | 38  | VAL  |
| 40  | BH    | 97  | GLY  |
| 9   | CC    | 164 | VAL  |
| 9   | CC    | 244 | VAL  |
| 10  | CD    | 189 | VAL  |
| 12  | CF    | 174 | PHE  |
| 17  | CK    | 36  | GLY  |
| 17  | CK    | 119 | ALA  |
| 18  | CL    | 45  | GLY  |
| 18  | CL    | 61  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 19  | CM    | 108 | VAL  |
| 19  | CM    | 135 | VAL  |
| 27  | CU    | 37  | GLY  |
| 34  | DB    | 37  | VAL  |
| 35  | DC    | 161 | ILE  |
| 37  | DE    | 96  | GLN  |
| 37  | DE    | 104 | ILE  |
| 38  | DF    | 11  | HIS  |
| 45  | DM    | 42  | VAL  |
| 50  | DR    | 58  | ILE  |
| 53  | DU    | 10  | PRO  |
| 2   | A1    | 4   | ILE  |
| 9   | AC    | 164 | VAL  |
| 9   | AC    | 236 | GLY  |
| 10  | AD    | 189 | VAL  |
| 29  | AW    | 73  | PRO  |
| 32  | AZ    | 42  | PRO  |
| 36  | BD    | 117 | VAL  |
| 37  | BE    | 56  | PRO  |
| 43  | BK    | 88  | PRO  |
| 46  | BN    | 68  | ARG  |
| 2   | C1    | 15  | GLY  |
| 4   | C3    | 31  | ILE  |
| 9   | CC    | 236 | GLY  |
| 10  | CD    | 146 | ILE  |
| 11  | CE    | 177 | PRO  |
| 14  | CH    | 88  | GLY  |
| 17  | CK    | 26  | GLY  |
| 17  | CK    | 50  | GLY  |
| 17  | CK    | 120 | PRO  |
| 18  | CL    | 100 | ILE  |
| 24  | CR    | 54  | VAL  |
| 39  | DG    | 14  | ASP  |
| 40  | DH    | 100 | ILE  |
| 1   | A0    | 50  | GLY  |
| 14  | AH    | 4   | ILE  |
| 17  | AK    | 26  | GLY  |
| 17  | AK    | 36  | GLY  |
| 20  | AN    | 84  | GLY  |
| 35  | BC    | 14  | VAL  |
| 45  | BM    | 59  | VAL  |
| 46  | BN    | 51  | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | C1    | 41  | VAL  |
| 11  | CE    | 149 | ILE  |
| 12  | CF    | 30  | VAL  |
| 16  | CJ    | 82  | GLY  |
| 17  | CK    | 63  | VAL  |
| 25  | CS    | 26  | GLY  |
| 37  | DE    | 43  | GLY  |
| 37  | DE    | 55  | VAL  |
| 51  | DS    | 75  | PRO  |

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 1   | A0    | 47/47 (100%)   | 34 (72%)  | 13 (28%) | 0           | 2  |
| 1   | C0    | 47/47 (100%)   | 39 (83%)  | 8 (17%)  | 2           | 13 |
| 2   | A1    | 48/48 (100%)   | 40 (83%)  | 8 (17%)  | 2           | 14 |
| 2   | C1    | 48/48 (100%)   | 36 (75%)  | 12 (25%) | 0           | 4  |
| 3   | A2    | 38/38 (100%)   | 18 (47%)  | 20 (53%) | 0           | 0  |
| 3   | C2    | 38/38 (100%)   | 20 (53%)  | 18 (47%) | 0           | 0  |
| 4   | A3    | 51/51 (100%)   | 34 (67%)  | 17 (33%) | 0           | 1  |
| 4   | C3    | 51/51 (100%)   | 30 (59%)  | 21 (41%) | 0           | 0  |
| 5   | A4    | 34/34 (100%)   | 21 (62%)  | 13 (38%) | 0           | 0  |
| 5   | C4    | 34/34 (100%)   | 19 (56%)  | 15 (44%) | 0           | 0  |
| 6   | A5    | 15/15 (100%)   | 12 (80%)  | 3 (20%)  | 1           | 8  |
| 9   | AC    | 213/218 (98%)  | 150 (70%) | 63 (30%) | 0           | 2  |
| 9   | CC    | 213/218 (98%)  | 147 (69%) | 66 (31%) | 0           | 2  |
| 10  | AD    | 164/164 (100%) | 112 (68%) | 52 (32%) | 0           | 1  |
| 10  | CD    | 164/164 (100%) | 111 (68%) | 53 (32%) | 0           | 1  |
| 11  | AE    | 165/165 (100%) | 120 (73%) | 45 (27%) | 0           | 3  |
| 11  | CE    | 165/165 (100%) | 118 (72%) | 47 (28%) | 0           | 2  |

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| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 12  | AF    | 149/149 (100%) | 129 (87%) | 20 (13%) | 4           | 22 |
| 12  | CF    | 149/149 (100%) | 131 (88%) | 18 (12%) | 5           | 25 |
| 13  | AG    | 137/137 (100%) | 103 (75%) | 34 (25%) | 0           | 4  |
| 13  | CG    | 137/137 (100%) | 106 (77%) | 31 (23%) | 1           | 6  |
| 14  | AH    | 114/114 (100%) | 87 (76%)  | 27 (24%) | 1           | 5  |
| 14  | CH    | 114/114 (100%) | 85 (75%)  | 29 (25%) | 0           | 4  |
| 15  | AI    | 109/109 (100%) | 93 (85%)  | 16 (15%) | 3           | 19 |
| 15  | CI    | 109/109 (100%) | 98 (90%)  | 11 (10%) | 7           | 32 |
| 16  | AJ    | 114/116 (98%)  | 74 (65%)  | 40 (35%) | 0           | 1  |
| 16  | CJ    | 114/116 (98%)  | 76 (67%)  | 38 (33%) | 0           | 1  |
| 17  | AK    | 102/104 (98%)  | 68 (67%)  | 34 (33%) | 0           | 1  |
| 17  | CK    | 102/104 (98%)  | 65 (64%)  | 37 (36%) | 0           | 0  |
| 18  | AL    | 103/103 (100%) | 61 (59%)  | 42 (41%) | 0           | 0  |
| 18  | CL    | 103/103 (100%) | 63 (61%)  | 40 (39%) | 0           | 0  |
| 19  | AM    | 109/109 (100%) | 59 (54%)  | 50 (46%) | 0           | 0  |
| 19  | CM    | 109/109 (100%) | 66 (61%)  | 43 (39%) | 0           | 0  |
| 20  | AN    | 103/103 (100%) | 74 (72%)  | 29 (28%) | 0           | 2  |
| 20  | CN    | 103/103 (100%) | 69 (67%)  | 34 (33%) | 0           | 1  |
| 21  | AO    | 87/87 (100%)   | 64 (74%)  | 23 (26%) | 0           | 3  |
| 21  | CO    | 87/87 (100%)   | 69 (79%)  | 18 (21%) | 1           | 7  |
| 22  | AP    | 99/99 (100%)   | 79 (80%)  | 20 (20%) | 1           | 8  |
| 22  | CP    | 99/99 (100%)   | 81 (82%)  | 18 (18%) | 1           | 10 |
| 23  | AQ    | 89/89 (100%)   | 58 (65%)  | 31 (35%) | 0           | 1  |
| 23  | CQ    | 89/89 (100%)   | 55 (62%)  | 34 (38%) | 0           | 0  |
| 24  | AR    | 84/84 (100%)   | 59 (70%)  | 25 (30%) | 0           | 2  |
| 24  | CR    | 84/84 (100%)   | 52 (62%)  | 32 (38%) | 0           | 0  |
| 25  | AS    | 93/93 (100%)   | 66 (71%)  | 27 (29%) | 0           | 2  |
| 25  | CS    | 93/93 (100%)   | 66 (71%)  | 27 (29%) | 0           | 2  |
| 26  | AT    | 83/84 (99%)    | 60 (72%)  | 23 (28%) | 0           | 2  |
| 26  | CT    | 83/84 (99%)    | 59 (71%)  | 24 (29%) | 0           | 2  |
| 27  | AU    | 83/84 (99%)    | 63 (76%)  | 20 (24%) | 0           | 5  |

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| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 27  | CU    | 83/84 (99%)    | 63 (76%)  | 20 (24%) | 0           | 5  |
| 28  | AV    | 78/78 (100%)   | 63 (81%)  | 15 (19%) | 1           | 9  |
| 28  | CV    | 78/78 (100%)   | 62 (80%)  | 16 (20%) | 1           | 7  |
| 29  | AW    | 62/62 (100%)   | 42 (68%)  | 20 (32%) | 0           | 1  |
| 29  | CW    | 62/62 (100%)   | 39 (63%)  | 23 (37%) | 0           | 0  |
| 30  | AX    | 55/55 (100%)   | 40 (73%)  | 15 (27%) | 0           | 3  |
| 30  | CX    | 55/55 (100%)   | 38 (69%)  | 17 (31%) | 0           | 2  |
| 31  | AY    | 48/48 (100%)   | 33 (69%)  | 15 (31%) | 0           | 1  |
| 31  | CY    | 48/48 (100%)   | 32 (67%)  | 16 (33%) | 0           | 1  |
| 32  | AZ    | 62/62 (100%)   | 44 (71%)  | 18 (29%) | 0           | 2  |
| 32  | CZ    | 62/62 (100%)   | 43 (69%)  | 19 (31%) | 0           | 2  |
| 34  | BB    | 180/198 (91%)  | 143 (79%) | 37 (21%) | 1           | 7  |
| 34  | DB    | 180/198 (91%)  | 140 (78%) | 40 (22%) | 1           | 6  |
| 35  | BC    | 170/189 (90%)  | 142 (84%) | 28 (16%) | 2           | 14 |
| 35  | DC    | 170/189 (90%)  | 130 (76%) | 40 (24%) | 1           | 5  |
| 36  | BD    | 172/172 (100%) | 137 (80%) | 35 (20%) | 1           | 8  |
| 36  | DD    | 172/172 (100%) | 126 (73%) | 46 (27%) | 0           | 3  |
| 37  | BE    | 113/125 (90%)  | 86 (76%)  | 27 (24%) | 0           | 5  |
| 37  | DE    | 113/125 (90%)  | 82 (73%)  | 31 (27%) | 0           | 3  |
| 38  | BF    | 87/116 (75%)   | 71 (82%)  | 16 (18%) | 1           | 10 |
| 38  | DF    | 87/116 (75%)   | 67 (77%)  | 20 (23%) | 1           | 6  |
| 39  | BG    | 123/146 (84%)  | 105 (85%) | 18 (15%) | 3           | 19 |
| 39  | DG    | 125/146 (86%)  | 95 (76%)  | 30 (24%) | 0           | 5  |
| 40  | BH    | 104/104 (100%) | 78 (75%)  | 26 (25%) | 0           | 4  |
| 40  | DH    | 104/104 (100%) | 78 (75%)  | 26 (25%) | 0           | 4  |
| 41  | BI    | 105/106 (99%)  | 81 (77%)  | 24 (23%) | 1           | 6  |
| 41  | DI    | 105/106 (99%)  | 82 (78%)  | 23 (22%) | 1           | 6  |
| 42  | BJ    | 86/90 (96%)    | 68 (79%)  | 18 (21%) | 1           | 7  |
| 42  | DJ    | 86/90 (96%)    | 71 (83%)  | 15 (17%) | 2           | 12 |
| 43  | BK    | 90/98 (92%)    | 68 (76%)  | 22 (24%) | 0           | 5  |
| 43  | DK    | 90/98 (92%)    | 61 (68%)  | 29 (32%) | 0           | 1  |

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| Mol | Chain | Analysed        | Rotameric  | Outliers   | Percentiles |    |
|-----|-------|-----------------|------------|------------|-------------|----|
| 44  | BL    | 103/103 (100%)  | 82 (80%)   | 21 (20%)   | 1           | 7  |
| 44  | DL    | 103/103 (100%)  | 79 (77%)   | 24 (23%)   | 1           | 5  |
| 45  | BM    | 92/95 (97%)     | 76 (83%)   | 16 (17%)   | 2           | 12 |
| 45  | DM    | 91/95 (96%)     | 74 (81%)   | 17 (19%)   | 1           | 10 |
| 46  | BN    | 79/83 (95%)     | 66 (84%)   | 13 (16%)   | 2           | 14 |
| 46  | DN    | 79/83 (95%)     | 64 (81%)   | 15 (19%)   | 1           | 9  |
| 47  | BO    | 76/77 (99%)     | 63 (83%)   | 13 (17%)   | 2           | 13 |
| 47  | DO    | 76/77 (99%)     | 60 (79%)   | 16 (21%)   | 1           | 7  |
| 48  | BP    | 65/65 (100%)    | 54 (83%)   | 11 (17%)   | 2           | 14 |
| 48  | DP    | 65/65 (100%)    | 42 (65%)   | 23 (35%)   | 0           | 0  |
| 49  | BQ    | 74/77 (96%)     | 65 (88%)   | 9 (12%)    | 5           | 25 |
| 49  | DQ    | 75/77 (97%)     | 63 (84%)   | 12 (16%)   | 2           | 16 |
| 50  | BR    | 48/64 (75%)     | 39 (81%)   | 9 (19%)    | 1           | 10 |
| 50  | DR    | 48/64 (75%)     | 35 (73%)   | 13 (27%)   | 0           | 3  |
| 51  | BS    | 70/78 (90%)     | 59 (84%)   | 11 (16%)   | 2           | 17 |
| 51  | DS    | 71/78 (91%)     | 53 (75%)   | 18 (25%)   | 0           | 4  |
| 52  | BT    | 65/65 (100%)    | 55 (85%)   | 10 (15%)   | 2           | 17 |
| 52  | DT    | 65/65 (100%)    | 57 (88%)   | 8 (12%)    | 4           | 25 |
| 53  | BU    | 44/61 (72%)     | 39 (89%)   | 5 (11%)    | 5           | 28 |
| 53  | DU    | 44/61 (72%)     | 31 (70%)   | 13 (30%)   | 0           | 2  |
| All | All   | 9356/9707 (96%) | 6965 (74%) | 2391 (26%) | 0           | 4  |

All (2391) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A0    | 5   | ASN  |
| 1   | A0    | 8   | THR  |
| 1   | A0    | 12  | ARG  |
| 1   | A0    | 15  | ARG  |
| 1   | A0    | 16  | ARG  |
| 1   | A0    | 18  | HIS  |
| 1   | A0    | 21  | LEU  |
| 1   | A0    | 25  | THR  |
| 1   | A0    | 32  | THR  |
| 1   | A0    | 39  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A0    | 48  | TYR  |
| 1   | A0    | 51  | ARG  |
| 1   | A0    | 52  | LYS  |
| 2   | A1    | 4   | ILE  |
| 2   | A1    | 8   | ILE  |
| 2   | A1    | 22  | THR  |
| 2   | A1    | 24  | LYS  |
| 2   | A1    | 26  | LYS  |
| 2   | A1    | 34  | GLU  |
| 2   | A1    | 35  | LEU  |
| 2   | A1    | 50  | GLU  |
| 3   | A2    | 1   | MET  |
| 3   | A2    | 9   | VAL  |
| 3   | A2    | 10  | LEU  |
| 3   | A2    | 12  | ARG  |
| 3   | A2    | 13  | ASN  |
| 3   | A2    | 15  | SER  |
| 3   | A2    | 16  | HIS  |
| 3   | A2    | 19  | ARG  |
| 3   | A2    | 21  | ARG  |
| 3   | A2    | 22  | MET  |
| 3   | A2    | 25  | LYS  |
| 3   | A2    | 26  | ASN  |
| 3   | A2    | 28  | ARG  |
| 3   | A2    | 29  | GLN  |
| 3   | A2    | 33  | ARG  |
| 3   | A2    | 35  | ARG  |
| 3   | A2    | 37  | LYS  |
| 3   | A2    | 39  | ARG  |
| 3   | A2    | 44  | VAL  |
| 3   | A2    | 45  | SER  |
| 4   | A3    | 2   | LYS  |
| 4   | A3    | 4   | LYS  |
| 4   | A3    | 6   | VAL  |
| 4   | A3    | 7   | ARG  |
| 4   | A3    | 12  | ARG  |
| 4   | A3    | 14  | LYS  |
| 4   | A3    | 18  | LYS  |
| 4   | A3    | 24  | LYS  |
| 4   | A3    | 25  | HIS  |
| 4   | A3    | 29  | ARG  |
| 4   | A3    | 33  | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | A3    | 35  | LYS  |
| 4   | A3    | 42  | HIS  |
| 4   | A3    | 44  | ARG  |
| 4   | A3    | 50  | SER  |
| 4   | A3    | 51  | LYS  |
| 4   | A3    | 53  | ASP  |
| 5   | A4    | 2   | LYS  |
| 5   | A4    | 4   | ARG  |
| 5   | A4    | 7   | VAL  |
| 5   | A4    | 9   | LYS  |
| 5   | A4    | 13  | ASN  |
| 5   | A4    | 16  | ILE  |
| 5   | A4    | 18  | LYS  |
| 5   | A4    | 19  | ARG  |
| 5   | A4    | 25  | VAL  |
| 5   | A4    | 28  | SER  |
| 5   | A4    | 30  | GLU  |
| 5   | A4    | 32  | LYS  |
| 5   | A4    | 33  | HIS  |
| 6   | A5    | 149 | LEU  |
| 6   | A5    | 157 | LYS  |
| 6   | A5    | 161 | LEU  |
| 9   | AC    | 8   | THR  |
| 9   | AC    | 12  | ARG  |
| 9   | AC    | 17  | LYS  |
| 9   | AC    | 23  | LEU  |
| 9   | AC    | 27  | LYS  |
| 9   | AC    | 29  | PHE  |
| 9   | AC    | 32  | LEU  |
| 9   | AC    | 33  | LEU  |
| 9   | AC    | 34  | GLU  |
| 9   | AC    | 36  | ASN  |
| 9   | AC    | 38  | LYS  |
| 9   | AC    | 43  | ASN  |
| 9   | AC    | 45  | ASN  |
| 9   | AC    | 50  | THR  |
| 9   | AC    | 51  | ARG  |
| 9   | AC    | 53  | ILE  |
| 9   | AC    | 57  | HIS  |
| 9   | AC    | 58  | LYS  |
| 9   | AC    | 61  | TYR  |
| 9   | AC    | 62  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AC    | 63  | ILE  |
| 9   | AC    | 64  | VAL  |
| 9   | AC    | 80  | LEU  |
| 9   | AC    | 85  | ASN  |
| 9   | AC    | 90  | ILE  |
| 9   | AC    | 94  | LEU  |
| 9   | AC    | 109 | LEU  |
| 9   | AC    | 113 | ASP  |
| 9   | AC    | 115 | ILE  |
| 9   | AC    | 117 | SER  |
| 9   | AC    | 127 | ASN  |
| 9   | AC    | 132 | ARG  |
| 9   | AC    | 133 | ASN  |
| 9   | AC    | 134 | ILE  |
| 9   | AC    | 139 | THR  |
| 9   | AC    | 140 | VAL  |
| 9   | AC    | 141 | HIS  |
| 9   | AC    | 143 | VAL  |
| 9   | AC    | 152 | GLN  |
| 9   | AC    | 153 | LEU  |
| 9   | AC    | 155 | ARG  |
| 9   | AC    | 163 | ILE  |
| 9   | AC    | 171 | VAL  |
| 9   | AC    | 172 | THR  |
| 9   | AC    | 174 | ARG  |
| 9   | AC    | 179 | GLU  |
| 9   | AC    | 186 | ASP  |
| 9   | AC    | 194 | VAL  |
| 9   | AC    | 198 | GLU  |
| 9   | AC    | 203 | VAL  |
| 9   | AC    | 212 | TRP  |
| 9   | AC    | 220 | ARG  |
| 9   | AC    | 225 | ASN  |
| 9   | AC    | 226 | PRO  |
| 9   | AC    | 231 | HIS  |
| 9   | AC    | 237 | ARG  |
| 9   | AC    | 251 | THR  |
| 9   | AC    | 254 | LYS  |
| 9   | AC    | 257 | ARG  |
| 9   | AC    | 258 | SER  |
| 9   | AC    | 259 | ASN  |
| 9   | AC    | 266 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AC    | 268 | ARG  |
| 10  | AD    | 4   | LEU  |
| 10  | AD    | 7   | LYS  |
| 10  | AD    | 9   | VAL  |
| 10  | AD    | 13  | ARG  |
| 10  | AD    | 16  | THR  |
| 10  | AD    | 20  | VAL  |
| 10  | AD    | 25  | THR  |
| 10  | AD    | 26  | VAL  |
| 10  | AD    | 29  | VAL  |
| 10  | AD    | 30  | GLU  |
| 10  | AD    | 33  | ARG  |
| 10  | AD    | 36  | GLN  |
| 10  | AD    | 37  | VAL  |
| 10  | AD    | 40  | LEU  |
| 10  | AD    | 42  | ASN  |
| 10  | AD    | 43  | ASP  |
| 10  | AD    | 45  | TYR  |
| 10  | AD    | 50  | VAL  |
| 10  | AD    | 56  | LYS  |
| 10  | AD    | 58  | ASN  |
| 10  | AD    | 62  | LYS  |
| 10  | AD    | 64  | GLU  |
| 10  | AD    | 67  | HIS  |
| 10  | AD    | 83  | ARG  |
| 10  | AD    | 90  | PHE  |
| 10  | AD    | 91  | THR  |
| 10  | AD    | 99  | GLU  |
| 10  | AD    | 101 | PHE  |
| 10  | AD    | 109 | VAL  |
| 10  | AD    | 128 | ARG  |
| 10  | AD    | 134 | HIS  |
| 10  | AD    | 137 | SER  |
| 10  | AD    | 138 | LEU  |
| 10  | AD    | 139 | SER  |
| 10  | AD    | 142 | VAL  |
| 10  | AD    | 145 | SER  |
| 10  | AD    | 146 | ILE  |
| 10  | AD    | 149 | ASN  |
| 10  | AD    | 151 | THR  |
| 10  | AD    | 154 | LYS  |
| 10  | AD    | 157 | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10  | AD    | 159 | LYS  |
| 10  | AD    | 160 | LYS  |
| 10  | AD    | 167 | ASN  |
| 10  | AD    | 168 | GLU  |
| 10  | AD    | 175 | LEU  |
| 10  | AD    | 177 | VAL  |
| 10  | AD    | 179 | ARG  |
| 10  | AD    | 181 | ASP  |
| 10  | AD    | 184 | ARG  |
| 10  | AD    | 188 | LEU  |
| 10  | AD    | 208 | LYS  |
| 11  | AE    | 2   | GLU  |
| 11  | AE    | 4   | VAL  |
| 11  | AE    | 12  | LEU  |
| 11  | AE    | 28  | VAL  |
| 11  | AE    | 40  | ARG  |
| 11  | AE    | 41  | GLN  |
| 11  | AE    | 43  | THR  |
| 11  | AE    | 44  | ARG  |
| 11  | AE    | 46  | GLN  |
| 11  | AE    | 51  | GLU  |
| 11  | AE    | 60  | TRP  |
| 11  | AE    | 61  | ARG  |
| 11  | AE    | 73  | ILE  |
| 11  | AE    | 74  | LYS  |
| 11  | AE    | 88  | ARG  |
| 11  | AE    | 93  | SER  |
| 11  | AE    | 97  | ASN  |
| 11  | AE    | 105 | LEU  |
| 11  | AE    | 106 | LYS  |
| 11  | AE    | 107 | SER  |
| 11  | AE    | 114 | ARG  |
| 11  | AE    | 119 | ILE  |
| 11  | AE    | 124 | PHE  |
| 11  | AE    | 130 | LYS  |
| 11  | AE    | 131 | THR  |
| 11  | AE    | 132 | LYS  |
| 11  | AE    | 133 | LEU  |
| 11  | AE    | 137 | LYS  |
| 11  | AE    | 138 | LEU  |
| 11  | AE    | 139 | LYS  |
| 11  | AE    | 140 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 11  | AE    | 143 | LEU  |
| 11  | AE    | 148 | ILE  |
| 11  | AE    | 150 | THR  |
| 11  | AE    | 158 | PHE  |
| 11  | AE    | 163 | ASN  |
| 11  | AE    | 166 | LYS  |
| 11  | AE    | 168 | ASP  |
| 11  | AE    | 175 | ILE  |
| 11  | AE    | 178 | VAL  |
| 11  | AE    | 180 | LEU  |
| 11  | AE    | 185 | LYS  |
| 11  | AE    | 194 | LYS  |
| 11  | AE    | 197 | GLU  |
| 11  | AE    | 198 | GLU  |
| 12  | AF    | 6   | TYR  |
| 12  | AF    | 16  | MET  |
| 12  | AF    | 18  | GLU  |
| 12  | AF    | 55  | ASP  |
| 12  | AF    | 59  | ILE  |
| 12  | AF    | 71  | LYS  |
| 12  | AF    | 73  | VAL  |
| 12  | AF    | 80  | GLN  |
| 12  | AF    | 98  | PHE  |
| 12  | AF    | 100 | GLU  |
| 12  | AF    | 101 | ARG  |
| 12  | AF    | 111 | ARG  |
| 12  | AF    | 132 | ARG  |
| 12  | AF    | 135 | ILE  |
| 12  | AF    | 146 | ASP  |
| 12  | AF    | 155 | ILE  |
| 12  | AF    | 157 | THR  |
| 12  | AF    | 158 | THR  |
| 12  | AF    | 172 | PHE  |
| 12  | AF    | 173 | ASP  |
| 13  | AG    | 2   | ARG  |
| 13  | AG    | 17  | LYS  |
| 13  | AG    | 18  | ILE  |
| 13  | AG    | 21  | GLN  |
| 13  | AG    | 33  | THR  |
| 13  | AG    | 35  | THR  |
| 13  | AG    | 46  | ASP  |
| 13  | AG    | 51  | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 13  | AG    | 57  | TYR  |
| 13  | AG    | 63  | GLN  |
| 13  | AG    | 70  | LEU  |
| 13  | AG    | 75  | VAL  |
| 13  | AG    | 78  | VAL  |
| 13  | AG    | 83  | THR  |
| 13  | AG    | 84  | LYS  |
| 13  | AG    | 86  | LEU  |
| 13  | AG    | 89  | VAL  |
| 13  | AG    | 94  | ARG  |
| 13  | AG    | 98  | LYS  |
| 13  | AG    | 120 | ILE  |
| 13  | AG    | 130 | ILE  |
| 13  | AG    | 132 | LEU  |
| 13  | AG    | 138 | GLN  |
| 13  | AG    | 142 | GLN  |
| 13  | AG    | 151 | ARG  |
| 13  | AG    | 152 | ARG  |
| 13  | AG    | 154 | GLU  |
| 13  | AG    | 157 | LYS  |
| 13  | AG    | 159 | LYS  |
| 13  | AG    | 165 | ASP  |
| 13  | AG    | 167 | VAL  |
| 13  | AG    | 168 | VAL  |
| 13  | AG    | 169 | ARG  |
| 13  | AG    | 174 | LYS  |
| 14  | AH    | 5   | LEU  |
| 14  | AH    | 6   | LEU  |
| 14  | AH    | 7   | ASP  |
| 14  | AH    | 8   | LYS  |
| 14  | AH    | 9   | VAL  |
| 14  | AH    | 14  | SER  |
| 14  | AH    | 25  | TYR  |
| 14  | AH    | 35  | LYS  |
| 14  | AH    | 43  | ASN  |
| 14  | AH    | 47  | PHE  |
| 14  | AH    | 48  | GLU  |
| 14  | AH    | 53  | GLU  |
| 14  | AH    | 57  | LYS  |
| 14  | AH    | 61  | VAL  |
| 14  | AH    | 62  | LEU  |
| 14  | AH    | 73  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14  | AH    | 75  | LEU  |
| 14  | AH    | 79  | THR  |
| 14  | AH    | 91  | PHE  |
| 14  | AH    | 96  | THR  |
| 14  | AH    | 112 | LYS  |
| 14  | AH    | 122 | LEU  |
| 14  | AH    | 132 | PHE  |
| 14  | AH    | 135 | HIS  |
| 14  | AH    | 141 | LYS  |
| 14  | AH    | 143 | ILE  |
| 14  | AH    | 147 | VAL  |
| 15  | AI    | 2   | LYS  |
| 15  | AI    | 5   | GLN  |
| 15  | AI    | 10  | LEU  |
| 15  | AI    | 11  | GLN  |
| 15  | AI    | 12  | VAL  |
| 15  | AI    | 23  | VAL  |
| 15  | AI    | 56  | VAL  |
| 15  | AI    | 63  | ASP  |
| 15  | AI    | 67  | THR  |
| 15  | AI    | 69  | VAL  |
| 15  | AI    | 77  | VAL  |
| 15  | AI    | 78  | LEU  |
| 15  | AI    | 79  | LEU  |
| 15  | AI    | 87  | SER  |
| 15  | AI    | 96  | LYS  |
| 15  | AI    | 115 | ASP  |
| 16  | AJ    | 1   | MET  |
| 16  | AJ    | 4   | PHE  |
| 16  | AJ    | 5   | THR  |
| 16  | AJ    | 7   | LYS  |
| 16  | AJ    | 10  | THR  |
| 16  | AJ    | 12  | LYS  |
| 16  | AJ    | 15  | TRP  |
| 16  | AJ    | 16  | TYR  |
| 16  | AJ    | 21  | THR  |
| 16  | AJ    | 23  | LYS  |
| 16  | AJ    | 24  | THR  |
| 16  | AJ    | 25  | LEU  |
| 16  | AJ    | 27  | ARG  |
| 16  | AJ    | 28  | LEU  |
| 16  | AJ    | 31  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16  | AJ    | 32  | LEU  |
| 16  | AJ    | 34  | ARG  |
| 16  | AJ    | 40  | HIS  |
| 16  | AJ    | 43  | GLU  |
| 16  | AJ    | 45  | THR  |
| 16  | AJ    | 58  | ASN  |
| 16  | AJ    | 62  | VAL  |
| 16  | AJ    | 70  | THR  |
| 16  | AJ    | 84  | ILE  |
| 16  | AJ    | 85  | LYS  |
| 16  | AJ    | 86  | GLN  |
| 16  | AJ    | 88  | THR  |
| 16  | AJ    | 89  | PHE  |
| 16  | AJ    | 90  | GLU  |
| 16  | AJ    | 96  | ARG  |
| 16  | AJ    | 101 | ILE  |
| 16  | AJ    | 102 | GLU  |
| 16  | AJ    | 106 | LYS  |
| 16  | AJ    | 116 | ARG  |
| 16  | AJ    | 119 | PHE  |
| 16  | AJ    | 121 | LYS  |
| 16  | AJ    | 128 | ASN  |
| 16  | AJ    | 131 | ASN  |
| 16  | AJ    | 136 | GLN  |
| 16  | AJ    | 137 | PRO  |
| 17  | AK    | 2   | ILE  |
| 17  | AK    | 18  | ARG  |
| 17  | AK    | 19  | VAL  |
| 17  | AK    | 20  | MET  |
| 17  | AK    | 22  | ILE  |
| 17  | AK    | 24  | VAL  |
| 17  | AK    | 29  | HIS  |
| 17  | AK    | 32  | TYR  |
| 17  | AK    | 35  | VAL  |
| 17  | AK    | 38  | ILE  |
| 17  | AK    | 39  | ILE  |
| 17  | AK    | 42  | THR  |
| 17  | AK    | 43  | ILE  |
| 17  | AK    | 47  | ILE  |
| 17  | AK    | 49  | ARG  |
| 17  | AK    | 53  | LYS  |
| 17  | AK    | 54  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 17  | AK    | 58  | LEU  |
| 17  | AK    | 64  | ARG  |
| 17  | AK    | 69  | VAL  |
| 17  | AK    | 71  | ARG  |
| 17  | AK    | 72  | PRO  |
| 17  | AK    | 75  | SER  |
| 17  | AK    | 78  | ARG  |
| 17  | AK    | 80  | ASP  |
| 17  | AK    | 82  | ASN  |
| 17  | AK    | 86  | LEU  |
| 17  | AK    | 87  | LEU  |
| 17  | AK    | 88  | ASN  |
| 17  | AK    | 100 | PHE  |
| 17  | AK    | 104 | THR  |
| 17  | AK    | 105 | ARG  |
| 17  | AK    | 108 | ARG  |
| 17  | AK    | 116 | ILE  |
| 18  | AL    | 12  | SER  |
| 18  | AL    | 14  | LYS  |
| 18  | AL    | 19  | LEU  |
| 18  | AL    | 27  | LEU  |
| 18  | AL    | 30  | THR  |
| 18  | AL    | 33  | ARG  |
| 18  | AL    | 35  | HIS  |
| 18  | AL    | 41  | ARG  |
| 18  | AL    | 47  | ARG  |
| 18  | AL    | 50  | PHE  |
| 18  | AL    | 51  | GLU  |
| 18  | AL    | 55  | MET  |
| 18  | AL    | 57  | LEU  |
| 18  | AL    | 58  | TYR  |
| 18  | AL    | 59  | ARG  |
| 18  | AL    | 61  | LEU  |
| 18  | AL    | 66  | PHE  |
| 18  | AL    | 70  | LYS  |
| 18  | AL    | 74  | THR  |
| 18  | AL    | 76  | GLU  |
| 18  | AL    | 78  | ARG  |
| 18  | AL    | 80  | SER  |
| 18  | AL    | 84  | LYS  |
| 18  | AL    | 85  | VAL  |
| 18  | AL    | 86  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 18  | AL    | 93  | ASN  |
| 18  | AL    | 103 | ILE  |
| 18  | AL    | 104 | GLN  |
| 18  | AL    | 105 | ILE  |
| 18  | AL    | 111 | ILE  |
| 18  | AL    | 112 | LEU  |
| 18  | AL    | 115 | GLU  |
| 18  | AL    | 116 | VAL  |
| 18  | AL    | 118 | THR  |
| 18  | AL    | 122 | VAL  |
| 18  | AL    | 125 | LEU  |
| 18  | AL    | 126 | ARG  |
| 18  | AL    | 127 | VAL  |
| 18  | AL    | 128 | THR  |
| 18  | AL    | 141 | LYS  |
| 18  | AL    | 142 | ILE  |
| 18  | AL    | 143 | GLU  |
| 19  | AM    | 1   | MET  |
| 19  | AM    | 3   | GLN  |
| 19  | AM    | 6   | ARG  |
| 19  | AM    | 8   | LYS  |
| 19  | AM    | 10  | ARG  |
| 19  | AM    | 11  | LYS  |
| 19  | AM    | 13  | HIS  |
| 19  | AM    | 14  | LYS  |
| 19  | AM    | 16  | ARG  |
| 19  | AM    | 18  | ARG  |
| 19  | AM    | 22  | GLN  |
| 19  | AM    | 25  | ASP  |
| 19  | AM    | 28  | PHE  |
| 19  | AM    | 33  | LEU  |
| 19  | AM    | 36  | VAL  |
| 19  | AM    | 38  | ARG  |
| 19  | AM    | 40  | ARG  |
| 19  | AM    | 47  | GLU  |
| 19  | AM    | 50  | ARG  |
| 19  | AM    | 53  | MET  |
| 19  | AM    | 54  | THR  |
| 19  | AM    | 64  | TRP  |
| 19  | AM    | 66  | ARG  |
| 19  | AM    | 67  | VAL  |
| 19  | AM    | 68  | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 19  | AM    | 71  | LYS  |
| 19  | AM    | 73  | ILE  |
| 19  | AM    | 74  | THR  |
| 19  | AM    | 76  | LYS  |
| 19  | AM    | 81  | ARG  |
| 19  | AM    | 84  | LYS  |
| 19  | AM    | 86  | LYS  |
| 19  | AM    | 88  | ASN  |
| 19  | AM    | 89  | VAL  |
| 19  | AM    | 93  | VAL  |
| 19  | AM    | 100 | LYS  |
| 19  | AM    | 102 | LEU  |
| 19  | AM    | 103 | TYR  |
| 19  | AM    | 105 | MET  |
| 19  | AM    | 108 | VAL  |
| 19  | AM    | 110 | GLU  |
| 19  | AM    | 114 | ARG  |
| 19  | AM    | 117 | PHE  |
| 19  | AM    | 118 | LYS  |
| 19  | AM    | 119 | LEU  |
| 19  | AM    | 126 | ILE  |
| 19  | AM    | 128 | THR  |
| 19  | AM    | 129 | THR  |
| 19  | AM    | 133 | LYS  |
| 19  | AM    | 136 | MET  |
| 20  | AN    | 1   | MET  |
| 20  | AN    | 5   | LYS  |
| 20  | AN    | 6   | SER  |
| 20  | AN    | 9   | GLN  |
| 20  | AN    | 13  | ASN  |
| 20  | AN    | 29  | VAL  |
| 20  | AN    | 34  | ILE  |
| 20  | AN    | 35  | LYS  |
| 20  | AN    | 42  | LYS  |
| 20  | AN    | 43  | GLU  |
| 20  | AN    | 52  | ILE  |
| 20  | AN    | 56  | LYS  |
| 20  | AN    | 57  | THR  |
| 20  | AN    | 64  | ARG  |
| 20  | AN    | 69  | ARG  |
| 20  | AN    | 75  | ILE  |
| 20  | AN    | 76  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | AN    | 81  | ASN  |
| 20  | AN    | 87  | PHE  |
| 20  | AN    | 89  | SER  |
| 20  | AN    | 94  | TYR  |
| 20  | AN    | 97  | ILE  |
| 20  | AN    | 99  | LYS  |
| 20  | AN    | 100 | CYS  |
| 20  | AN    | 106 | ASP  |
| 20  | AN    | 112 | TYR  |
| 20  | AN    | 113 | ILE  |
| 20  | AN    | 115 | LEU  |
| 20  | AN    | 120 | GLU  |
| 21  | AO    | 1   | MET  |
| 21  | AO    | 12  | THR  |
| 21  | AO    | 13  | ARG  |
| 21  | AO    | 16  | ARG  |
| 21  | AO    | 21  | LEU  |
| 21  | AO    | 25  | ARG  |
| 21  | AO    | 35  | ILE  |
| 21  | AO    | 38  | GLN  |
| 21  | AO    | 40  | ILE  |
| 21  | AO    | 43  | ASN  |
| 21  | AO    | 56  | LYS  |
| 21  | AO    | 62  | LEU  |
| 21  | AO    | 65  | THR  |
| 21  | AO    | 67  | ASN  |
| 21  | AO    | 68  | LYS  |
| 21  | AO    | 76  | LYS  |
| 21  | AO    | 80  | GLU  |
| 21  | AO    | 84  | GLU  |
| 21  | AO    | 87  | ILE  |
| 21  | AO    | 89  | ASP  |
| 21  | AO    | 97  | PHE  |
| 21  | AO    | 98  | GLN  |
| 21  | AO    | 103 | VAL  |
| 22  | AP    | 2   | ASN  |
| 22  | AP    | 5   | LYS  |
| 22  | AP    | 10  | GLU  |
| 22  | AP    | 11  | GLN  |
| 22  | AP    | 12  | MET  |
| 22  | AP    | 15  | ASP  |
| 22  | AP    | 24  | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 22  | AP    | 27  | VAL  |
| 22  | AP    | 49  | ILE  |
| 22  | AP    | 50  | ARG  |
| 22  | AP    | 52  | ARG  |
| 22  | AP    | 54  | LEU  |
| 22  | AP    | 56  | SER  |
| 22  | AP    | 74  | GLN  |
| 22  | AP    | 75  | THR  |
| 22  | AP    | 82  | SER  |
| 22  | AP    | 88  | ARG  |
| 22  | AP    | 96  | LEU  |
| 22  | AP    | 99  | LEU  |
| 22  | AP    | 108 | ARG  |
| 23  | AQ    | 2   | ARG  |
| 23  | AQ    | 3   | VAL  |
| 23  | AQ    | 4   | LYS  |
| 23  | AQ    | 5   | ARG  |
| 23  | AQ    | 7   | VAL  |
| 23  | AQ    | 12  | ARG  |
| 23  | AQ    | 14  | LYS  |
| 23  | AQ    | 16  | ILE  |
| 23  | AQ    | 29  | ARG  |
| 23  | AQ    | 32  | ARG  |
| 23  | AQ    | 33  | VAL  |
| 23  | AQ    | 35  | PHE  |
| 23  | AQ    | 36  | GLN  |
| 23  | AQ    | 39  | ILE  |
| 23  | AQ    | 40  | LYS  |
| 23  | AQ    | 44  | TYR  |
| 23  | AQ    | 52  | ARG  |
| 23  | AQ    | 55  | GLN  |
| 23  | AQ    | 57  | ARG  |
| 23  | AQ    | 58  | GLN  |
| 23  | AQ    | 59  | LEU  |
| 23  | AQ    | 63  | ARG  |
| 23  | AQ    | 69  | ARG  |
| 23  | AQ    | 70  | GLN  |
| 23  | AQ    | 80  | ASN  |
| 23  | AQ    | 89  | ILE  |
| 23  | AQ    | 92  | LYS  |
| 23  | AQ    | 94  | LEU  |
| 23  | AQ    | 100 | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 23  | AQ    | 101 | ASP  |
| 23  | AQ    | 103 | VAL  |
| 24  | AR    | 6   | GLN  |
| 24  | AR    | 12  | HIS  |
| 24  | AR    | 13  | ARG  |
| 24  | AR    | 14  | VAL  |
| 24  | AR    | 18  | GLN  |
| 24  | AR    | 25  | LEU  |
| 24  | AR    | 29  | THR  |
| 24  | AR    | 35  | PHE  |
| 24  | AR    | 37  | GLU  |
| 24  | AR    | 38  | VAL  |
| 24  | AR    | 43  | ASN  |
| 24  | AR    | 60  | LYS  |
| 24  | AR    | 64  | VAL  |
| 24  | AR    | 66  | HIS  |
| 24  | AR    | 71  | LYS  |
| 24  | AR    | 80  | ARG  |
| 24  | AR    | 83  | TYR  |
| 24  | AR    | 84  | ARG  |
| 24  | AR    | 86  | GLN  |
| 24  | AR    | 91  | GLN  |
| 24  | AR    | 92  | TRP  |
| 24  | AR    | 93  | PHE  |
| 24  | AR    | 94  | THR  |
| 24  | AR    | 95  | ASP  |
| 24  | AR    | 99  | THR  |
| 25  | AS    | 6   | LYS  |
| 25  | AS    | 9   | HIS  |
| 25  | AS    | 11  | ARG  |
| 25  | AS    | 13  | SER  |
| 25  | AS    | 18  | ARG  |
| 25  | AS    | 20  | VAL  |
| 25  | AS    | 25  | ARG  |
| 25  | AS    | 28  | LYS  |
| 25  | AS    | 35  | ILE  |
| 25  | AS    | 50  | VAL  |
| 25  | AS    | 51  | LEU  |
| 25  | AS    | 53  | SER  |
| 25  | AS    | 60  | HIS  |
| 25  | AS    | 61  | ASN  |
| 25  | AS    | 62  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 25  | AS    | 69  | LEU  |
| 25  | AS    | 75  | PHE  |
| 25  | AS    | 83  | LYS  |
| 25  | AS    | 84  | ARG  |
| 25  | AS    | 85  | ILE  |
| 25  | AS    | 88  | ARG  |
| 25  | AS    | 90  | LYS  |
| 25  | AS    | 95  | ARG  |
| 25  | AS    | 96  | ILE  |
| 25  | AS    | 98  | LYS  |
| 25  | AS    | 101 | SER  |
| 25  | AS    | 110 | ARG  |
| 26  | AT    | 3   | ARG  |
| 26  | AT    | 7   | LEU  |
| 26  | AT    | 12  | ARG  |
| 26  | AT    | 16  | VAL  |
| 26  | AT    | 18  | GLU  |
| 26  | AT    | 22  | THR  |
| 26  | AT    | 24  | MET  |
| 26  | AT    | 32  | LEU  |
| 26  | AT    | 37  | ASP  |
| 26  | AT    | 40  | LYS  |
| 26  | AT    | 60  | THR  |
| 26  | AT    | 64  | LYS  |
| 26  | AT    | 66  | LYS  |
| 26  | AT    | 68  | LYS  |
| 26  | AT    | 69  | ARG  |
| 26  | AT    | 76  | ARG  |
| 26  | AT    | 79  | ASP  |
| 26  | AT    | 85  | VAL  |
| 26  | AT    | 87  | LEU  |
| 26  | AT    | 88  | LYS  |
| 26  | AT    | 89  | GLU  |
| 26  | AT    | 91  | GLN  |
| 26  | AT    | 93  | LEU  |
| 27  | AU    | 3   | LYS  |
| 27  | AU    | 7   | ASP  |
| 27  | AU    | 11  | ILE  |
| 27  | AU    | 17  | ASP  |
| 27  | AU    | 21  | ARG  |
| 27  | AU    | 36  | GLU  |
| 27  | AU    | 39  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 27  | AU    | 40  | LEU  |
| 27  | AU    | 41  | VAL  |
| 27  | AU    | 43  | LYS  |
| 27  | AU    | 46  | LYS  |
| 27  | AU    | 52  | ASN  |
| 27  | AU    | 64  | ILE  |
| 27  | AU    | 67  | SER  |
| 27  | AU    | 68  | ASN  |
| 27  | AU    | 72  | PHE  |
| 27  | AU    | 73  | ASN  |
| 27  | AU    | 82  | VAL  |
| 27  | AU    | 92  | VAL  |
| 27  | AU    | 101 | THR  |
| 28  | AV    | 11  | GLU  |
| 28  | AV    | 18  | ARG  |
| 28  | AV    | 29  | ILE  |
| 28  | AV    | 40  | ILE  |
| 28  | AV    | 45  | ASP  |
| 28  | AV    | 46  | LYS  |
| 28  | AV    | 51  | GLN  |
| 28  | AV    | 56  | PHE  |
| 28  | AV    | 60  | VAL  |
| 28  | AV    | 66  | ASP  |
| 28  | AV    | 70  | ILE  |
| 28  | AV    | 72  | VAL  |
| 28  | AV    | 79  | ARG  |
| 28  | AV    | 87  | GLN  |
| 28  | AV    | 90  | ASP  |
| 29  | AW    | 10  | ARG  |
| 29  | AW    | 18  | LYS  |
| 29  | AW    | 19  | ARG  |
| 29  | AW    | 20  | LEU  |
| 29  | AW    | 23  | LYS  |
| 29  | AW    | 24  | ARG  |
| 29  | AW    | 25  | PHE  |
| 29  | AW    | 31  | LEU  |
| 29  | AW    | 36  | ILE  |
| 29  | AW    | 37  | VAL  |
| 29  | AW    | 38  | ARG  |
| 29  | AW    | 40  | ARG  |
| 29  | AW    | 44  | PHE  |
| 29  | AW    | 50  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | AW    | 54  | ARG  |
| 29  | AW    | 57  | THR  |
| 29  | AW    | 67  | LYS  |
| 29  | AW    | 69  | GLU  |
| 29  | AW    | 80  | SER  |
| 29  | AW    | 81  | ILE  |
| 30  | AX    | 2   | LYS  |
| 30  | AX    | 7   | ARG  |
| 30  | AX    | 8   | GLU  |
| 30  | AX    | 11  | VAL  |
| 30  | AX    | 14  | LEU  |
| 30  | AX    | 15  | ASN  |
| 30  | AX    | 16  | THR  |
| 30  | AX    | 18  | LEU  |
| 30  | AX    | 19  | LEU  |
| 30  | AX    | 25  | GLN  |
| 30  | AX    | 27  | ASN  |
| 30  | AX    | 30  | MET  |
| 30  | AX    | 36  | GLN  |
| 30  | AX    | 45  | GLN  |
| 30  | AX    | 59  | GLU  |
| 31  | AY    | 3   | THR  |
| 31  | AY    | 6   | ILE  |
| 31  | AY    | 13  | ILE  |
| 31  | AY    | 19  | HIS  |
| 31  | AY    | 22  | THR  |
| 31  | AY    | 29  | ARG  |
| 31  | AY    | 30  | ARG  |
| 31  | AY    | 31  | ILE  |
| 31  | AY    | 34  | THR  |
| 31  | AY    | 43  | ILE  |
| 31  | AY    | 46  | MET  |
| 31  | AY    | 47  | ILE  |
| 31  | AY    | 53  | MET  |
| 31  | AY    | 56  | VAL  |
| 31  | AY    | 57  | GLU  |
| 32  | AZ    | 2   | LYS  |
| 32  | AZ    | 15  | SER  |
| 32  | AZ    | 16  | CYS  |
| 32  | AZ    | 24  | ILE  |
| 32  | AZ    | 28  | VAL  |
| 32  | AZ    | 30  | HIS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 32  | AZ    | 31  | ASP  |
| 32  | AZ    | 32  | LEU  |
| 32  | AZ    | 35  | ASP  |
| 32  | AZ    | 40  | CYS  |
| 32  | AZ    | 44  | PHE  |
| 32  | AZ    | 49  | ARG  |
| 32  | AZ    | 53  | THR  |
| 32  | AZ    | 56  | ARG  |
| 32  | AZ    | 59  | ARG  |
| 32  | AZ    | 61  | ASN  |
| 32  | AZ    | 66  | ILE  |
| 32  | AZ    | 69  | SER  |
| 34  | BB    | 9   | LEU  |
| 34  | BB    | 15  | PHE  |
| 34  | BB    | 21  | TYR  |
| 34  | BB    | 22  | TRP  |
| 34  | BB    | 23  | ASN  |
| 34  | BB    | 31  | PHE  |
| 34  | BB    | 34  | ARG  |
| 34  | BB    | 37  | VAL  |
| 34  | BB    | 39  | ILE  |
| 34  | BB    | 40  | ILE  |
| 34  | BB    | 42  | LEU  |
| 34  | BB    | 45  | THR  |
| 34  | BB    | 46  | VAL  |
| 34  | BB    | 58  | LYS  |
| 34  | BB    | 67  | LEU  |
| 34  | BB    | 77  | GLU  |
| 34  | BB    | 88  | GLN  |
| 34  | BB    | 90  | PHE  |
| 34  | BB    | 91  | VAL  |
| 34  | BB    | 96  | LEU  |
| 34  | BB    | 116 | LEU  |
| 34  | BB    | 119 | GLN  |
| 34  | BB    | 125 | PHE  |
| 34  | BB    | 127 | LYS  |
| 34  | BB    | 128 | LEU  |
| 34  | BB    | 138 | ARG  |
| 34  | BB    | 158 | ASP  |
| 34  | BB    | 160 | LEU  |
| 34  | BB    | 185 | ILE  |
| 34  | BB    | 186 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BB    | 198 | VAL  |
| 34  | BB    | 202 | ASN  |
| 34  | BB    | 203 | ASP  |
| 34  | BB    | 206 | ILE  |
| 34  | BB    | 212 | TYR  |
| 34  | BB    | 224 | ARG  |
| 34  | BB    | 225 | SER  |
| 35  | BC    | 4   | VAL  |
| 35  | BC    | 10  | ARG  |
| 35  | BC    | 14  | VAL  |
| 35  | BC    | 20  | THR  |
| 35  | BC    | 28  | PHE  |
| 35  | BC    | 30  | ASP  |
| 35  | BC    | 32  | LEU  |
| 35  | BC    | 33  | ASP  |
| 35  | BC    | 40  | GLN  |
| 35  | BC    | 43  | THR  |
| 35  | BC    | 63  | ILE  |
| 35  | BC    | 86  | LEU  |
| 35  | BC    | 106 | ARG  |
| 35  | BC    | 113 | LYS  |
| 35  | BC    | 122 | GLN  |
| 35  | BC    | 125 | ARG  |
| 35  | BC    | 141 | MET  |
| 35  | BC    | 146 | LYS  |
| 35  | BC    | 148 | ILE  |
| 35  | BC    | 155 | ARG  |
| 35  | BC    | 168 | ARG  |
| 35  | BC    | 172 | VAL  |
| 35  | BC    | 175 | HIS  |
| 35  | BC    | 182 | ASP  |
| 35  | BC    | 184 | ASN  |
| 35  | BC    | 189 | HIS  |
| 35  | BC    | 190 | THR  |
| 35  | BC    | 194 | VAL  |
| 36  | BD    | 4   | LEU  |
| 36  | BD    | 13  | ARG  |
| 36  | BD    | 19  | PHE  |
| 36  | BD    | 20  | LEU  |
| 36  | BD    | 25  | ARG  |
| 36  | BD    | 30  | LYS  |
| 36  | BD    | 47  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36  | BD    | 50  | TYR  |
| 36  | BD    | 54  | LEU  |
| 36  | BD    | 55  | ARG  |
| 36  | BD    | 57  | LYS  |
| 36  | BD    | 62  | ARG  |
| 36  | BD    | 69  | ARG  |
| 36  | BD    | 81  | LEU  |
| 36  | BD    | 84  | ASN  |
| 36  | BD    | 93  | LEU  |
| 36  | BD    | 94  | GLU  |
| 36  | BD    | 103 | ARG  |
| 36  | BD    | 106 | PHE  |
| 36  | BD    | 116 | LEU  |
| 36  | BD    | 142 | VAL  |
| 36  | BD    | 146 | GLU  |
| 36  | BD    | 150 | LYS  |
| 36  | BD    | 153 | ARG  |
| 36  | BD    | 160 | LEU  |
| 36  | BD    | 162 | GLU  |
| 36  | BD    | 168 | THR  |
| 36  | BD    | 176 | LYS  |
| 36  | BD    | 183 | ARG  |
| 36  | BD    | 189 | ASP  |
| 36  | BD    | 190 | LEU  |
| 36  | BD    | 194 | ILE  |
| 36  | BD    | 195 | ASN  |
| 36  | BD    | 196 | GLU  |
| 36  | BD    | 199 | ILE  |
| 37  | BE    | 9   | GLU  |
| 37  | BE    | 23  | THR  |
| 37  | BE    | 24  | VAL  |
| 37  | BE    | 25  | LYS  |
| 37  | BE    | 32  | PHE  |
| 37  | BE    | 36  | THR  |
| 37  | BE    | 37  | VAL  |
| 37  | BE    | 44  | ARG  |
| 37  | BE    | 49  | TYR  |
| 37  | BE    | 51  | LYS  |
| 37  | BE    | 54  | GLU  |
| 37  | BE    | 63  | MET  |
| 37  | BE    | 64  | GLU  |
| 37  | BE    | 69  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 37  | BE    | 71  | ILE  |
| 37  | BE    | 81  | GLN  |
| 37  | BE    | 88  | HIS  |
| 37  | BE    | 102 | THR  |
| 37  | BE    | 104 | ILE  |
| 37  | BE    | 110 | MET  |
| 37  | BE    | 111 | ARG  |
| 37  | BE    | 121 | ASN  |
| 37  | BE    | 136 | VAL  |
| 37  | BE    | 137 | ARG  |
| 37  | BE    | 141 | ASP  |
| 37  | BE    | 151 | MET  |
| 37  | BE    | 158 | LYS  |
| 38  | BF    | 6   | ILE  |
| 38  | BF    | 25  | TYR  |
| 38  | BF    | 39  | LEU  |
| 38  | BF    | 46  | GLN  |
| 38  | BF    | 49  | TYR  |
| 38  | BF    | 54  | LEU  |
| 38  | BF    | 58  | HIS  |
| 38  | BF    | 61  | LEU  |
| 38  | BF    | 62  | MET  |
| 38  | BF    | 72  | ASP  |
| 38  | BF    | 82  | ASP  |
| 38  | BF    | 84  | VAL  |
| 38  | BF    | 85  | ILE  |
| 38  | BF    | 86  | ARG  |
| 38  | BF    | 91  | ARG  |
| 38  | BF    | 92  | THR  |
| 39  | BG    | 3   | ARG  |
| 39  | BG    | 11  | ILE  |
| 39  | BG    | 12  | LEU  |
| 39  | BG    | 21  | LEU  |
| 39  | BG    | 29  | LEU  |
| 39  | BG    | 67  | ASN  |
| 39  | BG    | 72  | VAL  |
| 39  | BG    | 74  | VAL  |
| 39  | BG    | 84  | TYR  |
| 39  | BG    | 89  | GLU  |
| 39  | BG    | 94  | ARG  |
| 39  | BG    | 102 | TRP  |
| 39  | BG    | 112 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 39  | BG    | 117 | LEU  |
| 39  | BG    | 132 | THR  |
| 39  | BG    | 143 | MET  |
| 39  | BG    | 145 | GLU  |
| 39  | BG    | 150 | PHE  |
| 40  | BH    | 14  | ARG  |
| 40  | BH    | 17  | GLN  |
| 40  | BH    | 25  | THR  |
| 40  | BH    | 26  | MET  |
| 40  | BH    | 30  | LYS  |
| 40  | BH    | 37  | ASN  |
| 40  | BH    | 38  | VAL  |
| 40  | BH    | 45  | ILE  |
| 40  | BH    | 50  | VAL  |
| 40  | BH    | 54  | THR  |
| 40  | BH    | 58  | LEU  |
| 40  | BH    | 61  | THR  |
| 40  | BH    | 64  | TYR  |
| 40  | BH    | 70  | VAL  |
| 40  | BH    | 76  | ARG  |
| 40  | BH    | 79  | ARG  |
| 40  | BH    | 82  | LEU  |
| 40  | BH    | 83  | ARG  |
| 40  | BH    | 88  | LYS  |
| 40  | BH    | 93  | LYS  |
| 40  | BH    | 94  | VAL  |
| 40  | BH    | 98  | LEU  |
| 40  | BH    | 111 | THR  |
| 40  | BH    | 113 | ARG  |
| 40  | BH    | 120 | LEU  |
| 40  | BH    | 125 | ILE  |
| 41  | BI    | 6   | TYR  |
| 41  | BI    | 11  | ARG  |
| 41  | BI    | 12  | LYS  |
| 41  | BI    | 26  | LYS  |
| 41  | BI    | 29  | ILE  |
| 41  | BI    | 30  | ASN  |
| 41  | BI    | 44  | ARG  |
| 41  | BI    | 53  | LEU  |
| 41  | BI    | 54  | VAL  |
| 41  | BI    | 56  | MET  |
| 41  | BI    | 59  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 41  | BI    | 60  | LEU  |
| 41  | BI    | 66  | VAL  |
| 41  | BI    | 82  | ILE  |
| 41  | BI    | 84  | ARG  |
| 41  | BI    | 86  | LEU  |
| 41  | BI    | 87  | MET  |
| 41  | BI    | 89  | TYR  |
| 41  | BI    | 97  | LEU  |
| 41  | BI    | 108 | ARG  |
| 41  | BI    | 112 | ARG  |
| 41  | BI    | 113 | LYS  |
| 41  | BI    | 121 | ARG  |
| 41  | BI    | 126 | PHE  |
| 42  | BJ    | 5   | ARG  |
| 42  | BJ    | 8   | ILE  |
| 42  | BJ    | 11  | LYS  |
| 42  | BJ    | 13  | PHE  |
| 42  | BJ    | 18  | ILE  |
| 42  | BJ    | 19  | ASP  |
| 42  | BJ    | 30  | LYS  |
| 42  | BJ    | 48  | ARG  |
| 42  | BJ    | 52  | LEU  |
| 42  | BJ    | 56  | HIS  |
| 42  | BJ    | 66  | GLU  |
| 42  | BJ    | 70  | HIS  |
| 42  | BJ    | 71  | LEU  |
| 42  | BJ    | 73  | LEU  |
| 42  | BJ    | 75  | ASP  |
| 42  | BJ    | 88  | MET  |
| 42  | BJ    | 89  | ARG  |
| 42  | BJ    | 99  | GLN  |
| 43  | BK    | 12  | ARG  |
| 43  | BK    | 17  | ASP  |
| 43  | BK    | 28  | ASN  |
| 43  | BK    | 31  | VAL  |
| 43  | BK    | 34  | THR  |
| 43  | BK    | 36  | ARG  |
| 43  | BK    | 49  | SER  |
| 43  | BK    | 51  | PHE  |
| 43  | BK    | 56  | LYS  |
| 43  | BK    | 58  | THR  |
| 43  | BK    | 68  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 43  | BK    | 83  | VAL  |
| 43  | BK    | 84  | MET  |
| 43  | BK    | 85  | VAL  |
| 43  | BK    | 92  | ARG  |
| 43  | BK    | 93  | GLU  |
| 43  | BK    | 99  | LEU  |
| 43  | BK    | 108 | ASN  |
| 43  | BK    | 109 | ILE  |
| 43  | BK    | 120 | CYS  |
| 43  | BK    | 124 | LYS  |
| 43  | BK    | 126 | ARG  |
| 44  | BL    | 5   | GLN  |
| 44  | BL    | 17  | LYS  |
| 44  | BL    | 19  | ASN  |
| 44  | BL    | 23  | LEU  |
| 44  | BL    | 33  | CYS  |
| 44  | BL    | 34  | THR  |
| 44  | BL    | 35  | ARG  |
| 44  | BL    | 39  | THR  |
| 44  | BL    | 40  | THR  |
| 44  | BL    | 50  | LYS  |
| 44  | BL    | 63  | THR  |
| 44  | BL    | 64  | SER  |
| 44  | BL    | 74  | GLN  |
| 44  | BL    | 85  | ARG  |
| 44  | BL    | 87  | LYS  |
| 44  | BL    | 98  | ARG  |
| 44  | BL    | 102 | ASP  |
| 44  | BL    | 106 | VAL  |
| 44  | BL    | 107 | LYS  |
| 44  | BL    | 108 | ASP  |
| 44  | BL    | 118 | VAL  |
| 45  | BM    | 2   | ARG  |
| 45  | BM    | 6   | ILE  |
| 45  | BM    | 16  | ILE  |
| 45  | BM    | 19  | THR  |
| 45  | BM    | 27  | THR  |
| 45  | BM    | 28  | ARG  |
| 45  | BM    | 42  | VAL  |
| 45  | BM    | 43  | LYS  |
| 45  | BM    | 44  | ILE  |
| 45  | BM    | 46  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 45  | BM    | 78  | ARG  |
| 45  | BM    | 82  | LEU  |
| 45  | BM    | 91  | ARG  |
| 45  | BM    | 97  | ARG  |
| 45  | BM    | 100 | ARG  |
| 45  | BM    | 102 | LYS  |
| 46  | BN    | 5   | MET  |
| 46  | BN    | 15  | LEU  |
| 46  | BN    | 19  | TYR  |
| 46  | BN    | 27  | LYS  |
| 46  | BN    | 41  | TRP  |
| 46  | BN    | 48  | GLN  |
| 46  | BN    | 59  | GLN  |
| 46  | BN    | 60  | ARG  |
| 46  | BN    | 64  | ARG  |
| 46  | BN    | 65  | GLN  |
| 46  | BN    | 74  | ARG  |
| 46  | BN    | 82  | LYS  |
| 46  | BN    | 100 | TRP  |
| 47  | BO    | 2   | LEU  |
| 47  | BO    | 4   | THR  |
| 47  | BO    | 11  | VAL  |
| 47  | BO    | 17  | ASP  |
| 47  | BO    | 38  | LEU  |
| 47  | BO    | 39  | GLN  |
| 47  | BO    | 47  | LYS  |
| 47  | BO    | 53  | ARG  |
| 47  | BO    | 60  | SER  |
| 47  | BO    | 63  | ARG  |
| 47  | BO    | 69  | LEU  |
| 47  | BO    | 79  | ARG  |
| 47  | BO    | 87  | ARG  |
| 48  | BP    | 4   | ILE  |
| 48  | BP    | 5   | ARG  |
| 48  | BP    | 25  | ARG  |
| 48  | BP    | 29  | ASN  |
| 48  | BP    | 31  | ARG  |
| 48  | BP    | 46  | LYS  |
| 48  | BP    | 51  | ARG  |
| 48  | BP    | 52  | LEU  |
| 48  | BP    | 56  | ARG  |
| 48  | BP    | 63  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 48  | BP    | 70  | ARG  |
| 49  | BQ    | 5   | ARG  |
| 49  | BQ    | 29  | LYS  |
| 49  | BQ    | 32  | ILE  |
| 49  | BQ    | 40  | THR  |
| 49  | BQ    | 57  | VAL  |
| 49  | BQ    | 60  | ILE  |
| 49  | BQ    | 68  | LYS  |
| 49  | BQ    | 74  | LEU  |
| 49  | BQ    | 76  | ARG  |
| 50  | BR    | 20  | ILE  |
| 50  | BR    | 22  | TYR  |
| 50  | BR    | 25  | ILE  |
| 50  | BR    | 28  | LEU  |
| 50  | BR    | 32  | ILE  |
| 50  | BR    | 49  | LYS  |
| 50  | BR    | 52  | ARG  |
| 50  | BR    | 54  | LEU  |
| 50  | BR    | 67  | LEU  |
| 51  | BS    | 2   | ARG  |
| 51  | BS    | 15  | LEU  |
| 51  | BS    | 20  | LYS  |
| 51  | BS    | 23  | GLU  |
| 51  | BS    | 28  | LYS  |
| 51  | BS    | 35  | ARG  |
| 51  | BS    | 36  | ARG  |
| 51  | BS    | 44  | ILE  |
| 51  | BS    | 62  | THR  |
| 51  | BS    | 72  | GLU  |
| 51  | BS    | 79  | TYR  |
| 52  | BT    | 4   | LYS  |
| 52  | BT    | 9   | ARG  |
| 52  | BT    | 14  | GLU  |
| 52  | BT    | 27  | MET  |
| 52  | BT    | 35  | TYR  |
| 52  | BT    | 53  | MET  |
| 52  | BT    | 60  | GLN  |
| 52  | BT    | 67  | HIS  |
| 52  | BT    | 70  | LYS  |
| 52  | BT    | 77  | ASN  |
| 53  | BU    | 5   | VAL  |
| 53  | BU    | 11  | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53  | BU    | 16  | ARG  |
| 53  | BU    | 46  | ARG  |
| 53  | BU    | 48  | LYS  |
| 1   | C0    | 8   | THR  |
| 1   | C0    | 12  | ARG  |
| 1   | C0    | 15  | ARG  |
| 1   | C0    | 16  | ARG  |
| 1   | C0    | 18  | HIS  |
| 1   | C0    | 32  | THR  |
| 1   | C0    | 39  | ARG  |
| 1   | C0    | 45  | ASP  |
| 2   | C1    | 4   | ILE  |
| 2   | C1    | 8   | ILE  |
| 2   | C1    | 22  | THR  |
| 2   | C1    | 24  | LYS  |
| 2   | C1    | 26  | LYS  |
| 2   | C1    | 28  | THR  |
| 2   | C1    | 31  | GLU  |
| 2   | C1    | 34  | GLU  |
| 2   | C1    | 35  | LEU  |
| 2   | C1    | 41  | VAL  |
| 2   | C1    | 43  | ARG  |
| 2   | C1    | 44  | GLN  |
| 3   | C2    | 1   | MET  |
| 3   | C2    | 9   | VAL  |
| 3   | C2    | 10  | LEU  |
| 3   | C2    | 12  | ARG  |
| 3   | C2    | 18  | PHE  |
| 3   | C2    | 19  | ARG  |
| 3   | C2    | 21  | ARG  |
| 3   | C2    | 22  | MET  |
| 3   | C2    | 25  | LYS  |
| 3   | C2    | 26  | ASN  |
| 3   | C2    | 28  | ARG  |
| 3   | C2    | 29  | GLN  |
| 3   | C2    | 33  | ARG  |
| 3   | C2    | 35  | ARG  |
| 3   | C2    | 37  | LYS  |
| 3   | C2    | 39  | ARG  |
| 3   | C2    | 44  | VAL  |
| 3   | C2    | 46  | LYS  |
| 4   | C3    | 2   | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | C3    | 4   | LYS  |
| 4   | C3    | 6   | VAL  |
| 4   | C3    | 7   | ARG  |
| 4   | C3    | 14  | LYS  |
| 4   | C3    | 18  | LYS  |
| 4   | C3    | 28  | LEU  |
| 4   | C3    | 29  | ARG  |
| 4   | C3    | 31  | ILE  |
| 4   | C3    | 32  | LEU  |
| 4   | C3    | 33  | THR  |
| 4   | C3    | 34  | LYS  |
| 4   | C3    | 35  | LYS  |
| 4   | C3    | 42  | HIS  |
| 4   | C3    | 46  | LYS  |
| 4   | C3    | 50  | SER  |
| 4   | C3    | 51  | LYS  |
| 4   | C3    | 53  | ASP  |
| 4   | C3    | 57  | VAL  |
| 4   | C3    | 58  | ILE  |
| 4   | C3    | 61  | LEU  |
| 5   | C4    | 2   | LYS  |
| 5   | C4    | 7   | VAL  |
| 5   | C4    | 9   | LYS  |
| 5   | C4    | 13  | ASN  |
| 5   | C4    | 16  | ILE  |
| 5   | C4    | 18  | LYS  |
| 5   | C4    | 19  | ARG  |
| 5   | C4    | 20  | ASP  |
| 5   | C4    | 23  | ILE  |
| 5   | C4    | 25  | VAL  |
| 5   | C4    | 26  | ILE  |
| 5   | C4    | 32  | LYS  |
| 5   | C4    | 34  | LYS  |
| 5   | C4    | 35  | GLN  |
| 5   | C4    | 36  | ARG  |
| 9   | CC    | 8   | THR  |
| 9   | CC    | 12  | ARG  |
| 9   | CC    | 15  | VAL  |
| 9   | CC    | 17  | LYS  |
| 9   | CC    | 23  | LEU  |
| 9   | CC    | 27  | LYS  |
| 9   | CC    | 29  | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | CC    | 32  | LEU  |
| 9   | CC    | 33  | LEU  |
| 9   | CC    | 34  | GLU  |
| 9   | CC    | 36  | ASN  |
| 9   | CC    | 38  | LYS  |
| 9   | CC    | 43  | ASN  |
| 9   | CC    | 45  | ASN  |
| 9   | CC    | 50  | THR  |
| 9   | CC    | 51  | ARG  |
| 9   | CC    | 53  | ILE  |
| 9   | CC    | 57  | HIS  |
| 9   | CC    | 58  | LYS  |
| 9   | CC    | 61  | TYR  |
| 9   | CC    | 62  | ARG  |
| 9   | CC    | 63  | ILE  |
| 9   | CC    | 64  | VAL  |
| 9   | CC    | 80  | LEU  |
| 9   | CC    | 85  | ASN  |
| 9   | CC    | 90  | ILE  |
| 9   | CC    | 94  | LEU  |
| 9   | CC    | 109 | LEU  |
| 9   | CC    | 113 | ASP  |
| 9   | CC    | 115 | ILE  |
| 9   | CC    | 117 | SER  |
| 9   | CC    | 127 | ASN  |
| 9   | CC    | 132 | ARG  |
| 9   | CC    | 133 | ASN  |
| 9   | CC    | 134 | ILE  |
| 9   | CC    | 139 | THR  |
| 9   | CC    | 140 | VAL  |
| 9   | CC    | 141 | HIS  |
| 9   | CC    | 143 | VAL  |
| 9   | CC    | 152 | GLN  |
| 9   | CC    | 153 | LEU  |
| 9   | CC    | 155 | ARG  |
| 9   | CC    | 163 | ILE  |
| 9   | CC    | 171 | VAL  |
| 9   | CC    | 172 | THR  |
| 9   | CC    | 174 | ARG  |
| 9   | CC    | 179 | GLU  |
| 9   | CC    | 186 | ASP  |
| 9   | CC    | 194 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | CC    | 198 | GLU  |
| 9   | CC    | 203 | VAL  |
| 9   | CC    | 212 | TRP  |
| 9   | CC    | 213 | ARG  |
| 9   | CC    | 215 | VAL  |
| 9   | CC    | 220 | ARG  |
| 9   | CC    | 225 | ASN  |
| 9   | CC    | 231 | HIS  |
| 9   | CC    | 237 | ARG  |
| 9   | CC    | 251 | THR  |
| 9   | CC    | 254 | LYS  |
| 9   | CC    | 257 | ARG  |
| 9   | CC    | 260 | LYS  |
| 9   | CC    | 261 | ARG  |
| 9   | CC    | 264 | LYS  |
| 9   | CC    | 265 | PHE  |
| 9   | CC    | 269 | ARG  |
| 10  | CD    | 4   | LEU  |
| 10  | CD    | 7   | LYS  |
| 10  | CD    | 9   | VAL  |
| 10  | CD    | 13  | ARG  |
| 10  | CD    | 16  | THR  |
| 10  | CD    | 20  | VAL  |
| 10  | CD    | 25  | THR  |
| 10  | CD    | 26  | VAL  |
| 10  | CD    | 29  | VAL  |
| 10  | CD    | 30  | GLU  |
| 10  | CD    | 33  | ARG  |
| 10  | CD    | 36  | GLN  |
| 10  | CD    | 37  | VAL  |
| 10  | CD    | 40  | LEU  |
| 10  | CD    | 42  | ASN  |
| 10  | CD    | 43  | ASP  |
| 10  | CD    | 45  | TYR  |
| 10  | CD    | 50  | VAL  |
| 10  | CD    | 60  | VAL  |
| 10  | CD    | 62  | LYS  |
| 10  | CD    | 68  | PHE  |
| 10  | CD    | 77  | ARG  |
| 10  | CD    | 80  | TRP  |
| 10  | CD    | 82  | PHE  |
| 10  | CD    | 90  | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10  | CD    | 91  | THR  |
| 10  | CD    | 98  | VAL  |
| 10  | CD    | 100 | LEU  |
| 10  | CD    | 101 | PHE  |
| 10  | CD    | 109 | VAL  |
| 10  | CD    | 127 | PHE  |
| 10  | CD    | 128 | ARG  |
| 10  | CD    | 131 | ASP  |
| 10  | CD    | 133 | THR  |
| 10  | CD    | 138 | LEU  |
| 10  | CD    | 140 | HIS  |
| 10  | CD    | 142 | VAL  |
| 10  | CD    | 146 | ILE  |
| 10  | CD    | 148 | GLN  |
| 10  | CD    | 150 | GLN  |
| 10  | CD    | 152 | PRO  |
| 10  | CD    | 157 | LYS  |
| 10  | CD    | 159 | LYS  |
| 10  | CD    | 160 | LYS  |
| 10  | CD    | 167 | ASN  |
| 10  | CD    | 168 | GLU  |
| 10  | CD    | 175 | LEU  |
| 10  | CD    | 177 | VAL  |
| 10  | CD    | 179 | ARG  |
| 10  | CD    | 181 | ASP  |
| 10  | CD    | 184 | ARG  |
| 10  | CD    | 188 | LEU  |
| 10  | CD    | 208 | LYS  |
| 11  | CE    | 14  | VAL  |
| 11  | CE    | 24  | ASN  |
| 11  | CE    | 28  | VAL  |
| 11  | CE    | 40  | ARG  |
| 11  | CE    | 41  | GLN  |
| 11  | CE    | 43  | THR  |
| 11  | CE    | 46  | GLN  |
| 11  | CE    | 47  | LYS  |
| 11  | CE    | 49  | ARG  |
| 11  | CE    | 52  | VAL  |
| 11  | CE    | 53  | THR  |
| 11  | CE    | 58  | LYS  |
| 11  | CE    | 60  | TRP  |
| 11  | CE    | 61  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 11  | CE    | 73  | ILE  |
| 11  | CE    | 74  | LYS  |
| 11  | CE    | 88  | ARG  |
| 11  | CE    | 90  | GLN  |
| 11  | CE    | 93  | SER  |
| 11  | CE    | 97  | ASN  |
| 11  | CE    | 108 | ILE  |
| 11  | CE    | 109 | LEU  |
| 11  | CE    | 110 | SER  |
| 11  | CE    | 120 | VAL  |
| 11  | CE    | 126 | VAL  |
| 11  | CE    | 130 | LYS  |
| 11  | CE    | 132 | LYS  |
| 11  | CE    | 133 | LEU  |
| 11  | CE    | 134 | LEU  |
| 11  | CE    | 143 | LEU  |
| 11  | CE    | 148 | ILE  |
| 11  | CE    | 149 | ILE  |
| 11  | CE    | 150 | THR  |
| 11  | CE    | 152 | GLU  |
| 11  | CE    | 153 | LEU  |
| 11  | CE    | 157 | LEU  |
| 11  | CE    | 158 | PHE  |
| 11  | CE    | 163 | ASN  |
| 11  | CE    | 164 | LEU  |
| 11  | CE    | 167 | VAL  |
| 11  | CE    | 168 | ASP  |
| 11  | CE    | 169 | VAL  |
| 11  | CE    | 173 | THR  |
| 11  | CE    | 178 | VAL  |
| 11  | CE    | 180 | LEU  |
| 11  | CE    | 185 | LYS  |
| 11  | CE    | 194 | LYS  |
| 12  | CF    | 6   | TYR  |
| 12  | CF    | 16  | MET  |
| 12  | CF    | 55  | ASP  |
| 12  | CF    | 59  | ILE  |
| 12  | CF    | 71  | LYS  |
| 12  | CF    | 73  | VAL  |
| 12  | CF    | 98  | PHE  |
| 12  | CF    | 100 | GLU  |
| 12  | CF    | 101 | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12  | CF    | 111 | ARG  |
| 12  | CF    | 132 | ARG  |
| 12  | CF    | 135 | ILE  |
| 12  | CF    | 146 | ASP  |
| 12  | CF    | 155 | ILE  |
| 12  | CF    | 157 | THR  |
| 12  | CF    | 158 | THR  |
| 12  | CF    | 172 | PHE  |
| 12  | CF    | 173 | ASP  |
| 13  | CG    | 17  | LYS  |
| 13  | CG    | 25  | ILE  |
| 13  | CG    | 29  | ASN  |
| 13  | CG    | 34  | ARG  |
| 13  | CG    | 36  | LEU  |
| 13  | CG    | 38  | ASP  |
| 13  | CG    | 47  | ASN  |
| 13  | CG    | 50  | THR  |
| 13  | CG    | 61  | TRP  |
| 13  | CG    | 71  | LEU  |
| 13  | CG    | 72  | ASN  |
| 13  | CG    | 79  | THR  |
| 13  | CG    | 83  | THR  |
| 13  | CG    | 85  | LYS  |
| 13  | CG    | 87  | GLN  |
| 13  | CG    | 88  | LEU  |
| 13  | CG    | 89  | VAL  |
| 13  | CG    | 93  | TYR  |
| 13  | CG    | 112 | VAL  |
| 13  | CG    | 126 | THR  |
| 13  | CG    | 131 | VAL  |
| 13  | CG    | 132 | LEU  |
| 13  | CG    | 138 | GLN  |
| 13  | CG    | 142 | GLN  |
| 13  | CG    | 148 | ARG  |
| 13  | CG    | 154 | GLU  |
| 13  | CG    | 162 | ARG  |
| 13  | CG    | 163 | TYR  |
| 13  | CG    | 168 | VAL  |
| 13  | CG    | 169 | ARG  |
| 13  | CG    | 174 | LYS  |
| 14  | CH    | 1   | MET  |
| 14  | CH    | 3   | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14  | CH    | 4   | ILE  |
| 14  | CH    | 9   | VAL  |
| 14  | CH    | 15  | LEU  |
| 14  | CH    | 20  | ASN  |
| 14  | CH    | 21  | VAL  |
| 14  | CH    | 25  | TYR  |
| 14  | CH    | 28  | ASN  |
| 14  | CH    | 31  | VAL  |
| 14  | CH    | 35  | LYS  |
| 14  | CH    | 44  | ILE  |
| 14  | CH    | 50  | ARG  |
| 14  | CH    | 66  | ASN  |
| 14  | CH    | 68  | ARG  |
| 14  | CH    | 70  | GLU  |
| 14  | CH    | 72  | ILE  |
| 14  | CH    | 75  | LEU  |
| 14  | CH    | 83  | LYS  |
| 14  | CH    | 86  | ASP  |
| 14  | CH    | 96  | THR  |
| 14  | CH    | 99  | ILE  |
| 14  | CH    | 112 | LYS  |
| 14  | CH    | 122 | LEU  |
| 14  | CH    | 132 | PHE  |
| 14  | CH    | 133 | GLN  |
| 14  | CH    | 141 | LYS  |
| 14  | CH    | 146 | VAL  |
| 14  | CH    | 147 | VAL  |
| 15  | CI    | 2   | LYS  |
| 15  | CI    | 33  | ASN  |
| 15  | CI    | 52  | LEU  |
| 15  | CI    | 54  | ILE  |
| 15  | CI    | 68  | PHE  |
| 15  | CI    | 78  | LEU  |
| 15  | CI    | 91  | LYS  |
| 15  | CI    | 99  | LYS  |
| 15  | CI    | 104 | GLN  |
| 15  | CI    | 121 | ILE  |
| 15  | CI    | 126 | ARG  |
| 16  | CJ    | 1   | MET  |
| 16  | CJ    | 4   | PHE  |
| 16  | CJ    | 5   | THR  |
| 16  | CJ    | 7   | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16  | CJ    | 10  | THR  |
| 16  | CJ    | 12  | LYS  |
| 16  | CJ    | 15  | TRP  |
| 16  | CJ    | 16  | TYR  |
| 16  | CJ    | 21  | THR  |
| 16  | CJ    | 23  | LYS  |
| 16  | CJ    | 24  | THR  |
| 16  | CJ    | 25  | LEU  |
| 16  | CJ    | 27  | ARG  |
| 16  | CJ    | 28  | LEU  |
| 16  | CJ    | 31  | GLU  |
| 16  | CJ    | 32  | LEU  |
| 16  | CJ    | 34  | ARG  |
| 16  | CJ    | 40  | HIS  |
| 16  | CJ    | 43  | GLU  |
| 16  | CJ    | 44  | TYR  |
| 16  | CJ    | 45  | THR  |
| 16  | CJ    | 47  | HIS  |
| 16  | CJ    | 58  | ASN  |
| 16  | CJ    | 62  | VAL  |
| 16  | CJ    | 70  | THR  |
| 16  | CJ    | 84  | ILE  |
| 16  | CJ    | 85  | LYS  |
| 16  | CJ    | 86  | GLN  |
| 16  | CJ    | 88  | THR  |
| 16  | CJ    | 89  | PHE  |
| 16  | CJ    | 90  | GLU  |
| 16  | CJ    | 106 | LYS  |
| 16  | CJ    | 116 | ARG  |
| 16  | CJ    | 119 | PHE  |
| 16  | CJ    | 121 | LYS  |
| 16  | CJ    | 128 | ASN  |
| 16  | CJ    | 130 | HIS  |
| 16  | CJ    | 140 | LEU  |
| 17  | CK    | 2   | ILE  |
| 17  | CK    | 18  | ARG  |
| 17  | CK    | 19  | VAL  |
| 17  | CK    | 20  | MET  |
| 17  | CK    | 22  | ILE  |
| 17  | CK    | 24  | VAL  |
| 17  | CK    | 29  | HIS  |
| 17  | CK    | 32  | TYR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 17  | CK    | 35  | VAL  |
| 17  | CK    | 38  | ILE  |
| 17  | CK    | 39  | ILE  |
| 17  | CK    | 42  | THR  |
| 17  | CK    | 43  | ILE  |
| 17  | CK    | 47  | ILE  |
| 17  | CK    | 49  | ARG  |
| 17  | CK    | 53  | LYS  |
| 17  | CK    | 54  | LYS  |
| 17  | CK    | 58  | LEU  |
| 17  | CK    | 64  | ARG  |
| 17  | CK    | 69  | VAL  |
| 17  | CK    | 71  | ARG  |
| 17  | CK    | 72  | PRO  |
| 17  | CK    | 75  | SER  |
| 17  | CK    | 78  | ARG  |
| 17  | CK    | 80  | ASP  |
| 17  | CK    | 82  | ASN  |
| 17  | CK    | 84  | CYS  |
| 17  | CK    | 86  | LEU  |
| 17  | CK    | 87  | LEU  |
| 17  | CK    | 88  | ASN  |
| 17  | CK    | 90  | ASN  |
| 17  | CK    | 100 | PHE  |
| 17  | CK    | 104 | THR  |
| 17  | CK    | 105 | ARG  |
| 17  | CK    | 108 | ARG  |
| 17  | CK    | 116 | ILE  |
| 17  | CK    | 122 | VAL  |
| 18  | CL    | 2   | ARG  |
| 18  | CL    | 4   | ASN  |
| 18  | CL    | 6   | LEU  |
| 18  | CL    | 14  | LYS  |
| 18  | CL    | 19  | LEU  |
| 18  | CL    | 21  | ARG  |
| 18  | CL    | 25  | SER  |
| 18  | CL    | 30  | THR  |
| 18  | CL    | 33  | ARG  |
| 18  | CL    | 38  | GLN  |
| 18  | CL    | 41  | ARG  |
| 18  | CL    | 46  | VAL  |
| 18  | CL    | 48  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 18  | CL    | 50  | PHE  |
| 18  | CL    | 51  | GLU  |
| 18  | CL    | 58  | TYR  |
| 18  | CL    | 59  | ARG  |
| 18  | CL    | 66  | PHE  |
| 18  | CL    | 67  | THR  |
| 18  | CL    | 76  | GLU  |
| 18  | CL    | 77  | ILE  |
| 18  | CL    | 99  | ASN  |
| 18  | CL    | 100 | ILE  |
| 18  | CL    | 101 | ILE  |
| 18  | CL    | 103 | ILE  |
| 18  | CL    | 104 | GLN  |
| 18  | CL    | 106 | GLU  |
| 18  | CL    | 111 | ILE  |
| 18  | CL    | 112 | LEU  |
| 18  | CL    | 115 | GLU  |
| 18  | CL    | 116 | VAL  |
| 18  | CL    | 118 | THR  |
| 18  | CL    | 122 | VAL  |
| 18  | CL    | 125 | LEU  |
| 18  | CL    | 126 | ARG  |
| 18  | CL    | 127 | VAL  |
| 18  | CL    | 128 | THR  |
| 18  | CL    | 141 | LYS  |
| 18  | CL    | 142 | ILE  |
| 18  | CL    | 143 | GLU  |
| 19  | CM    | 5   | LYS  |
| 19  | CM    | 6   | ARG  |
| 19  | CM    | 9   | PHE  |
| 19  | CM    | 13  | HIS  |
| 19  | CM    | 14  | LYS  |
| 19  | CM    | 16  | ARG  |
| 19  | CM    | 18  | ARG  |
| 19  | CM    | 22  | GLN  |
| 19  | CM    | 25  | ASP  |
| 19  | CM    | 27  | SER  |
| 19  | CM    | 28  | PHE  |
| 19  | CM    | 33  | LEU  |
| 19  | CM    | 36  | VAL  |
| 19  | CM    | 38  | ARG  |
| 19  | CM    | 40  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 19  | CM    | 47  | GLU  |
| 19  | CM    | 50  | ARG  |
| 19  | CM    | 54  | THR  |
| 19  | CM    | 64  | TRP  |
| 19  | CM    | 65  | ILE  |
| 19  | CM    | 66  | ARG  |
| 19  | CM    | 67  | VAL  |
| 19  | CM    | 73  | ILE  |
| 19  | CM    | 74  | THR  |
| 19  | CM    | 75  | GLU  |
| 19  | CM    | 76  | LYS  |
| 19  | CM    | 78  | LEU  |
| 19  | CM    | 81  | ARG  |
| 19  | CM    | 88  | ASN  |
| 19  | CM    | 91  | TYR  |
| 19  | CM    | 93  | VAL  |
| 19  | CM    | 100 | LYS  |
| 19  | CM    | 102 | LEU  |
| 19  | CM    | 103 | TYR  |
| 19  | CM    | 105 | MET  |
| 19  | CM    | 110 | GLU  |
| 19  | CM    | 114 | ARG  |
| 19  | CM    | 117 | PHE  |
| 19  | CM    | 118 | LYS  |
| 19  | CM    | 128 | THR  |
| 19  | CM    | 130 | PHE  |
| 19  | CM    | 133 | LYS  |
| 19  | CM    | 134 | THR  |
| 20  | CN    | 1   | MET  |
| 20  | CN    | 2   | ARG  |
| 20  | CN    | 4   | ARG  |
| 20  | CN    | 9   | GLN  |
| 20  | CN    | 10  | LEU  |
| 20  | CN    | 13  | ASN  |
| 20  | CN    | 29  | VAL  |
| 20  | CN    | 34  | ILE  |
| 20  | CN    | 35  | LYS  |
| 20  | CN    | 42  | LYS  |
| 20  | CN    | 43  | GLU  |
| 20  | CN    | 52  | ILE  |
| 20  | CN    | 56  | LYS  |
| 20  | CN    | 64  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | CN    | 69  | ARG  |
| 20  | CN    | 70  | THR  |
| 20  | CN    | 71  | ARG  |
| 20  | CN    | 72  | ASP  |
| 20  | CN    | 75  | ILE  |
| 20  | CN    | 76  | VAL  |
| 20  | CN    | 81  | ASN  |
| 20  | CN    | 87  | PHE  |
| 20  | CN    | 89  | SER  |
| 20  | CN    | 94  | TYR  |
| 20  | CN    | 97  | ILE  |
| 20  | CN    | 99  | LYS  |
| 20  | CN    | 100 | CYS  |
| 20  | CN    | 106 | ASP  |
| 20  | CN    | 112 | TYR  |
| 20  | CN    | 113 | ILE  |
| 20  | CN    | 115 | LEU  |
| 20  | CN    | 118 | ARG  |
| 20  | CN    | 120 | GLU  |
| 20  | CN    | 121 | LYS  |
| 21  | CO    | 2   | ASP  |
| 21  | CO    | 3   | LYS  |
| 21  | CO    | 7   | ARG  |
| 21  | CO    | 12  | THR  |
| 21  | CO    | 13  | ARG  |
| 21  | CO    | 20  | GLU  |
| 21  | CO    | 27  | VAL  |
| 21  | CO    | 30  | ARG  |
| 21  | CO    | 39  | VAL  |
| 21  | CO    | 48  | LEU  |
| 21  | CO    | 58  | ILE  |
| 21  | CO    | 74  | VAL  |
| 21  | CO    | 81  | ARG  |
| 21  | CO    | 83  | LEU  |
| 21  | CO    | 87  | ILE  |
| 21  | CO    | 94  | ARG  |
| 21  | CO    | 98  | GLN  |
| 21  | CO    | 103 | VAL  |
| 22  | CP    | 2   | ASN  |
| 22  | CP    | 5   | LYS  |
| 22  | CP    | 10  | GLU  |
| 22  | CP    | 11  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 22  | CP    | 12  | MET  |
| 22  | CP    | 24  | THR  |
| 22  | CP    | 49  | ILE  |
| 22  | CP    | 50  | ARG  |
| 22  | CP    | 52  | ARG  |
| 22  | CP    | 54  | LEU  |
| 22  | CP    | 56  | SER  |
| 22  | CP    | 74  | GLN  |
| 22  | CP    | 75  | THR  |
| 22  | CP    | 79  | VAL  |
| 22  | CP    | 88  | ARG  |
| 22  | CP    | 96  | LEU  |
| 22  | CP    | 99  | LEU  |
| 22  | CP    | 108 | ARG  |
| 23  | CQ    | 2   | ARG  |
| 23  | CQ    | 3   | VAL  |
| 23  | CQ    | 4   | LYS  |
| 23  | CQ    | 5   | ARG  |
| 23  | CQ    | 7   | VAL  |
| 23  | CQ    | 12  | ARG  |
| 23  | CQ    | 14  | LYS  |
| 23  | CQ    | 16  | ILE  |
| 23  | CQ    | 21  | LYS  |
| 23  | CQ    | 23  | TYR  |
| 23  | CQ    | 29  | ARG  |
| 23  | CQ    | 30  | VAL  |
| 23  | CQ    | 35  | PHE  |
| 23  | CQ    | 36  | GLN  |
| 23  | CQ    | 39  | ILE  |
| 23  | CQ    | 40  | LYS  |
| 23  | CQ    | 44  | TYR  |
| 23  | CQ    | 46  | TYR  |
| 23  | CQ    | 51  | GLN  |
| 23  | CQ    | 52  | ARG  |
| 23  | CQ    | 53  | LYS  |
| 23  | CQ    | 57  | ARG  |
| 23  | CQ    | 58  | GLN  |
| 23  | CQ    | 59  | LEU  |
| 23  | CQ    | 63  | ARG  |
| 23  | CQ    | 73  | ILE  |
| 23  | CQ    | 80  | ASN  |
| 23  | CQ    | 84  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 23  | CQ    | 91  | ARG  |
| 23  | CQ    | 93  | ILE  |
| 23  | CQ    | 94  | LEU  |
| 23  | CQ    | 101 | ASP  |
| 23  | CQ    | 103 | VAL  |
| 23  | CQ    | 113 | LYS  |
| 24  | CR    | 4   | VAL  |
| 24  | CR    | 5   | PHE  |
| 24  | CR    | 6   | GLN  |
| 24  | CR    | 10  | LYS  |
| 24  | CR    | 11  | GLN  |
| 24  | CR    | 12  | HIS  |
| 24  | CR    | 14  | VAL  |
| 24  | CR    | 18  | GLN  |
| 24  | CR    | 20  | VAL  |
| 24  | CR    | 22  | LEU  |
| 24  | CR    | 24  | LYS  |
| 24  | CR    | 26  | ASP  |
| 24  | CR    | 27  | ILE  |
| 24  | CR    | 38  | VAL  |
| 24  | CR    | 39  | LEU  |
| 24  | CR    | 40  | MET  |
| 24  | CR    | 55  | ASP  |
| 24  | CR    | 64  | VAL  |
| 24  | CR    | 66  | HIS  |
| 24  | CR    | 73  | LYS  |
| 24  | CR    | 75  | VAL  |
| 24  | CR    | 78  | ARG  |
| 24  | CR    | 79  | ARG  |
| 24  | CR    | 81  | LYS  |
| 24  | CR    | 84  | ARG  |
| 24  | CR    | 85  | LYS  |
| 24  | CR    | 86  | GLN  |
| 24  | CR    | 87  | GLN  |
| 24  | CR    | 91  | GLN  |
| 24  | CR    | 93  | PHE  |
| 24  | CR    | 99  | THR  |
| 24  | CR    | 102 | SER  |
| 25  | CS    | 6   | LYS  |
| 25  | CS    | 9   | HIS  |
| 25  | CS    | 11  | ARG  |
| 25  | CS    | 13  | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 25  | CS    | 18  | ARG  |
| 25  | CS    | 20  | VAL  |
| 25  | CS    | 24  | ILE  |
| 25  | CS    | 25  | ARG  |
| 25  | CS    | 27  | LYS  |
| 25  | CS    | 28  | LYS  |
| 25  | CS    | 33  | LEU  |
| 25  | CS    | 35  | ILE  |
| 25  | CS    | 50  | VAL  |
| 25  | CS    | 51  | LEU  |
| 25  | CS    | 53  | SER  |
| 25  | CS    | 61  | ASN  |
| 25  | CS    | 75  | PHE  |
| 25  | CS    | 83  | LYS  |
| 25  | CS    | 84  | ARG  |
| 25  | CS    | 85  | ILE  |
| 25  | CS    | 88  | ARG  |
| 25  | CS    | 95  | ARG  |
| 25  | CS    | 96  | ILE  |
| 25  | CS    | 98  | LYS  |
| 25  | CS    | 101 | SER  |
| 25  | CS    | 109 | ASP  |
| 25  | CS    | 110 | ARG  |
| 26  | CT    | 6   | ARG  |
| 26  | CT    | 7   | LEU  |
| 26  | CT    | 12  | ARG  |
| 26  | CT    | 16  | VAL  |
| 26  | CT    | 18  | GLU  |
| 26  | CT    | 22  | THR  |
| 26  | CT    | 24  | MET  |
| 26  | CT    | 25  | GLU  |
| 26  | CT    | 32  | LEU  |
| 26  | CT    | 37  | ASP  |
| 26  | CT    | 40  | LYS  |
| 26  | CT    | 60  | THR  |
| 26  | CT    | 64  | LYS  |
| 26  | CT    | 66  | LYS  |
| 26  | CT    | 68  | LYS  |
| 26  | CT    | 76  | ARG  |
| 26  | CT    | 79  | ASP  |
| 26  | CT    | 85  | VAL  |
| 26  | CT    | 87  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 26  | CT    | 88  | LYS  |
| 26  | CT    | 89  | GLU  |
| 26  | CT    | 92  | ASN  |
| 26  | CT    | 93  | LEU  |
| 26  | CT    | 95  | PHE  |
| 27  | CU    | 7   | ASP  |
| 27  | CU    | 11  | ILE  |
| 27  | CU    | 17  | ASP  |
| 27  | CU    | 21  | ARG  |
| 27  | CU    | 25  | LYS  |
| 27  | CU    | 27  | VAL  |
| 27  | CU    | 28  | LEU  |
| 27  | CU    | 34  | ILE  |
| 27  | CU    | 40  | LEU  |
| 27  | CU    | 57  | ILE  |
| 27  | CU    | 58  | VAL  |
| 27  | CU    | 60  | LYS  |
| 27  | CU    | 69  | VAL  |
| 27  | CU    | 71  | ILE  |
| 27  | CU    | 72  | PHE  |
| 27  | CU    | 82  | VAL  |
| 27  | CU    | 92  | VAL  |
| 27  | CU    | 95  | PHE  |
| 27  | CU    | 96  | LYS  |
| 27  | CU    | 98  | ASN  |
| 28  | CV    | 11  | GLU  |
| 28  | CV    | 18  | ARG  |
| 28  | CV    | 27  | PRO  |
| 28  | CV    | 29  | ILE  |
| 28  | CV    | 40  | ILE  |
| 28  | CV    | 45  | ASP  |
| 28  | CV    | 46  | LYS  |
| 28  | CV    | 51  | GLN  |
| 28  | CV    | 56  | PHE  |
| 28  | CV    | 60  | VAL  |
| 28  | CV    | 66  | ASP  |
| 28  | CV    | 70  | ILE  |
| 28  | CV    | 72  | VAL  |
| 28  | CV    | 79  | ARG  |
| 28  | CV    | 87  | GLN  |
| 28  | CV    | 90  | ASP  |
| 29  | CW    | 3   | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | CW    | 4   | LYS  |
| 29  | CW    | 10  | ARG  |
| 29  | CW    | 13  | ARG  |
| 29  | CW    | 14  | ASP  |
| 29  | CW    | 15  | SER  |
| 29  | CW    | 18  | LYS  |
| 29  | CW    | 19  | ARG  |
| 29  | CW    | 20  | LEU  |
| 29  | CW    | 23  | LYS  |
| 29  | CW    | 24  | ARG  |
| 29  | CW    | 25  | PHE  |
| 29  | CW    | 31  | LEU  |
| 29  | CW    | 36  | ILE  |
| 29  | CW    | 39  | GLN  |
| 29  | CW    | 49  | ASN  |
| 29  | CW    | 50  | VAL  |
| 29  | CW    | 54  | ARG  |
| 29  | CW    | 57  | THR  |
| 29  | CW    | 67  | LYS  |
| 29  | CW    | 69  | GLU  |
| 29  | CW    | 76  | ARG  |
| 29  | CW    | 78  | PHE  |
| 30  | CX    | 6   | LEU  |
| 30  | CX    | 8   | GLU  |
| 30  | CX    | 17  | GLU  |
| 30  | CX    | 18  | LEU  |
| 30  | CX    | 20  | ASN  |
| 30  | CX    | 23  | ARG  |
| 30  | CX    | 25  | GLN  |
| 30  | CX    | 26  | PHE  |
| 30  | CX    | 30  | MET  |
| 30  | CX    | 31  | GLN  |
| 30  | CX    | 43  | LEU  |
| 30  | CX    | 44  | LYS  |
| 30  | CX    | 47  | ARG  |
| 30  | CX    | 49  | ASP  |
| 30  | CX    | 53  | VAL  |
| 30  | CX    | 55  | THR  |
| 30  | CX    | 57  | LEU  |
| 31  | CY    | 4   | ILE  |
| 31  | CY    | 6   | ILE  |
| 31  | CY    | 13  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 31  | CY    | 22  | THR  |
| 31  | CY    | 23  | LEU  |
| 31  | CY    | 24  | LEU  |
| 31  | CY    | 29  | ARG  |
| 31  | CY    | 30  | ARG  |
| 31  | CY    | 31  | ILE  |
| 31  | CY    | 34  | THR  |
| 31  | CY    | 43  | ILE  |
| 31  | CY    | 46  | MET  |
| 31  | CY    | 47  | ILE  |
| 31  | CY    | 53  | MET  |
| 31  | CY    | 56  | VAL  |
| 31  | CY    | 57  | GLU  |
| 32  | CZ    | 4   | ASP  |
| 32  | CZ    | 5   | ILE  |
| 32  | CZ    | 13  | THR  |
| 32  | CZ    | 16  | CYS  |
| 32  | CZ    | 24  | ILE  |
| 32  | CZ    | 27  | THR  |
| 32  | CZ    | 28  | VAL  |
| 32  | CZ    | 31  | ASP  |
| 32  | CZ    | 33  | ASN  |
| 32  | CZ    | 34  | LEU  |
| 32  | CZ    | 35  | ASP  |
| 32  | CZ    | 40  | CYS  |
| 32  | CZ    | 44  | PHE  |
| 32  | CZ    | 49  | ARG  |
| 32  | CZ    | 53  | THR  |
| 32  | CZ    | 56  | ARG  |
| 32  | CZ    | 59  | ARG  |
| 32  | CZ    | 61  | ASN  |
| 32  | CZ    | 66  | ILE  |
| 34  | DB    | 8   | MET  |
| 34  | DB    | 10  | LYS  |
| 34  | DB    | 15  | PHE  |
| 34  | DB    | 19  | THR  |
| 34  | DB    | 20  | ARG  |
| 34  | DB    | 26  | MET  |
| 34  | DB    | 27  | LYS  |
| 34  | DB    | 36  | LYS  |
| 34  | DB    | 46  | VAL  |
| 34  | DB    | 53  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | DB    | 59  | ILE  |
| 34  | DB    | 66  | ILE  |
| 34  | DB    | 67  | LEU  |
| 34  | DB    | 72  | LYS  |
| 34  | DB    | 86  | CYS  |
| 34  | DB    | 89  | PHE  |
| 34  | DB    | 94  | ARG  |
| 34  | DB    | 95  | TRP  |
| 34  | DB    | 100 | LEU  |
| 34  | DB    | 101 | THR  |
| 34  | DB    | 104 | LYS  |
| 34  | DB    | 112 | ARG  |
| 34  | DB    | 119 | GLN  |
| 34  | DB    | 125 | PHE  |
| 34  | DB    | 127 | LYS  |
| 34  | DB    | 132 | GLU  |
| 34  | DB    | 134 | LEU  |
| 34  | DB    | 139 | GLU  |
| 34  | DB    | 143 | LEU  |
| 34  | DB    | 145 | ASN  |
| 34  | DB    | 146 | SER  |
| 34  | DB    | 152 | ASP  |
| 34  | DB    | 162 | VAL  |
| 34  | DB    | 168 | GLU  |
| 34  | DB    | 185 | ILE  |
| 34  | DB    | 196 | ASP  |
| 34  | DB    | 199 | ILE  |
| 34  | DB    | 202 | ASN  |
| 34  | DB    | 206 | ILE  |
| 34  | DB    | 224 | ARG  |
| 35  | DC    | 2   | GLN  |
| 35  | DC    | 5   | HIS  |
| 35  | DC    | 10  | ARG  |
| 35  | DC    | 16  | PRO  |
| 35  | DC    | 21  | TRP  |
| 35  | DC    | 22  | PHE  |
| 35  | DC    | 30  | ASP  |
| 35  | DC    | 32  | LEU  |
| 35  | DC    | 56  | ILE  |
| 35  | DC    | 57  | GLU  |
| 35  | DC    | 62  | SER  |
| 35  | DC    | 64  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 35  | DC    | 65  | VAL  |
| 35  | DC    | 67  | ILE  |
| 35  | DC    | 74  | ILE  |
| 35  | DC    | 82  | ASP  |
| 35  | DC    | 83  | VAL  |
| 35  | DC    | 87  | ARG  |
| 35  | DC    | 88  | LYS  |
| 35  | DC    | 96  | VAL  |
| 35  | DC    | 106 | ARG  |
| 35  | DC    | 110 | LEU  |
| 35  | DC    | 119 | ILE  |
| 35  | DC    | 120 | THR  |
| 35  | DC    | 123 | LEU  |
| 35  | DC    | 128 | MET  |
| 35  | DC    | 129 | PHE  |
| 35  | DC    | 130 | ARG  |
| 35  | DC    | 131 | ARG  |
| 35  | DC    | 134 | LYS  |
| 35  | DC    | 138 | GLN  |
| 35  | DC    | 142 | ARG  |
| 35  | DC    | 143 | LEU  |
| 35  | DC    | 161 | ILE  |
| 35  | DC    | 164 | THR  |
| 35  | DC    | 172 | VAL  |
| 35  | DC    | 183 | TYR  |
| 35  | DC    | 189 | HIS  |
| 35  | DC    | 191 | THR  |
| 35  | DC    | 195 | ILE  |
| 36  | DD    | 12  | ARG  |
| 36  | DD    | 16  | THR  |
| 36  | DD    | 20  | LEU  |
| 36  | DD    | 25  | ARG  |
| 36  | DD    | 27  | ILE  |
| 36  | DD    | 29  | THR  |
| 36  | DD    | 30  | LYS  |
| 36  | DD    | 32  | LYS  |
| 36  | DD    | 43  | ARG  |
| 36  | DD    | 50  | TYR  |
| 36  | DD    | 54  | LEU  |
| 36  | DD    | 55  | ARG  |
| 36  | DD    | 57  | LYS  |
| 36  | DD    | 58  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36  | DD    | 69  | ARG  |
| 36  | DD    | 73  | ASN  |
| 36  | DD    | 74  | TYR  |
| 36  | DD    | 80  | ARG  |
| 36  | DD    | 84  | ASN  |
| 36  | DD    | 85  | THR  |
| 36  | DD    | 93  | LEU  |
| 36  | DD    | 101 | VAL  |
| 36  | DD    | 106 | PHE  |
| 36  | DD    | 119 | HIS  |
| 36  | DD    | 127 | ARG  |
| 36  | DD    | 128 | VAL  |
| 36  | DD    | 130 | ASN  |
| 36  | DD    | 131 | ILE  |
| 36  | DD    | 137 | SER  |
| 36  | DD    | 139 | ASN  |
| 36  | DD    | 141 | VAL  |
| 36  | DD    | 142 | VAL  |
| 36  | DD    | 146 | GLU  |
| 36  | DD    | 147 | LYS  |
| 36  | DD    | 149 | LYS  |
| 36  | DD    | 153 | ARG  |
| 36  | DD    | 164 | ARG  |
| 36  | DD    | 170 | LEU  |
| 36  | DD    | 172 | VAL  |
| 36  | DD    | 173 | ASP  |
| 36  | DD    | 181 | PHE  |
| 36  | DD    | 186 | GLU  |
| 36  | DD    | 194 | ILE  |
| 36  | DD    | 195 | ASN  |
| 36  | DD    | 198 | LEU  |
| 36  | DD    | 199 | ILE  |
| 37  | DE    | 11  | GLN  |
| 37  | DE    | 13  | LYS  |
| 37  | DE    | 25  | LYS  |
| 37  | DE    | 29  | ILE  |
| 37  | DE    | 31  | SER  |
| 37  | DE    | 33  | THR  |
| 37  | DE    | 36  | THR  |
| 37  | DE    | 45  | VAL  |
| 37  | DE    | 47  | PHE  |
| 37  | DE    | 53  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 37  | DE    | 54  | GLU  |
| 37  | DE    | 61  | LYS  |
| 37  | DE    | 68  | ARG  |
| 37  | DE    | 70  | MET  |
| 37  | DE    | 80  | LEU  |
| 37  | DE    | 84  | VAL  |
| 37  | DE    | 87  | VAL  |
| 37  | DE    | 92  | ARG  |
| 37  | DE    | 95  | MET  |
| 37  | DE    | 96  | GLN  |
| 37  | DE    | 100 | GLU  |
| 37  | DE    | 104 | ILE  |
| 37  | DE    | 111 | ARG  |
| 37  | DE    | 119 | VAL  |
| 37  | DE    | 120 | HIS  |
| 37  | DE    | 127 | TYR  |
| 37  | DE    | 141 | ASP  |
| 37  | DE    | 144 | GLU  |
| 37  | DE    | 146 | MET  |
| 37  | DE    | 147 | ASN  |
| 37  | DE    | 150 | GLU  |
| 38  | DF    | 6   | ILE  |
| 38  | DF    | 25  | TYR  |
| 38  | DF    | 36  | ILE  |
| 38  | DF    | 39  | LEU  |
| 38  | DF    | 44  | ARG  |
| 38  | DF    | 45  | ARG  |
| 38  | DF    | 46  | GLN  |
| 38  | DF    | 49  | TYR  |
| 38  | DF    | 54  | LEU  |
| 38  | DF    | 58  | HIS  |
| 38  | DF    | 61  | LEU  |
| 38  | DF    | 62  | MET  |
| 38  | DF    | 72  | ASP  |
| 38  | DF    | 74  | LEU  |
| 38  | DF    | 78  | PHE  |
| 38  | DF    | 79  | ARG  |
| 38  | DF    | 80  | PHE  |
| 38  | DF    | 86  | ARG  |
| 38  | DF    | 91  | ARG  |
| 38  | DF    | 96  | VAL  |
| 39  | DG    | 2   | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 39  | DG    | 8   | GLN  |
| 39  | DG    | 9   | ARG  |
| 39  | DG    | 10  | LYS  |
| 39  | DG    | 14  | ASP  |
| 39  | DG    | 16  | LYS  |
| 39  | DG    | 17  | PHE  |
| 39  | DG    | 21  | LEU  |
| 39  | DG    | 44  | SER  |
| 39  | DG    | 46  | LEU  |
| 39  | DG    | 58  | LEU  |
| 39  | DG    | 71  | THR  |
| 39  | DG    | 74  | VAL  |
| 39  | DG    | 75  | LYS  |
| 39  | DG    | 78  | ARG  |
| 39  | DG    | 83  | THR  |
| 39  | DG    | 88  | VAL  |
| 39  | DG    | 89  | GLU  |
| 39  | DG    | 96  | ASN  |
| 39  | DG    | 98  | LEU  |
| 39  | DG    | 100 | MET  |
| 39  | DG    | 109 | LYS  |
| 39  | DG    | 114 | SER  |
| 39  | DG    | 115 | MET  |
| 39  | DG    | 119 | LEU  |
| 39  | DG    | 128 | GLU  |
| 39  | DG    | 129 | ASN  |
| 39  | DG    | 132 | THR  |
| 39  | DG    | 137 | ARG  |
| 39  | DG    | 147 | ASN  |
| 40  | DH    | 3   | GLN  |
| 40  | DH    | 8   | ASP  |
| 40  | DH    | 25  | THR  |
| 40  | DH    | 39  | LEU  |
| 40  | DH    | 41  | GLU  |
| 40  | DH    | 47  | ASP  |
| 40  | DH    | 50  | VAL  |
| 40  | DH    | 58  | LEU  |
| 40  | DH    | 60  | LEU  |
| 40  | DH    | 64  | TYR  |
| 40  | DH    | 66  | GLN  |
| 40  | DH    | 68  | LYS  |
| 40  | DH    | 74  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 40  | DH    | 77  | VAL  |
| 40  | DH    | 82  | LEU  |
| 40  | DH    | 85  | TYR  |
| 40  | DH    | 89  | ASP  |
| 40  | DH    | 91  | LEU  |
| 40  | DH    | 93  | LYS  |
| 40  | DH    | 95  | MET  |
| 40  | DH    | 98  | LEU  |
| 40  | DH    | 107 | LYS  |
| 40  | DH    | 110 | MET  |
| 40  | DH    | 124 | ILE  |
| 40  | DH    | 126 | CYS  |
| 40  | DH    | 127 | TYR  |
| 41  | DI    | 11  | ARG  |
| 41  | DI    | 13  | SER  |
| 41  | DI    | 24  | ASN  |
| 41  | DI    | 29  | ILE  |
| 41  | DI    | 30  | ASN  |
| 41  | DI    | 38  | PHE  |
| 41  | DI    | 42  | THR  |
| 41  | DI    | 45  | MET  |
| 41  | DI    | 51  | LEU  |
| 41  | DI    | 52  | GLU  |
| 41  | DI    | 60  | LEU  |
| 41  | DI    | 62  | LEU  |
| 41  | DI    | 65  | THR  |
| 41  | DI    | 71  | ILE  |
| 41  | DI    | 80  | HIS  |
| 41  | DI    | 87  | MET  |
| 41  | DI    | 92  | SER  |
| 41  | DI    | 93  | LEU  |
| 41  | DI    | 94  | ARG  |
| 41  | DI    | 103 | VAL  |
| 41  | DI    | 108 | ARG  |
| 41  | DI    | 109 | GLN  |
| 41  | DI    | 122 | ARG  |
| 42  | DJ    | 16  | ARG  |
| 42  | DJ    | 17  | LEU  |
| 42  | DJ    | 20  | GLN  |
| 42  | DJ    | 22  | THR  |
| 42  | DJ    | 24  | GLU  |
| 42  | DJ    | 26  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 42  | DJ    | 32  | THR  |
| 42  | DJ    | 37  | ARG  |
| 42  | DJ    | 40  | ILE  |
| 42  | DJ    | 46  | LYS  |
| 42  | DJ    | 57  | VAL  |
| 42  | DJ    | 72  | ARG  |
| 42  | DJ    | 92  | LEU  |
| 42  | DJ    | 96  | VAL  |
| 42  | DJ    | 101 | SER  |
| 43  | DK    | 14  | GLN  |
| 43  | DK    | 17  | ASP  |
| 43  | DK    | 28  | ASN  |
| 43  | DK    | 31  | VAL  |
| 43  | DK    | 34  | THR  |
| 43  | DK    | 36  | ARG  |
| 43  | DK    | 52  | ARG  |
| 43  | DK    | 54  | SER  |
| 43  | DK    | 57  | SER  |
| 43  | DK    | 60  | PHE  |
| 43  | DK    | 63  | GLN  |
| 43  | DK    | 64  | VAL  |
| 43  | DK    | 68  | ARG  |
| 43  | DK    | 75  | GLU  |
| 43  | DK    | 76  | TYR  |
| 43  | DK    | 78  | ILE  |
| 43  | DK    | 82  | GLU  |
| 43  | DK    | 84  | MET  |
| 43  | DK    | 85  | VAL  |
| 43  | DK    | 92  | ARG  |
| 43  | DK    | 100 | ASN  |
| 43  | DK    | 106 | ILE  |
| 43  | DK    | 108 | ASN  |
| 43  | DK    | 109 | ILE  |
| 43  | DK    | 112 | VAL  |
| 43  | DK    | 113 | THR  |
| 43  | DK    | 117 | HIS  |
| 43  | DK    | 126 | ARG  |
| 43  | DK    | 128 | VAL  |
| 44  | DL    | 5   | GLN  |
| 44  | DL    | 17  | LYS  |
| 44  | DL    | 19  | ASN  |
| 44  | DL    | 33  | CYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 44  | DL    | 34  | THR  |
| 44  | DL    | 35  | ARG  |
| 44  | DL    | 39  | THR  |
| 44  | DL    | 40  | THR  |
| 44  | DL    | 43  | LYS  |
| 44  | DL    | 50  | LYS  |
| 44  | DL    | 52  | CYS  |
| 44  | DL    | 69  | GLU  |
| 44  | DL    | 75  | GLU  |
| 44  | DL    | 76  | HIS  |
| 44  | DL    | 78  | VAL  |
| 44  | DL    | 82  | ARG  |
| 44  | DL    | 93  | ARG  |
| 44  | DL    | 96  | THR  |
| 44  | DL    | 97  | VAL  |
| 44  | DL    | 98  | ARG  |
| 44  | DL    | 102 | ASP  |
| 44  | DL    | 110 | LYS  |
| 44  | DL    | 115 | LYS  |
| 44  | DL    | 122 | LYS  |
| 45  | DM    | 15  | VAL  |
| 45  | DM    | 19  | THR  |
| 45  | DM    | 24  | VAL  |
| 45  | DM    | 40  | GLU  |
| 45  | DM    | 47  | LEU  |
| 45  | DM    | 49  | GLU  |
| 45  | DM    | 52  | ILE  |
| 45  | DM    | 64  | VAL  |
| 45  | DM    | 72  | ILE  |
| 45  | DM    | 73  | SER  |
| 45  | DM    | 79  | LEU  |
| 45  | DM    | 91  | ARG  |
| 45  | DM    | 92  | ARG  |
| 45  | DM    | 96  | VAL  |
| 45  | DM    | 100 | ARG  |
| 45  | DM    | 102 | LYS  |
| 45  | DM    | 106 | ARG  |
| 46  | DN    | 2   | LYS  |
| 46  | DN    | 17  | ASP  |
| 46  | DN    | 19  | TYR  |
| 46  | DN    | 26  | LEU  |
| 46  | DN    | 32  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 46  | DN    | 42  | ASN  |
| 46  | DN    | 49  | THR  |
| 46  | DN    | 55  | SER  |
| 46  | DN    | 68  | ARG  |
| 46  | DN    | 73  | LEU  |
| 46  | DN    | 74  | ARG  |
| 46  | DN    | 81  | ILE  |
| 46  | DN    | 82  | LYS  |
| 46  | DN    | 91  | GLU  |
| 46  | DN    | 95  | LEU  |
| 47  | DO    | 2   | LEU  |
| 47  | DO    | 10  | ILE  |
| 47  | DO    | 13  | GLU  |
| 47  | DO    | 14  | PHE  |
| 47  | DO    | 17  | ASP  |
| 47  | DO    | 24  | THR  |
| 47  | DO    | 38  | LEU  |
| 47  | DO    | 39  | GLN  |
| 47  | DO    | 47  | LYS  |
| 47  | DO    | 52  | ARG  |
| 47  | DO    | 53  | ARG  |
| 47  | DO    | 60  | SER  |
| 47  | DO    | 63  | ARG  |
| 47  | DO    | 69  | LEU  |
| 47  | DO    | 79  | ARG  |
| 47  | DO    | 87  | ARG  |
| 48  | DP    | 1   | MET  |
| 48  | DP    | 8   | ARG  |
| 48  | DP    | 14  | ARG  |
| 48  | DP    | 16  | PHE  |
| 48  | DP    | 17  | TYR  |
| 48  | DP    | 19  | VAL  |
| 48  | DP    | 25  | ARG  |
| 48  | DP    | 28  | ARG  |
| 48  | DP    | 31  | ARG  |
| 48  | DP    | 35  | ARG  |
| 48  | DP    | 36  | VAL  |
| 48  | DP    | 39  | PHE  |
| 48  | DP    | 40  | ASN  |
| 48  | DP    | 42  | ILE  |
| 48  | DP    | 54  | LEU  |
| 48  | DP    | 55  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 48  | DP    | 56  | ARG  |
| 48  | DP    | 57  | ILE  |
| 48  | DP    | 61  | VAL  |
| 48  | DP    | 67  | ILE  |
| 48  | DP    | 78  | VAL  |
| 48  | DP    | 79  | ASN  |
| 48  | DP    | 80  | LYS  |
| 49  | DQ    | 5   | ARG  |
| 49  | DQ    | 29  | LYS  |
| 49  | DQ    | 32  | ILE  |
| 49  | DQ    | 40  | THR  |
| 49  | DQ    | 57  | VAL  |
| 49  | DQ    | 60  | ILE  |
| 49  | DQ    | 63  | CYS  |
| 49  | DQ    | 64  | ARG  |
| 49  | DQ    | 66  | LEU  |
| 49  | DQ    | 74  | LEU  |
| 49  | DQ    | 78  | VAL  |
| 49  | DQ    | 79  | GLU  |
| 50  | DR    | 22  | TYR  |
| 50  | DR    | 23  | LYS  |
| 50  | DR    | 25  | ILE  |
| 50  | DR    | 31  | TYR  |
| 50  | DR    | 33  | THR  |
| 50  | DR    | 38  | ILE  |
| 50  | DR    | 42  | ARG  |
| 50  | DR    | 44  | THR  |
| 50  | DR    | 47  | ARG  |
| 50  | DR    | 51  | GLN  |
| 50  | DR    | 54  | LEU  |
| 50  | DR    | 64  | LEU  |
| 50  | DR    | 72  | ARG  |
| 51  | DS    | 4   | LEU  |
| 51  | DS    | 5   | LYS  |
| 51  | DS    | 10  | ILE  |
| 51  | DS    | 15  | LEU  |
| 51  | DS    | 20  | LYS  |
| 51  | DS    | 23  | GLU  |
| 51  | DS    | 26  | ASP  |
| 51  | DS    | 27  | LYS  |
| 51  | DS    | 28  | LYS  |
| 51  | DS    | 35  | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 51  | DS    | 36  | ARG  |
| 51  | DS    | 37  | SER  |
| 51  | DS    | 47  | THR  |
| 51  | DS    | 62  | THR  |
| 51  | DS    | 66  | VAL  |
| 51  | DS    | 73  | PHE  |
| 51  | DS    | 77  | ARG  |
| 51  | DS    | 78  | THR  |
| 52  | DT    | 7   | LYS  |
| 52  | DT    | 14  | GLU  |
| 52  | DT    | 27  | MET  |
| 52  | DT    | 35  | TYR  |
| 52  | DT    | 53  | MET  |
| 52  | DT    | 60  | GLN  |
| 52  | DT    | 67  | HIS  |
| 52  | DT    | 69  | ASN  |
| 53  | DU    | 8   | ASN  |
| 53  | DU    | 9   | GLU  |
| 53  | DU    | 12  | ASP  |
| 53  | DU    | 20  | ARG  |
| 53  | DU    | 24  | LYS  |
| 53  | DU    | 30  | GLU  |
| 53  | DU    | 32  | ARG  |
| 53  | DU    | 33  | ARG  |
| 53  | DU    | 34  | ARG  |
| 53  | DU    | 36  | PHE  |
| 53  | DU    | 38  | GLU  |
| 53  | DU    | 39  | LYS  |
| 53  | DU    | 48  | LYS  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (328) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A0    | 4   | GLN  |
| 1   | A0    | 5   | ASN  |
| 3   | A2    | 16  | HIS  |
| 3   | A2    | 26  | ASN  |
| 4   | A3    | 23  | HIS  |
| 5   | A4    | 13  | ASN  |
| 5   | A4    | 35  | GLN  |
| 5   | A4    | 37  | GLN  |
| 9   | AC    | 43  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | AC    | 85  | ASN  |
| 9   | AC    | 116 | GLN  |
| 9   | AC    | 127 | ASN  |
| 9   | AC    | 141 | HIS  |
| 9   | AC    | 162 | GLN  |
| 9   | AC    | 196 | ASN  |
| 9   | AC    | 199 | HIS  |
| 9   | AC    | 225 | ASN  |
| 10  | AD    | 32  | ASN  |
| 10  | AD    | 36  | GLN  |
| 10  | AD    | 58  | ASN  |
| 10  | AD    | 67  | HIS  |
| 10  | AD    | 148 | GLN  |
| 10  | AD    | 149 | ASN  |
| 10  | AD    | 150 | GLN  |
| 10  | AD    | 167 | ASN  |
| 11  | AE    | 29  | HIS  |
| 11  | AE    | 46  | GLN  |
| 11  | AE    | 90  | GLN  |
| 11  | AE    | 92  | HIS  |
| 11  | AE    | 136 | GLN  |
| 11  | AE    | 165 | HIS  |
| 12  | AF    | 126 | ASN  |
| 13  | AG    | 21  | GLN  |
| 13  | AG    | 100 | ASN  |
| 13  | AG    | 110 | HIS  |
| 13  | AG    | 138 | GLN  |
| 14  | AH    | 2   | GLN  |
| 14  | AH    | 18  | GLN  |
| 14  | AH    | 43  | ASN  |
| 14  | AH    | 73  | ASN  |
| 14  | AH    | 135 | HIS  |
| 15  | AI    | 5   | GLN  |
| 15  | AI    | 11  | GLN  |
| 15  | AI    | 33  | ASN  |
| 16  | AJ    | 40  | HIS  |
| 16  | AJ    | 76  | HIS  |
| 16  | AJ    | 128 | ASN  |
| 16  | AJ    | 132 | HIS  |
| 16  | AJ    | 136 | GLN  |
| 17  | AK    | 5   | GLN  |
| 17  | AK    | 82  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 18  | AL    | 93  | ASN  |
| 18  | AL    | 99  | ASN  |
| 19  | AM    | 13  | HIS  |
| 19  | AM    | 45  | GLN  |
| 19  | AM    | 60  | GLN  |
| 19  | AM    | 88  | ASN  |
| 19  | AM    | 97  | GLN  |
| 20  | AN    | 9   | GLN  |
| 20  | AN    | 16  | HIS  |
| 20  | AN    | 62  | ASN  |
| 21  | AO    | 38  | GLN  |
| 21  | AO    | 98  | GLN  |
| 21  | AO    | 104 | GLN  |
| 21  | AO    | 116 | GLN  |
| 22  | AP    | 65  | ASN  |
| 22  | AP    | 74  | GLN  |
| 23  | AQ    | 13  | HIS  |
| 23  | AQ    | 19  | GLN  |
| 23  | AQ    | 43  | GLN  |
| 23  | AQ    | 55  | GLN  |
| 23  | AQ    | 80  | ASN  |
| 24  | AR    | 18  | GLN  |
| 24  | AR    | 43  | ASN  |
| 24  | AR    | 66  | HIS  |
| 25  | AS    | 40  | ASN  |
| 26  | AT    | 48  | GLN  |
| 26  | AT    | 91  | GLN  |
| 27  | AU    | 39  | ASN  |
| 27  | AU    | 52  | ASN  |
| 27  | AU    | 53  | GLN  |
| 27  | AU    | 65  | GLN  |
| 27  | AU    | 68  | ASN  |
| 28  | AV    | 51  | GLN  |
| 28  | AV    | 78  | GLN  |
| 28  | AV    | 80  | HIS  |
| 29  | AW    | 2   | HIS  |
| 30  | AX    | 25  | GLN  |
| 30  | AX    | 38  | GLN  |
| 30  | AX    | 45  | GLN  |
| 31  | AY    | 8   | GLN  |
| 32  | AZ    | 6   | HIS  |
| 32  | AZ    | 48  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 34  | BB    | 17  | HIS  |
| 34  | BB    | 23  | ASN  |
| 34  | BB    | 35  | ASN  |
| 34  | BB    | 88  | GLN  |
| 34  | BB    | 119 | GLN  |
| 34  | BB    | 121 | GLN  |
| 34  | BB    | 145 | ASN  |
| 34  | BB    | 169 | HIS  |
| 34  | BB    | 202 | ASN  |
| 35  | BC    | 2   | GLN  |
| 35  | BC    | 24  | ASN  |
| 35  | BC    | 40  | GLN  |
| 35  | BC    | 122 | GLN  |
| 35  | BC    | 139 | ASN  |
| 35  | BC    | 184 | ASN  |
| 36  | BD    | 58  | GLN  |
| 36  | BD    | 84  | ASN  |
| 36  | BD    | 88  | ASN  |
| 36  | BD    | 135 | GLN  |
| 36  | BD    | 151 | GLN  |
| 36  | BD    | 195 | ASN  |
| 37  | BE    | 72  | ASN  |
| 37  | BE    | 96  | GLN  |
| 37  | BE    | 120 | HIS  |
| 37  | BE    | 121 | ASN  |
| 37  | BE    | 134 | ASN  |
| 37  | BE    | 147 | ASN  |
| 38  | BF    | 3   | HIS  |
| 38  | BF    | 11  | HIS  |
| 38  | BF    | 14  | GLN  |
| 38  | BF    | 17  | GLN  |
| 38  | BF    | 46  | GLN  |
| 38  | BF    | 63  | ASN  |
| 39  | BG    | 67  | ASN  |
| 39  | BG    | 85  | GLN  |
| 39  | BG    | 121 | ASN  |
| 39  | BG    | 141 | HIS  |
| 40  | BH    | 3   | GLN  |
| 40  | BH    | 37  | ASN  |
| 40  | BH    | 75  | GLN  |
| 41  | BI    | 30  | ASN  |
| 41  | BI    | 31  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 41  | BI    | 36  | GLN  |
| 41  | BI    | 49  | GLN  |
| 41  | BI    | 80  | HIS  |
| 41  | BI    | 109 | GLN  |
| 42  | BJ    | 58  | ASN  |
| 42  | BJ    | 64  | GLN  |
| 42  | BJ    | 99  | GLN  |
| 43  | BK    | 28  | ASN  |
| 44  | BL    | 28  | GLN  |
| 44  | BL    | 45  | ASN  |
| 44  | BL    | 76  | HIS  |
| 44  | BL    | 95  | HIS  |
| 44  | BL    | 111 | GLN  |
| 45  | BM    | 90  | HIS  |
| 45  | BM    | 99  | GLN  |
| 47  | BO    | 34  | GLN  |
| 47  | BO    | 36  | ASN  |
| 47  | BO    | 39  | GLN  |
| 47  | BO    | 41  | HIS  |
| 47  | BO    | 45  | HIS  |
| 47  | BO    | 61  | GLN  |
| 48  | BP    | 18  | GLN  |
| 49  | BQ    | 8   | GLN  |
| 50  | BR    | 51  | GLN  |
| 51  | BS    | 42  | ASN  |
| 51  | BS    | 51  | HIS  |
| 51  | BS    | 55  | GLN  |
| 51  | BS    | 56  | HIS  |
| 51  | BS    | 68  | HIS  |
| 52  | BT    | 2   | ASN  |
| 52  | BT    | 12  | GLN  |
| 52  | BT    | 69  | ASN  |
| 52  | BT    | 83  | ASN  |
| 1   | C0    | 4   | GLN  |
| 1   | C0    | 5   | ASN  |
| 1   | C0    | 37  | HIS  |
| 2   | C1    | 18  | HIS  |
| 2   | C1    | 44  | GLN  |
| 2   | C1    | 45  | HIS  |
| 3   | C2    | 26  | ASN  |
| 5   | C4    | 13  | ASN  |
| 5   | C4    | 37  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | CC    | 43  | ASN  |
| 9   | CC    | 85  | ASN  |
| 9   | CC    | 116 | GLN  |
| 9   | CC    | 127 | ASN  |
| 9   | CC    | 141 | HIS  |
| 9   | CC    | 162 | GLN  |
| 9   | CC    | 196 | ASN  |
| 9   | CC    | 199 | HIS  |
| 9   | CC    | 225 | ASN  |
| 9   | CC    | 231 | HIS  |
| 9   | CC    | 238 | ASN  |
| 10  | CD    | 32  | ASN  |
| 10  | CD    | 36  | GLN  |
| 10  | CD    | 67  | HIS  |
| 10  | CD    | 126 | ASN  |
| 10  | CD    | 140 | HIS  |
| 10  | CD    | 148 | GLN  |
| 10  | CD    | 149 | ASN  |
| 10  | CD    | 150 | GLN  |
| 10  | CD    | 167 | ASN  |
| 10  | CD    | 173 | GLN  |
| 11  | CE    | 24  | ASN  |
| 11  | CE    | 29  | HIS  |
| 11  | CE    | 90  | GLN  |
| 11  | CE    | 115 | GLN  |
| 11  | CE    | 136 | GLN  |
| 11  | CE    | 165 | HIS  |
| 12  | CF    | 36  | ASN  |
| 12  | CF    | 126 | ASN  |
| 13  | CG    | 29  | ASN  |
| 13  | CG    | 100 | ASN  |
| 13  | CG    | 138 | GLN  |
| 15  | CI    | 5   | GLN  |
| 15  | CI    | 30  | GLN  |
| 15  | CI    | 104 | GLN  |
| 15  | CI    | 110 | GLN  |
| 16  | CJ    | 80  | HIS  |
| 16  | CJ    | 128 | ASN  |
| 17  | CK    | 5   | GLN  |
| 17  | CK    | 29  | HIS  |
| 17  | CK    | 82  | ASN  |
| 18  | CL    | 4   | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 18  | CL    | 35  | HIS  |
| 18  | CL    | 93  | ASN  |
| 18  | CL    | 99  | ASN  |
| 18  | CL    | 104 | GLN  |
| 19  | CM    | 13  | HIS  |
| 19  | CM    | 45  | GLN  |
| 19  | CM    | 97  | GLN  |
| 20  | CN    | 16  | HIS  |
| 21  | CO    | 19  | GLN  |
| 21  | CO    | 29  | HIS  |
| 21  | CO    | 98  | GLN  |
| 22  | CP    | 65  | ASN  |
| 22  | CP    | 74  | GLN  |
| 23  | CQ    | 43  | GLN  |
| 23  | CQ    | 51  | GLN  |
| 23  | CQ    | 55  | GLN  |
| 23  | CQ    | 70  | GLN  |
| 23  | CQ    | 80  | ASN  |
| 24  | CR    | 6   | GLN  |
| 24  | CR    | 43  | ASN  |
| 24  | CR    | 82  | HIS  |
| 24  | CR    | 86  | GLN  |
| 24  | CR    | 87  | GLN  |
| 24  | CR    | 89  | HIS  |
| 24  | CR    | 91  | GLN  |
| 25  | CS    | 57  | ASN  |
| 26  | CT    | 48  | GLN  |
| 26  | CT    | 70  | HIS  |
| 27  | CU    | 65  | GLN  |
| 27  | CU    | 98  | ASN  |
| 28  | CV    | 51  | GLN  |
| 28  | CV    | 78  | GLN  |
| 28  | CV    | 80  | HIS  |
| 29  | CW    | 39  | GLN  |
| 29  | CW    | 49  | ASN  |
| 30  | CX    | 20  | ASN  |
| 30  | CX    | 36  | GLN  |
| 30  | CX    | 45  | GLN  |
| 30  | CX    | 58  | ASN  |
| 31  | CY    | 8   | GLN  |
| 31  | CY    | 19  | HIS  |
| 32  | CZ    | 6   | HIS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 32  | CZ    | 30  | HIS  |
| 32  | CZ    | 48  | GLN  |
| 34  | DB    | 14  | HIS  |
| 34  | DB    | 50  | ASN  |
| 34  | DB    | 57  | ASN  |
| 34  | DB    | 119 | GLN  |
| 34  | DB    | 145 | ASN  |
| 34  | DB    | 167 | HIS  |
| 34  | DB    | 202 | ASN  |
| 35  | DC    | 40  | GLN  |
| 35  | DC    | 138 | GLN  |
| 35  | DC    | 189 | HIS  |
| 36  | DD    | 39  | GLN  |
| 36  | DD    | 40  | HIS  |
| 36  | DD    | 58  | GLN  |
| 36  | DD    | 70  | GLN  |
| 36  | DD    | 84  | ASN  |
| 36  | DD    | 88  | ASN  |
| 36  | DD    | 119 | HIS  |
| 36  | DD    | 130 | ASN  |
| 36  | DD    | 163 | GLN  |
| 37  | DE    | 121 | ASN  |
| 37  | DE    | 134 | ASN  |
| 38  | DF    | 11  | HIS  |
| 38  | DF    | 46  | GLN  |
| 39  | DG    | 8   | GLN  |
| 39  | DG    | 51  | GLN  |
| 39  | DG    | 96  | ASN  |
| 39  | DG    | 141 | HIS  |
| 39  | DG    | 152 | HIS  |
| 40  | DH    | 17  | GLN  |
| 40  | DH    | 37  | ASN  |
| 40  | DH    | 66  | GLN  |
| 40  | DH    | 75  | GLN  |
| 41  | DI    | 36  | GLN  |
| 41  | DI    | 109 | GLN  |
| 41  | DI    | 125 | GLN  |
| 42  | DJ    | 20  | GLN  |
| 42  | DJ    | 58  | ASN  |
| 43  | DK    | 28  | ASN  |
| 44  | DL    | 28  | GLN  |
| 44  | DL    | 45  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 44  | DL    | 71  | HIS  |
| 44  | DL    | 95  | HIS  |
| 45  | DM    | 7   | ASN  |
| 45  | DM    | 51  | GLN  |
| 45  | DM    | 90  | HIS  |
| 45  | DM    | 104 | ASN  |
| 46  | DN    | 70  | HIS  |
| 47  | DO    | 34  | GLN  |
| 47  | DO    | 36  | ASN  |
| 47  | DO    | 39  | GLN  |
| 47  | DO    | 41  | HIS  |
| 47  | DO    | 45  | HIS  |
| 47  | DO    | 61  | GLN  |
| 48  | DP    | 9   | HIS  |
| 48  | DP    | 29  | ASN  |
| 48  | DP    | 40  | ASN  |
| 48  | DP    | 59  | HIS  |
| 49  | DQ    | 8   | GLN  |
| 50  | DR    | 51  | GLN  |
| 51  | DS    | 13  | HIS  |
| 51  | DS    | 42  | ASN  |
| 51  | DS    | 55  | GLN  |
| 52  | DT    | 2   | ASN  |
| 52  | DT    | 67  | HIS  |
| 52  | DT    | 69  | ASN  |

### 5.3.3 RNA ⓘ

| Mol | Chain | Analysed        | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 33  | BA    | 1528/1542 (99%) | 618 (40%)         | 204 (13%)       |
| 33  | DA    | 1529/1542 (99%) | 663 (43%)         | 211 (13%)       |
| 7   | AA    | 116/120 (96%)   | 40 (34%)          | 12 (10%)        |
| 7   | CA    | 117/120 (97%)   | 48 (41%)          | 15 (12%)        |
| 8   | AB    | 2839/2904 (97%) | 1140 (40%)        | 396 (13%)       |
| 8   | CB    | 2838/2904 (97%) | 1137 (40%)        | 386 (13%)       |
| All | All   | 8967/9132 (98%) | 3646 (40%)        | 1224 (13%)      |

All (3646) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AA    | 6   | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AA    | 7   | G    |
| 7   | AA    | 9   | G    |
| 7   | AA    | 12  | C    |
| 7   | AA    | 13  | G    |
| 7   | AA    | 14  | U    |
| 7   | AA    | 15  | A    |
| 7   | AA    | 16  | G    |
| 7   | AA    | 24  | G    |
| 7   | AA    | 25  | U    |
| 7   | AA    | 26  | C    |
| 7   | AA    | 27  | C    |
| 7   | AA    | 28  | C    |
| 7   | AA    | 29  | A    |
| 7   | AA    | 30  | C    |
| 7   | AA    | 31  | C    |
| 7   | AA    | 32  | U    |
| 7   | AA    | 35  | C    |
| 7   | AA    | 37  | C    |
| 7   | AA    | 42  | C    |
| 7   | AA    | 43  | C    |
| 7   | AA    | 44  | G    |
| 7   | AA    | 45  | A    |
| 7   | AA    | 46  | A    |
| 7   | AA    | 56  | G    |
| 7   | AA    | 57  | A    |
| 7   | AA    | 62  | C    |
| 7   | AA    | 67  | G    |
| 7   | AA    | 73  | A    |
| 7   | AA    | 77  | U    |
| 7   | AA    | 87  | U    |
| 7   | AA    | 89  | U    |
| 7   | AA    | 90  | C    |
| 7   | AA    | 97  | C    |
| 7   | AA    | 99  | A    |
| 7   | AA    | 102 | G    |
| 7   | AA    | 107 | G    |
| 7   | AA    | 108 | A    |
| 7   | AA    | 109 | A    |
| 7   | AA    | 117 | G    |
| 8   | AB    | 2   | G    |
| 8   | AB    | 4   | U    |
| 8   | AB    | 6   | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 8   | C    |
| 8   | AB    | 15  | G    |
| 8   | AB    | 28  | A    |
| 8   | AB    | 29  | U    |
| 8   | AB    | 34  | U    |
| 8   | AB    | 35  | G    |
| 8   | AB    | 38  | A    |
| 8   | AB    | 42  | A    |
| 8   | AB    | 43  | G    |
| 8   | AB    | 44  | A    |
| 8   | AB    | 45  | G    |
| 8   | AB    | 46  | G    |
| 8   | AB    | 49  | A    |
| 8   | AB    | 50  | U    |
| 8   | AB    | 52  | A    |
| 8   | AB    | 61  | C    |
| 8   | AB    | 63  | A    |
| 8   | AB    | 64  | A    |
| 8   | AB    | 71  | A    |
| 8   | AB    | 72  | U    |
| 8   | AB    | 74  | A    |
| 8   | AB    | 75  | G    |
| 8   | AB    | 79  | C    |
| 8   | AB    | 84  | A    |
| 8   | AB    | 85  | G    |
| 8   | AB    | 86  | G    |
| 8   | AB    | 87  | U    |
| 8   | AB    | 88  | G    |
| 8   | AB    | 91  | A    |
| 8   | AB    | 92  | U    |
| 8   | AB    | 98  | G    |
| 8   | AB    | 99  | U    |
| 8   | AB    | 101 | A    |
| 8   | AB    | 102 | U    |
| 8   | AB    | 103 | A    |
| 8   | AB    | 104 | A    |
| 8   | AB    | 116 | C    |
| 8   | AB    | 117 | G    |
| 8   | AB    | 118 | A    |
| 8   | AB    | 119 | A    |
| 8   | AB    | 120 | U    |
| 8   | AB    | 121 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 124 | G    |
| 8   | AB    | 125 | A    |
| 8   | AB    | 126 | A    |
| 8   | AB    | 127 | A    |
| 8   | AB    | 128 | C    |
| 8   | AB    | 129 | C    |
| 8   | AB    | 130 | C    |
| 8   | AB    | 134 | G    |
| 8   | AB    | 136 | G    |
| 8   | AB    | 139 | U    |
| 8   | AB    | 140 | C    |
| 8   | AB    | 142 | A    |
| 8   | AB    | 143 | C    |
| 8   | AB    | 144 | A    |
| 8   | AB    | 149 | A    |
| 8   | AB    | 156 | A    |
| 8   | AB    | 158 | U    |
| 8   | AB    | 160 | A    |
| 8   | AB    | 162 | U    |
| 8   | AB    | 163 | C    |
| 8   | AB    | 165 | A    |
| 8   | AB    | 166 | U    |
| 8   | AB    | 177 | G    |
| 8   | AB    | 178 | G    |
| 8   | AB    | 180 | G    |
| 8   | AB    | 181 | A    |
| 8   | AB    | 187 | G    |
| 8   | AB    | 188 | G    |
| 8   | AB    | 194 | G    |
| 8   | AB    | 195 | A    |
| 8   | AB    | 196 | A    |
| 8   | AB    | 197 | A    |
| 8   | AB    | 198 | C    |
| 8   | AB    | 199 | A    |
| 8   | AB    | 200 | U    |
| 8   | AB    | 204 | A    |
| 8   | AB    | 205 | G    |
| 8   | AB    | 216 | A    |
| 8   | AB    | 221 | A    |
| 8   | AB    | 222 | A    |
| 8   | AB    | 228 | C    |
| 8   | AB    | 229 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 233 | A    |
| 8   | AB    | 239 | C    |
| 8   | AB    | 240 | C    |
| 8   | AB    | 241 | A    |
| 8   | AB    | 244 | A    |
| 8   | AB    | 245 | G    |
| 8   | AB    | 247 | G    |
| 8   | AB    | 248 | G    |
| 8   | AB    | 250 | G    |
| 8   | AB    | 251 | A    |
| 8   | AB    | 252 | G    |
| 8   | AB    | 254 | G    |
| 8   | AB    | 255 | A    |
| 8   | AB    | 256 | A    |
| 8   | AB    | 261 | G    |
| 8   | AB    | 263 | G    |
| 8   | AB    | 265 | A    |
| 8   | AB    | 266 | G    |
| 8   | AB    | 271 | G    |
| 8   | AB    | 272 | A    |
| 8   | AB    | 276 | U    |
| 8   | AB    | 277 | G    |
| 8   | AB    | 281 | C    |
| 8   | AB    | 282 | A    |
| 8   | AB    | 283 | G    |
| 8   | AB    | 284 | U    |
| 8   | AB    | 288 | U    |
| 8   | AB    | 291 | G    |
| 8   | AB    | 294 | A    |
| 8   | AB    | 295 | G    |
| 8   | AB    | 296 | U    |
| 8   | AB    | 298 | G    |
| 8   | AB    | 299 | A    |
| 8   | AB    | 300 | A    |
| 8   | AB    | 301 | G    |
| 8   | AB    | 302 | C    |
| 8   | AB    | 303 | G    |
| 8   | AB    | 310 | A    |
| 8   | AB    | 311 | A    |
| 8   | AB    | 312 | G    |
| 8   | AB    | 313 | G    |
| 8   | AB    | 318 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 321 | U    |
| 8   | AB    | 322 | A    |
| 8   | AB    | 323 | C    |
| 8   | AB    | 324 | A    |
| 8   | AB    | 325 | G    |
| 8   | AB    | 326 | G    |
| 8   | AB    | 327 | G    |
| 8   | AB    | 328 | U    |
| 8   | AB    | 329 | G    |
| 8   | AB    | 330 | A    |
| 8   | AB    | 331 | C    |
| 8   | AB    | 332 | A    |
| 8   | AB    | 333 | G    |
| 8   | AB    | 334 | C    |
| 8   | AB    | 335 | C    |
| 8   | AB    | 336 | C    |
| 8   | AB    | 338 | G    |
| 8   | AB    | 341 | C    |
| 8   | AB    | 344 | A    |
| 8   | AB    | 345 | A    |
| 8   | AB    | 349 | U    |
| 8   | AB    | 350 | G    |
| 8   | AB    | 352 | A    |
| 8   | AB    | 353 | C    |
| 8   | AB    | 355 | U    |
| 8   | AB    | 356 | G    |
| 8   | AB    | 362 | A    |
| 8   | AB    | 363 | G    |
| 8   | AB    | 364 | C    |
| 8   | AB    | 367 | G    |
| 8   | AB    | 370 | G    |
| 8   | AB    | 371 | A    |
| 8   | AB    | 372 | G    |
| 8   | AB    | 375 | G    |
| 8   | AB    | 379 | G    |
| 8   | AB    | 380 | G    |
| 8   | AB    | 381 | G    |
| 8   | AB    | 386 | G    |
| 8   | AB    | 387 | U    |
| 8   | AB    | 388 | G    |
| 8   | AB    | 391 | A    |
| 8   | AB    | 392 | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 394 | C    |
| 8   | AB    | 395 | U    |
| 8   | AB    | 396 | G    |
| 8   | AB    | 397 | U    |
| 8   | AB    | 399 | U    |
| 8   | AB    | 400 | G    |
| 8   | AB    | 403 | U    |
| 8   | AB    | 404 | A    |
| 8   | AB    | 405 | U    |
| 8   | AB    | 407 | G    |
| 8   | AB    | 409 | G    |
| 8   | AB    | 411 | G    |
| 8   | AB    | 412 | A    |
| 8   | AB    | 422 | A    |
| 8   | AB    | 424 | G    |
| 8   | AB    | 434 | U    |
| 8   | AB    | 435 | C    |
| 8   | AB    | 436 | C    |
| 8   | AB    | 438 | G    |
| 8   | AB    | 444 | C    |
| 8   | AB    | 445 | C    |
| 8   | AB    | 448 | U    |
| 8   | AB    | 449 | A    |
| 8   | AB    | 450 | G    |
| 8   | AB    | 451 | U    |
| 8   | AB    | 455 | C    |
| 8   | AB    | 456 | C    |
| 8   | AB    | 457 | A    |
| 8   | AB    | 458 | G    |
| 8   | AB    | 461 | C    |
| 8   | AB    | 465 | G    |
| 8   | AB    | 466 | A    |
| 8   | AB    | 467 | G    |
| 8   | AB    | 468 | G    |
| 8   | AB    | 469 | G    |
| 8   | AB    | 475 | C    |
| 8   | AB    | 478 | A    |
| 8   | AB    | 479 | A    |
| 8   | AB    | 480 | A    |
| 8   | AB    | 481 | G    |
| 8   | AB    | 483 | A    |
| 8   | AB    | 489 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 490 | C    |
| 8   | AB    | 491 | G    |
| 8   | AB    | 492 | A    |
| 8   | AB    | 493 | G    |
| 8   | AB    | 502 | A    |
| 8   | AB    | 503 | A    |
| 8   | AB    | 504 | A    |
| 8   | AB    | 505 | A    |
| 8   | AB    | 508 | A    |
| 8   | AB    | 509 | C    |
| 8   | AB    | 510 | C    |
| 8   | AB    | 526 | A    |
| 8   | AB    | 527 | C    |
| 8   | AB    | 528 | A    |
| 8   | AB    | 529 | A    |
| 8   | AB    | 530 | G    |
| 8   | AB    | 531 | C    |
| 8   | AB    | 532 | A    |
| 8   | AB    | 533 | G    |
| 8   | AB    | 536 | G    |
| 8   | AB    | 544 | C    |
| 8   | AB    | 546 | U    |
| 8   | AB    | 547 | A    |
| 8   | AB    | 548 | G    |
| 8   | AB    | 549 | G    |
| 8   | AB    | 550 | C    |
| 8   | AB    | 551 | G    |
| 8   | AB    | 556 | A    |
| 8   | AB    | 561 | G    |
| 8   | AB    | 563 | A    |
| 8   | AB    | 564 | C    |
| 8   | AB    | 568 | U    |
| 8   | AB    | 569 | U    |
| 8   | AB    | 571 | U    |
| 8   | AB    | 572 | A    |
| 8   | AB    | 573 | U    |
| 8   | AB    | 574 | A    |
| 8   | AB    | 575 | A    |
| 8   | AB    | 576 | U    |
| 8   | AB    | 577 | G    |
| 8   | AB    | 586 | A    |
| 8   | AB    | 587 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 588 | U    |
| 8   | AB    | 593 | U    |
| 8   | AB    | 594 | U    |
| 8   | AB    | 595 | C    |
| 8   | AB    | 601 | C    |
| 8   | AB    | 603 | A    |
| 8   | AB    | 608 | A    |
| 8   | AB    | 609 | A    |
| 8   | AB    | 613 | A    |
| 8   | AB    | 614 | A    |
| 8   | AB    | 615 | U    |
| 8   | AB    | 616 | A    |
| 8   | AB    | 617 | G    |
| 8   | AB    | 620 | G    |
| 8   | AB    | 627 | A    |
| 8   | AB    | 628 | G    |
| 8   | AB    | 631 | A    |
| 8   | AB    | 632 | A    |
| 8   | AB    | 637 | A    |
| 8   | AB    | 640 | C    |
| 8   | AB    | 645 | C    |
| 8   | AB    | 646 | U    |
| 8   | AB    | 648 | G    |
| 8   | AB    | 653 | U    |
| 8   | AB    | 654 | A    |
| 8   | AB    | 655 | A    |
| 8   | AB    | 656 | G    |
| 8   | AB    | 664 | G    |
| 8   | AB    | 667 | U    |
| 8   | AB    | 669 | G    |
| 8   | AB    | 670 | A    |
| 8   | AB    | 671 | C    |
| 8   | AB    | 673 | C    |
| 8   | AB    | 676 | A    |
| 8   | AB    | 677 | A    |
| 8   | AB    | 678 | C    |
| 8   | AB    | 683 | U    |
| 8   | AB    | 684 | G    |
| 8   | AB    | 685 | A    |
| 8   | AB    | 686 | U    |
| 8   | AB    | 689 | A    |
| 8   | AB    | 690 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 691 | C    |
| 8   | AB    | 698 | C    |
| 8   | AB    | 699 | A    |
| 8   | AB    | 700 | G    |
| 8   | AB    | 707 | G    |
| 8   | AB    | 715 | A    |
| 8   | AB    | 717 | C    |
| 8   | AB    | 718 | A    |
| 8   | AB    | 719 | C    |
| 8   | AB    | 722 | A    |
| 8   | AB    | 726 | G    |
| 8   | AB    | 727 | A    |
| 8   | AB    | 728 | G    |
| 8   | AB    | 729 | G    |
| 8   | AB    | 730 | A    |
| 8   | AB    | 740 | C    |
| 8   | AB    | 741 | U    |
| 8   | AB    | 745 | G    |
| 8   | AB    | 746 | U    |
| 8   | AB    | 747 | U    |
| 8   | AB    | 754 | U    |
| 8   | AB    | 756 | A    |
| 8   | AB    | 761 | A    |
| 8   | AB    | 762 | U    |
| 8   | AB    | 764 | A    |
| 8   | AB    | 765 | C    |
| 8   | AB    | 773 | U    |
| 8   | AB    | 774 | G    |
| 8   | AB    | 775 | G    |
| 8   | AB    | 776 | G    |
| 8   | AB    | 782 | A    |
| 8   | AB    | 784 | G    |
| 8   | AB    | 785 | G    |
| 8   | AB    | 788 | A    |
| 8   | AB    | 789 | A    |
| 8   | AB    | 790 | U    |
| 8   | AB    | 792 | A    |
| 8   | AB    | 793 | A    |
| 8   | AB    | 795 | C    |
| 8   | AB    | 796 | C    |
| 8   | AB    | 797 | G    |
| 8   | AB    | 798 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 799 | G    |
| 8   | AB    | 800 | A    |
| 8   | AB    | 801 | G    |
| 8   | AB    | 802 | A    |
| 8   | AB    | 803 | U    |
| 8   | AB    | 805 | G    |
| 8   | AB    | 806 | C    |
| 8   | AB    | 807 | U    |
| 8   | AB    | 808 | G    |
| 8   | AB    | 809 | G    |
| 8   | AB    | 811 | U    |
| 8   | AB    | 812 | C    |
| 8   | AB    | 819 | A    |
| 8   | AB    | 822 | G    |
| 8   | AB    | 826 | U    |
| 8   | AB    | 827 | U    |
| 8   | AB    | 829 | A    |
| 8   | AB    | 830 | G    |
| 8   | AB    | 833 | A    |
| 8   | AB    | 843 | G    |
| 8   | AB    | 845 | A    |
| 8   | AB    | 846 | U    |
| 8   | AB    | 859 | G    |
| 8   | AB    | 865 | C    |
| 8   | AB    | 866 | A    |
| 8   | AB    | 869 | G    |
| 8   | AB    | 872 | U    |
| 8   | AB    | 874 | G    |
| 8   | AB    | 875 | G    |
| 8   | AB    | 876 | C    |
| 8   | AB    | 877 | A    |
| 8   | AB    | 878 | A    |
| 8   | AB    | 899 | A    |
| 8   | AB    | 900 | A    |
| 8   | AB    | 901 | C    |
| 8   | AB    | 903 | C    |
| 8   | AB    | 904 | G    |
| 8   | AB    | 906 | U    |
| 8   | AB    | 907 | G    |
| 8   | AB    | 908 | C    |
| 8   | AB    | 909 | A    |
| 8   | AB    | 910 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 911  | A    |
| 8   | AB    | 912  | C    |
| 8   | AB    | 915  | C    |
| 8   | AB    | 916  | G    |
| 8   | AB    | 918  | A    |
| 8   | AB    | 919  | U    |
| 8   | AB    | 931  | U    |
| 8   | AB    | 932  | U    |
| 8   | AB    | 933  | A    |
| 8   | AB    | 934  | U    |
| 8   | AB    | 939  | G    |
| 8   | AB    | 941  | A    |
| 8   | AB    | 944  | C    |
| 8   | AB    | 946  | C    |
| 8   | AB    | 949  | G    |
| 8   | AB    | 953  | G    |
| 8   | AB    | 955  | U    |
| 8   | AB    | 961  | C    |
| 8   | AB    | 969  | G    |
| 8   | AB    | 970  | U    |
| 8   | AB    | 973  | A    |
| 8   | AB    | 974  | G    |
| 8   | AB    | 975  | A    |
| 8   | AB    | 976  | G    |
| 8   | AB    | 978  | G    |
| 8   | AB    | 983  | A    |
| 8   | AB    | 986  | C    |
| 8   | AB    | 988  | A    |
| 8   | AB    | 989  | G    |
| 8   | AB    | 990  | A    |
| 8   | AB    | 991  | C    |
| 8   | AB    | 995  | C    |
| 8   | AB    | 996  | A    |
| 8   | AB    | 1005 | C    |
| 8   | AB    | 1008 | A    |
| 8   | AB    | 1011 | G    |
| 8   | AB    | 1012 | U    |
| 8   | AB    | 1013 | C    |
| 8   | AB    | 1017 | G    |
| 8   | AB    | 1019 | U    |
| 8   | AB    | 1020 | A    |
| 8   | AB    | 1021 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1022 | G    |
| 8   | AB    | 1024 | G    |
| 8   | AB    | 1025 | G    |
| 8   | AB    | 1026 | G    |
| 8   | AB    | 1027 | A    |
| 8   | AB    | 1028 | A    |
| 8   | AB    | 1029 | A    |
| 8   | AB    | 1032 | A    |
| 8   | AB    | 1033 | U    |
| 8   | AB    | 1034 | G    |
| 8   | AB    | 1037 | G    |
| 8   | AB    | 1040 | A    |
| 8   | AB    | 1046 | A    |
| 8   | AB    | 1047 | G    |
| 8   | AB    | 1061 | U    |
| 8   | AB    | 1062 | G    |
| 8   | AB    | 1071 | G    |
| 8   | AB    | 1077 | A    |
| 8   | AB    | 1078 | U    |
| 8   | AB    | 1083 | U    |
| 8   | AB    | 1087 | G    |
| 8   | AB    | 1088 | A    |
| 8   | AB    | 1090 | A    |
| 8   | AB    | 1091 | G    |
| 8   | AB    | 1094 | U    |
| 8   | AB    | 1097 | U    |
| 8   | AB    | 1098 | A    |
| 8   | AB    | 1109 | C    |
| 8   | AB    | 1110 | G    |
| 8   | AB    | 1111 | A    |
| 8   | AB    | 1112 | G    |
| 8   | AB    | 1113 | U    |
| 8   | AB    | 1114 | C    |
| 8   | AB    | 1116 | G    |
| 8   | AB    | 1118 | C    |
| 8   | AB    | 1119 | U    |
| 8   | AB    | 1123 | C    |
| 8   | AB    | 1124 | G    |
| 8   | AB    | 1126 | A    |
| 8   | AB    | 1127 | A    |
| 8   | AB    | 1130 | U    |
| 8   | AB    | 1132 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1133 | A    |
| 8   | AB    | 1135 | C    |
| 8   | AB    | 1136 | G    |
| 8   | AB    | 1141 | U    |
| 8   | AB    | 1142 | A    |
| 8   | AB    | 1143 | A    |
| 8   | AB    | 1147 | A    |
| 8   | AB    | 1156 | A    |
| 8   | AB    | 1157 | G    |
| 8   | AB    | 1158 | C    |
| 8   | AB    | 1168 | G    |
| 8   | AB    | 1173 | U    |
| 8   | AB    | 1175 | A    |
| 8   | AB    | 1176 | U    |
| 8   | AB    | 1186 | G    |
| 8   | AB    | 1189 | A    |
| 8   | AB    | 1195 | G    |
| 8   | AB    | 1199 | U    |
| 8   | AB    | 1200 | C    |
| 8   | AB    | 1202 | G    |
| 8   | AB    | 1204 | A    |
| 8   | AB    | 1205 | A    |
| 8   | AB    | 1206 | G    |
| 8   | AB    | 1210 | G    |
| 8   | AB    | 1211 | C    |
| 8   | AB    | 1216 | G    |
| 8   | AB    | 1217 | U    |
| 8   | AB    | 1224 | U    |
| 8   | AB    | 1227 | G    |
| 8   | AB    | 1235 | G    |
| 8   | AB    | 1237 | A    |
| 8   | AB    | 1238 | G    |
| 8   | AB    | 1241 | A    |
| 8   | AB    | 1242 | U    |
| 8   | AB    | 1244 | A    |
| 8   | AB    | 1247 | A    |
| 8   | AB    | 1248 | G    |
| 8   | AB    | 1249 | U    |
| 8   | AB    | 1251 | C    |
| 8   | AB    | 1253 | A    |
| 8   | AB    | 1254 | A    |
| 8   | AB    | 1256 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1257 | C    |
| 8   | AB    | 1258 | U    |
| 8   | AB    | 1264 | A    |
| 8   | AB    | 1265 | A    |
| 8   | AB    | 1266 | G    |
| 8   | AB    | 1269 | A    |
| 8   | AB    | 1270 | C    |
| 8   | AB    | 1271 | G    |
| 8   | AB    | 1272 | A    |
| 8   | AB    | 1273 | U    |
| 8   | AB    | 1274 | A    |
| 8   | AB    | 1275 | A    |
| 8   | AB    | 1276 | A    |
| 8   | AB    | 1284 | A    |
| 8   | AB    | 1286 | A    |
| 8   | AB    | 1287 | A    |
| 8   | AB    | 1288 | G    |
| 8   | AB    | 1289 | C    |
| 8   | AB    | 1291 | C    |
| 8   | AB    | 1296 | G    |
| 8   | AB    | 1297 | C    |
| 8   | AB    | 1299 | G    |
| 8   | AB    | 1300 | G    |
| 8   | AB    | 1301 | A    |
| 8   | AB    | 1302 | A    |
| 8   | AB    | 1305 | C    |
| 8   | AB    | 1312 | U    |
| 8   | AB    | 1321 | A    |
| 8   | AB    | 1322 | A    |
| 8   | AB    | 1325 | U    |
| 8   | AB    | 1326 | U    |
| 8   | AB    | 1328 | A    |
| 8   | AB    | 1329 | U    |
| 8   | AB    | 1333 | G    |
| 8   | AB    | 1337 | G    |
| 8   | AB    | 1340 | U    |
| 8   | AB    | 1341 | G    |
| 8   | AB    | 1342 | A    |
| 8   | AB    | 1345 | C    |
| 8   | AB    | 1348 | C    |
| 8   | AB    | 1351 | C    |
| 8   | AB    | 1352 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1353 | A    |
| 8   | AB    | 1359 | A    |
| 8   | AB    | 1360 | G    |
| 8   | AB    | 1364 | G    |
| 8   | AB    | 1365 | A    |
| 8   | AB    | 1366 | A    |
| 8   | AB    | 1367 | A    |
| 8   | AB    | 1369 | G    |
| 8   | AB    | 1375 | U    |
| 8   | AB    | 1376 | C    |
| 8   | AB    | 1378 | A    |
| 8   | AB    | 1379 | U    |
| 8   | AB    | 1380 | G    |
| 8   | AB    | 1383 | A    |
| 8   | AB    | 1384 | A    |
| 8   | AB    | 1385 | A    |
| 8   | AB    | 1386 | C    |
| 8   | AB    | 1393 | A    |
| 8   | AB    | 1395 | A    |
| 8   | AB    | 1396 | U    |
| 8   | AB    | 1397 | U    |
| 8   | AB    | 1398 | C    |
| 8   | AB    | 1402 | U    |
| 8   | AB    | 1410 | G    |
| 8   | AB    | 1416 | G    |
| 8   | AB    | 1419 | A    |
| 8   | AB    | 1421 | G    |
| 8   | AB    | 1427 | A    |
| 8   | AB    | 1428 | C    |
| 8   | AB    | 1429 | G    |
| 8   | AB    | 1433 | A    |
| 8   | AB    | 1434 | A    |
| 8   | AB    | 1435 | G    |
| 8   | AB    | 1450 | G    |
| 8   | AB    | 1451 | C    |
| 8   | AB    | 1452 | G    |
| 8   | AB    | 1453 | A    |
| 8   | AB    | 1454 | C    |
| 8   | AB    | 1455 | G    |
| 8   | AB    | 1456 | G    |
| 8   | AB    | 1459 | G    |
| 8   | AB    | 1460 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1461 | C    |
| 8   | AB    | 1478 | G    |
| 8   | AB    | 1479 | G    |
| 8   | AB    | 1480 | C    |
| 8   | AB    | 1482 | G    |
| 8   | AB    | 1485 | U    |
| 8   | AB    | 1490 | A    |
| 8   | AB    | 1491 | G    |
| 8   | AB    | 1493 | C    |
| 8   | AB    | 1494 | A    |
| 8   | AB    | 1498 | C    |
| 8   | AB    | 1503 | A    |
| 8   | AB    | 1504 | A    |
| 8   | AB    | 1507 | C    |
| 8   | AB    | 1508 | A    |
| 8   | AB    | 1509 | A    |
| 8   | AB    | 1510 | G    |
| 8   | AB    | 1515 | A    |
| 8   | AB    | 1522 | A    |
| 8   | AB    | 1523 | U    |
| 8   | AB    | 1524 | G    |
| 8   | AB    | 1532 | A    |
| 8   | AB    | 1535 | A    |
| 8   | AB    | 1536 | C    |
| 8   | AB    | 1538 | G    |
| 8   | AB    | 1540 | G    |
| 8   | AB    | 1552 | A    |
| 8   | AB    | 1553 | A    |
| 8   | AB    | 1554 | U    |
| 8   | AB    | 1555 | G    |
| 8   | AB    | 1558 | C    |
| 8   | AB    | 1559 | U    |
| 8   | AB    | 1560 | G    |
| 8   | AB    | 1565 | C    |
| 8   | AB    | 1566 | A    |
| 8   | AB    | 1567 | G    |
| 8   | AB    | 1569 | A    |
| 8   | AB    | 1572 | A    |
| 8   | AB    | 1578 | U    |
| 8   | AB    | 1583 | A    |
| 8   | AB    | 1584 | U    |
| 8   | AB    | 1585 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1599 | U    |
| 8   | AB    | 1601 | G    |
| 8   | AB    | 1602 | U    |
| 8   | AB    | 1607 | C    |
| 8   | AB    | 1608 | A    |
| 8   | AB    | 1609 | A    |
| 8   | AB    | 1610 | A    |
| 8   | AB    | 1614 | A    |
| 8   | AB    | 1616 | A    |
| 8   | AB    | 1617 | C    |
| 8   | AB    | 1618 | A    |
| 8   | AB    | 1619 | G    |
| 8   | AB    | 1621 | U    |
| 8   | AB    | 1632 | A    |
| 8   | AB    | 1633 | G    |
| 8   | AB    | 1634 | A    |
| 8   | AB    | 1635 | A    |
| 8   | AB    | 1636 | U    |
| 8   | AB    | 1640 | A    |
| 8   | AB    | 1644 | C    |
| 8   | AB    | 1647 | U    |
| 8   | AB    | 1648 | U    |
| 8   | AB    | 1654 | A    |
| 8   | AB    | 1663 | G    |
| 8   | AB    | 1664 | A    |
| 8   | AB    | 1673 | G    |
| 8   | AB    | 1674 | G    |
| 8   | AB    | 1677 | A    |
| 8   | AB    | 1678 | A    |
| 8   | AB    | 1682 | G    |
| 8   | AB    | 1683 | U    |
| 8   | AB    | 1692 | U    |
| 8   | AB    | 1693 | U    |
| 8   | AB    | 1694 | C    |
| 8   | AB    | 1695 | G    |
| 8   | AB    | 1696 | G    |
| 8   | AB    | 1697 | G    |
| 8   | AB    | 1698 | A    |
| 8   | AB    | 1700 | A    |
| 8   | AB    | 1701 | A    |
| 8   | AB    | 1703 | G    |
| 8   | AB    | 1707 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1708 | C    |
| 8   | AB    | 1713 | A    |
| 8   | AB    | 1715 | G    |
| 8   | AB    | 1716 | U    |
| 8   | AB    | 1721 | G    |
| 8   | AB    | 1722 | A    |
| 8   | AB    | 1730 | C    |
| 8   | AB    | 1731 | G    |
| 8   | AB    | 1732 | C    |
| 8   | AB    | 1733 | G    |
| 8   | AB    | 1738 | G    |
| 8   | AB    | 1745 | A    |
| 8   | AB    | 1748 | C    |
| 8   | AB    | 1756 | G    |
| 8   | AB    | 1758 | U    |
| 8   | AB    | 1759 | A    |
| 8   | AB    | 1763 | G    |
| 8   | AB    | 1764 | C    |
| 8   | AB    | 1772 | A    |
| 8   | AB    | 1773 | A    |
| 8   | AB    | 1774 | C    |
| 8   | AB    | 1775 | U    |
| 8   | AB    | 1776 | G    |
| 8   | AB    | 1781 | U    |
| 8   | AB    | 1782 | U    |
| 8   | AB    | 1783 | A    |
| 8   | AB    | 1784 | A    |
| 8   | AB    | 1785 | A    |
| 8   | AB    | 1787 | A    |
| 8   | AB    | 1788 | C    |
| 8   | AB    | 1791 | A    |
| 8   | AB    | 1792 | G    |
| 8   | AB    | 1798 | U    |
| 8   | AB    | 1800 | C    |
| 8   | AB    | 1801 | A    |
| 8   | AB    | 1806 | C    |
| 8   | AB    | 1808 | A    |
| 8   | AB    | 1809 | A    |
| 8   | AB    | 1814 | G    |
| 8   | AB    | 1815 | A    |
| 8   | AB    | 1816 | C    |
| 8   | AB    | 1817 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1818 | U    |
| 8   | AB    | 1819 | A    |
| 8   | AB    | 1820 | U    |
| 8   | AB    | 1821 | A    |
| 8   | AB    | 1822 | C    |
| 8   | AB    | 1823 | G    |
| 8   | AB    | 1828 | G    |
| 8   | AB    | 1829 | A    |
| 8   | AB    | 1830 | C    |
| 8   | AB    | 1831 | G    |
| 8   | AB    | 1840 | G    |
| 8   | AB    | 1841 | U    |
| 8   | AB    | 1847 | A    |
| 8   | AB    | 1848 | A    |
| 8   | AB    | 1857 | G    |
| 8   | AB    | 1858 | A    |
| 8   | AB    | 1870 | C    |
| 8   | AB    | 1871 | A    |
| 8   | AB    | 1873 | G    |
| 8   | AB    | 1875 | G    |
| 8   | AB    | 1884 | G    |
| 8   | AB    | 1885 | A    |
| 8   | AB    | 1898 | U    |
| 8   | AB    | 1900 | A    |
| 8   | AB    | 1903 | G    |
| 8   | AB    | 1906 | G    |
| 8   | AB    | 1913 | A    |
| 8   | AB    | 1914 | C    |
| 8   | AB    | 1920 | C    |
| 8   | AB    | 1929 | G    |
| 8   | AB    | 1930 | G    |
| 8   | AB    | 1936 | A    |
| 8   | AB    | 1937 | A    |
| 8   | AB    | 1938 | A    |
| 8   | AB    | 1939 | U    |
| 8   | AB    | 1940 | U    |
| 8   | AB    | 1941 | C    |
| 8   | AB    | 1942 | C    |
| 8   | AB    | 1943 | U    |
| 8   | AB    | 1944 | U    |
| 8   | AB    | 1952 | A    |
| 8   | AB    | 1955 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1956 | U    |
| 8   | AB    | 1960 | A    |
| 8   | AB    | 1965 | C    |
| 8   | AB    | 1966 | A    |
| 8   | AB    | 1967 | C    |
| 8   | AB    | 1968 | G    |
| 8   | AB    | 1970 | A    |
| 8   | AB    | 1971 | U    |
| 8   | AB    | 1972 | G    |
| 8   | AB    | 1973 | G    |
| 8   | AB    | 1974 | C    |
| 8   | AB    | 1975 | G    |
| 8   | AB    | 1976 | U    |
| 8   | AB    | 1977 | A    |
| 8   | AB    | 1987 | A    |
| 8   | AB    | 1989 | G    |
| 8   | AB    | 1991 | U    |
| 8   | AB    | 1992 | G    |
| 8   | AB    | 1993 | U    |
| 8   | AB    | 1996 | C    |
| 8   | AB    | 1997 | C    |
| 8   | AB    | 2003 | A    |
| 8   | AB    | 2004 | G    |
| 8   | AB    | 2012 | G    |
| 8   | AB    | 2014 | A    |
| 8   | AB    | 2015 | A    |
| 8   | AB    | 2017 | U    |
| 8   | AB    | 2020 | A    |
| 8   | AB    | 2021 | C    |
| 8   | AB    | 2022 | U    |
| 8   | AB    | 2023 | C    |
| 8   | AB    | 2025 | C    |
| 8   | AB    | 2026 | U    |
| 8   | AB    | 2030 | A    |
| 8   | AB    | 2031 | A    |
| 8   | AB    | 2032 | G    |
| 8   | AB    | 2033 | A    |
| 8   | AB    | 2035 | G    |
| 8   | AB    | 2039 | U    |
| 8   | AB    | 2040 | G    |
| 8   | AB    | 2042 | A    |
| 8   | AB    | 2043 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2046 | G    |
| 8   | AB    | 2049 | G    |
| 8   | AB    | 2051 | A    |
| 8   | AB    | 2052 | A    |
| 8   | AB    | 2055 | C    |
| 8   | AB    | 2056 | G    |
| 8   | AB    | 2058 | A    |
| 8   | AB    | 2059 | A    |
| 8   | AB    | 2060 | A    |
| 8   | AB    | 2061 | G    |
| 8   | AB    | 2062 | A    |
| 8   | AB    | 2063 | C    |
| 8   | AB    | 2067 | G    |
| 8   | AB    | 2068 | U    |
| 8   | AB    | 2069 | G    |
| 8   | AB    | 2075 | U    |
| 8   | AB    | 2076 | U    |
| 8   | AB    | 2078 | C    |
| 8   | AB    | 2080 | A    |
| 8   | AB    | 2081 | U    |
| 8   | AB    | 2090 | A    |
| 8   | AB    | 2091 | C    |
| 8   | AB    | 2092 | U    |
| 8   | AB    | 2093 | G    |
| 8   | AB    | 2095 | A    |
| 8   | AB    | 2096 | C    |
| 8   | AB    | 2098 | U    |
| 8   | AB    | 2100 | G    |
| 8   | AB    | 2102 | G    |
| 8   | AB    | 2103 | C    |
| 8   | AB    | 2104 | C    |
| 8   | AB    | 2105 | U    |
| 8   | AB    | 2108 | A    |
| 8   | AB    | 2110 | G    |
| 8   | AB    | 2134 | A    |
| 8   | AB    | 2135 | A    |
| 8   | AB    | 2136 | G    |
| 8   | AB    | 2137 | U    |
| 8   | AB    | 2140 | G    |
| 8   | AB    | 2141 | G    |
| 8   | AB    | 2144 | G    |
| 8   | AB    | 2145 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2147 | A    |
| 8   | AB    | 2148 | G    |
| 8   | AB    | 2149 | U    |
| 8   | AB    | 2152 | G    |
| 8   | AB    | 2153 | C    |
| 8   | AB    | 2154 | A    |
| 8   | AB    | 2155 | U    |
| 8   | AB    | 2156 | G    |
| 8   | AB    | 2180 | U    |
| 8   | AB    | 2184 | A    |
| 8   | AB    | 2187 | U    |
| 8   | AB    | 2188 | U    |
| 8   | AB    | 2192 | U    |
| 8   | AB    | 2198 | A    |
| 8   | AB    | 2199 | A    |
| 8   | AB    | 2200 | C    |
| 8   | AB    | 2202 | U    |
| 8   | AB    | 2203 | U    |
| 8   | AB    | 2204 | G    |
| 8   | AB    | 2209 | G    |
| 8   | AB    | 2210 | U    |
| 8   | AB    | 2211 | A    |
| 8   | AB    | 2212 | A    |
| 8   | AB    | 2213 | U    |
| 8   | AB    | 2215 | C    |
| 8   | AB    | 2223 | G    |
| 8   | AB    | 2224 | G    |
| 8   | AB    | 2225 | A    |
| 8   | AB    | 2226 | C    |
| 8   | AB    | 2234 | G    |
| 8   | AB    | 2238 | G    |
| 8   | AB    | 2239 | G    |
| 8   | AB    | 2247 | A    |
| 8   | AB    | 2250 | G    |
| 8   | AB    | 2258 | C    |
| 8   | AB    | 2259 | U    |
| 8   | AB    | 2261 | C    |
| 8   | AB    | 2266 | A    |
| 8   | AB    | 2267 | A    |
| 8   | AB    | 2268 | A    |
| 8   | AB    | 2270 | A    |
| 8   | AB    | 2271 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2275 | C    |
| 8   | AB    | 2277 | G    |
| 8   | AB    | 2278 | A    |
| 8   | AB    | 2281 | A    |
| 8   | AB    | 2282 | G    |
| 8   | AB    | 2283 | C    |
| 8   | AB    | 2285 | C    |
| 8   | AB    | 2287 | A    |
| 8   | AB    | 2289 | G    |
| 8   | AB    | 2297 | A    |
| 8   | AB    | 2303 | G    |
| 8   | AB    | 2304 | G    |
| 8   | AB    | 2305 | U    |
| 8   | AB    | 2307 | G    |
| 8   | AB    | 2308 | G    |
| 8   | AB    | 2309 | A    |
| 8   | AB    | 2310 | C    |
| 8   | AB    | 2312 | U    |
| 8   | AB    | 2320 | U    |
| 8   | AB    | 2321 | U    |
| 8   | AB    | 2322 | A    |
| 8   | AB    | 2325 | G    |
| 8   | AB    | 2326 | C    |
| 8   | AB    | 2327 | A    |
| 8   | AB    | 2328 | A    |
| 8   | AB    | 2333 | A    |
| 8   | AB    | 2334 | U    |
| 8   | AB    | 2335 | A    |
| 8   | AB    | 2336 | A    |
| 8   | AB    | 2337 | G    |
| 8   | AB    | 2338 | C    |
| 8   | AB    | 2344 | U    |
| 8   | AB    | 2345 | G    |
| 8   | AB    | 2347 | C    |
| 8   | AB    | 2352 | A    |
| 8   | AB    | 2353 | G    |
| 8   | AB    | 2358 | A    |
| 8   | AB    | 2359 | C    |
| 8   | AB    | 2360 | G    |
| 8   | AB    | 2361 | G    |
| 8   | AB    | 2363 | G    |
| 8   | AB    | 2366 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2371 | G    |
| 8   | AB    | 2382 | G    |
| 8   | AB    | 2383 | G    |
| 8   | AB    | 2384 | U    |
| 8   | AB    | 2385 | C    |
| 8   | AB    | 2389 | G    |
| 8   | AB    | 2391 | G    |
| 8   | AB    | 2393 | U    |
| 8   | AB    | 2396 | G    |
| 8   | AB    | 2398 | U    |
| 8   | AB    | 2402 | U    |
| 8   | AB    | 2403 | C    |
| 8   | AB    | 2406 | A    |
| 8   | AB    | 2407 | A    |
| 8   | AB    | 2408 | U    |
| 8   | AB    | 2410 | G    |
| 8   | AB    | 2420 | C    |
| 8   | AB    | 2421 | G    |
| 8   | AB    | 2422 | C    |
| 8   | AB    | 2423 | U    |
| 8   | AB    | 2425 | A    |
| 8   | AB    | 2426 | A    |
| 8   | AB    | 2427 | C    |
| 8   | AB    | 2428 | G    |
| 8   | AB    | 2429 | G    |
| 8   | AB    | 2430 | A    |
| 8   | AB    | 2431 | U    |
| 8   | AB    | 2432 | A    |
| 8   | AB    | 2434 | A    |
| 8   | AB    | 2435 | A    |
| 8   | AB    | 2439 | A    |
| 8   | AB    | 2440 | C    |
| 8   | AB    | 2441 | U    |
| 8   | AB    | 2447 | G    |
| 8   | AB    | 2448 | A    |
| 8   | AB    | 2449 | U    |
| 8   | AB    | 2450 | A    |
| 8   | AB    | 2452 | C    |
| 8   | AB    | 2453 | A    |
| 8   | AB    | 2454 | G    |
| 8   | AB    | 2459 | A    |
| 8   | AB    | 2460 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2464 | G    |
| 8   | AB    | 2470 | G    |
| 8   | AB    | 2473 | U    |
| 8   | AB    | 2474 | U    |
| 8   | AB    | 2476 | A    |
| 8   | AB    | 2478 | A    |
| 8   | AB    | 2479 | U    |
| 8   | AB    | 2484 | G    |
| 8   | AB    | 2487 | G    |
| 8   | AB    | 2488 | G    |
| 8   | AB    | 2489 | U    |
| 8   | AB    | 2491 | U    |
| 8   | AB    | 2497 | A    |
| 8   | AB    | 2501 | C    |
| 8   | AB    | 2502 | G    |
| 8   | AB    | 2504 | U    |
| 8   | AB    | 2505 | G    |
| 8   | AB    | 2506 | U    |
| 8   | AB    | 2512 | C    |
| 8   | AB    | 2513 | A    |
| 8   | AB    | 2514 | U    |
| 8   | AB    | 2516 | A    |
| 8   | AB    | 2517 | C    |
| 8   | AB    | 2518 | A    |
| 8   | AB    | 2520 | C    |
| 8   | AB    | 2521 | C    |
| 8   | AB    | 2523 | G    |
| 8   | AB    | 2525 | G    |
| 8   | AB    | 2526 | G    |
| 8   | AB    | 2529 | G    |
| 8   | AB    | 2530 | A    |
| 8   | AB    | 2534 | A    |
| 8   | AB    | 2535 | G    |
| 8   | AB    | 2540 | C    |
| 8   | AB    | 2542 | A    |
| 8   | AB    | 2543 | G    |
| 8   | AB    | 2547 | A    |
| 8   | AB    | 2550 | G    |
| 8   | AB    | 2552 | U    |
| 8   | AB    | 2554 | U    |
| 8   | AB    | 2556 | C    |
| 8   | AB    | 2562 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2563 | U    |
| 8   | AB    | 2566 | A    |
| 8   | AB    | 2567 | G    |
| 8   | AB    | 2572 | A    |
| 8   | AB    | 2573 | C    |
| 8   | AB    | 2574 | G    |
| 8   | AB    | 2575 | C    |
| 8   | AB    | 2576 | G    |
| 8   | AB    | 2577 | A    |
| 8   | AB    | 2581 | G    |
| 8   | AB    | 2582 | G    |
| 8   | AB    | 2585 | U    |
| 8   | AB    | 2586 | U    |
| 8   | AB    | 2588 | G    |
| 8   | AB    | 2589 | A    |
| 8   | AB    | 2592 | G    |
| 8   | AB    | 2593 | U    |
| 8   | AB    | 2594 | C    |
| 8   | AB    | 2595 | G    |
| 8   | AB    | 2596 | U    |
| 8   | AB    | 2609 | U    |
| 8   | AB    | 2610 | C    |
| 8   | AB    | 2612 | C    |
| 8   | AB    | 2613 | U    |
| 8   | AB    | 2614 | A    |
| 8   | AB    | 2615 | U    |
| 8   | AB    | 2618 | G    |
| 8   | AB    | 2619 | C    |
| 8   | AB    | 2623 | G    |
| 8   | AB    | 2624 | G    |
| 8   | AB    | 2628 | C    |
| 8   | AB    | 2629 | U    |
| 8   | AB    | 2630 | G    |
| 8   | AB    | 2634 | A    |
| 8   | AB    | 2639 | A    |
| 8   | AB    | 2640 | G    |
| 8   | AB    | 2641 | G    |
| 8   | AB    | 2646 | C    |
| 8   | AB    | 2654 | A    |
| 8   | AB    | 2656 | U    |
| 8   | AB    | 2663 | G    |
| 8   | AB    | 2672 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2673 | G    |
| 8   | AB    | 2675 | A    |
| 8   | AB    | 2681 | C    |
| 8   | AB    | 2682 | A    |
| 8   | AB    | 2683 | C    |
| 8   | AB    | 2684 | U    |
| 8   | AB    | 2689 | U    |
| 8   | AB    | 2690 | U    |
| 8   | AB    | 2691 | C    |
| 8   | AB    | 2694 | G    |
| 8   | AB    | 2707 | U    |
| 8   | AB    | 2712 | C    |
| 8   | AB    | 2714 | G    |
| 8   | AB    | 2717 | C    |
| 8   | AB    | 2718 | G    |
| 8   | AB    | 2719 | G    |
| 8   | AB    | 2720 | U    |
| 8   | AB    | 2721 | A    |
| 8   | AB    | 2724 | U    |
| 8   | AB    | 2725 | A    |
| 8   | AB    | 2726 | A    |
| 8   | AB    | 2727 | A    |
| 8   | AB    | 2732 | G    |
| 8   | AB    | 2733 | A    |
| 8   | AB    | 2736 | A    |
| 8   | AB    | 2740 | A    |
| 8   | AB    | 2744 | G    |
| 8   | AB    | 2746 | U    |
| 8   | AB    | 2748 | A    |
| 8   | AB    | 2750 | A    |
| 8   | AB    | 2751 | G    |
| 8   | AB    | 2752 | C    |
| 8   | AB    | 2754 | U    |
| 8   | AB    | 2756 | U    |
| 8   | AB    | 2757 | A    |
| 8   | AB    | 2758 | A    |
| 8   | AB    | 2760 | C    |
| 8   | AB    | 2761 | A    |
| 8   | AB    | 2762 | C    |
| 8   | AB    | 2763 | G    |
| 8   | AB    | 2764 | A    |
| 8   | AB    | 2765 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2766 | A    |
| 8   | AB    | 2767 | C    |
| 8   | AB    | 2771 | C    |
| 8   | AB    | 2778 | A    |
| 8   | AB    | 2779 | U    |
| 8   | AB    | 2790 | U    |
| 8   | AB    | 2791 | G    |
| 8   | AB    | 2797 | U    |
| 8   | AB    | 2798 | U    |
| 8   | AB    | 2799 | A    |
| 8   | AB    | 2800 | A    |
| 8   | AB    | 2801 | G    |
| 8   | AB    | 2808 | G    |
| 8   | AB    | 2818 | U    |
| 8   | AB    | 2820 | A    |
| 8   | AB    | 2821 | A    |
| 8   | AB    | 2825 | G    |
| 8   | AB    | 2828 | G    |
| 8   | AB    | 2829 | A    |
| 8   | AB    | 2832 | U    |
| 8   | AB    | 2833 | U    |
| 8   | AB    | 2834 | G    |
| 8   | AB    | 2836 | U    |
| 8   | AB    | 2837 | A    |
| 8   | AB    | 2838 | G    |
| 8   | AB    | 2839 | G    |
| 8   | AB    | 2842 | G    |
| 8   | AB    | 2848 | G    |
| 8   | AB    | 2850 | A    |
| 8   | AB    | 2856 | A    |
| 8   | AB    | 2859 | G    |
| 8   | AB    | 2860 | A    |
| 8   | AB    | 2861 | U    |
| 8   | AB    | 2867 | G    |
| 8   | AB    | 2868 | A    |
| 8   | AB    | 2872 | A    |
| 8   | AB    | 2874 | C    |
| 8   | AB    | 2884 | U    |
| 8   | AB    | 2885 | G    |
| 8   | AB    | 2891 | U    |
| 8   | AB    | 2893 | A    |
| 8   | AB    | 2894 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2897 | U    |
| 8   | AB    | 2901 | C    |
| 8   | AB    | 2903 | U    |
| 33  | BA    | 6    | G    |
| 33  | BA    | 7    | A    |
| 33  | BA    | 9    | G    |
| 33  | BA    | 14   | U    |
| 33  | BA    | 15   | G    |
| 33  | BA    | 21   | G    |
| 33  | BA    | 27   | G    |
| 33  | BA    | 31   | G    |
| 33  | BA    | 32   | A    |
| 33  | BA    | 34   | C    |
| 33  | BA    | 37   | U    |
| 33  | BA    | 39   | G    |
| 33  | BA    | 40   | C    |
| 33  | BA    | 41   | G    |
| 33  | BA    | 47   | C    |
| 33  | BA    | 48   | C    |
| 33  | BA    | 49   | U    |
| 33  | BA    | 50   | A    |
| 33  | BA    | 51   | A    |
| 33  | BA    | 52   | C    |
| 33  | BA    | 55   | A    |
| 33  | BA    | 58   | C    |
| 33  | BA    | 59   | A    |
| 33  | BA    | 60   | A    |
| 33  | BA    | 61   | G    |
| 33  | BA    | 64   | G    |
| 33  | BA    | 71   | A    |
| 33  | BA    | 72   | A    |
| 33  | BA    | 74   | A    |
| 33  | BA    | 82   | G    |
| 33  | BA    | 83   | C    |
| 33  | BA    | 84   | U    |
| 33  | BA    | 85   | U    |
| 33  | BA    | 86   | G    |
| 33  | BA    | 87   | C    |
| 33  | BA    | 90   | C    |
| 33  | BA    | 92   | U    |
| 33  | BA    | 94   | G    |
| 33  | BA    | 95   | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 101 | A    |
| 33  | BA    | 107 | G    |
| 33  | BA    | 108 | G    |
| 33  | BA    | 109 | A    |
| 33  | BA    | 110 | C    |
| 33  | BA    | 115 | G    |
| 33  | BA    | 119 | A    |
| 33  | BA    | 120 | A    |
| 33  | BA    | 121 | U    |
| 33  | BA    | 122 | G    |
| 33  | BA    | 128 | G    |
| 33  | BA    | 129 | A    |
| 33  | BA    | 130 | A    |
| 33  | BA    | 131 | A    |
| 33  | BA    | 132 | C    |
| 33  | BA    | 146 | G    |
| 33  | BA    | 151 | A    |
| 33  | BA    | 155 | A    |
| 33  | BA    | 160 | A    |
| 33  | BA    | 164 | G    |
| 33  | BA    | 166 | U    |
| 33  | BA    | 174 | A    |
| 33  | BA    | 181 | A    |
| 33  | BA    | 182 | A    |
| 33  | BA    | 183 | C    |
| 33  | BA    | 189 | A    |
| 33  | BA    | 190 | A    |
| 33  | BA    | 196 | A    |
| 33  | BA    | 197 | A    |
| 33  | BA    | 198 | G    |
| 33  | BA    | 200 | G    |
| 33  | BA    | 209 | U    |
| 33  | BA    | 210 | C    |
| 33  | BA    | 213 | G    |
| 33  | BA    | 221 | C    |
| 33  | BA    | 226 | G    |
| 33  | BA    | 232 | G    |
| 33  | BA    | 235 | C    |
| 33  | BA    | 239 | U    |
| 33  | BA    | 240 | G    |
| 33  | BA    | 243 | A    |
| 33  | BA    | 244 | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 245 | U    |
| 33  | BA    | 246 | A    |
| 33  | BA    | 247 | G    |
| 33  | BA    | 248 | C    |
| 33  | BA    | 249 | U    |
| 33  | BA    | 250 | A    |
| 33  | BA    | 251 | G    |
| 33  | BA    | 252 | U    |
| 33  | BA    | 253 | A    |
| 33  | BA    | 257 | G    |
| 33  | BA    | 258 | G    |
| 33  | BA    | 266 | G    |
| 33  | BA    | 267 | C    |
| 33  | BA    | 268 | U    |
| 33  | BA    | 271 | C    |
| 33  | BA    | 275 | G    |
| 33  | BA    | 279 | A    |
| 33  | BA    | 280 | C    |
| 33  | BA    | 289 | G    |
| 33  | BA    | 293 | G    |
| 33  | BA    | 301 | G    |
| 33  | BA    | 306 | A    |
| 33  | BA    | 308 | C    |
| 33  | BA    | 317 | U    |
| 33  | BA    | 327 | A    |
| 33  | BA    | 328 | C    |
| 33  | BA    | 329 | A    |
| 33  | BA    | 330 | C    |
| 33  | BA    | 332 | G    |
| 33  | BA    | 338 | A    |
| 33  | BA    | 339 | C    |
| 33  | BA    | 340 | U    |
| 33  | BA    | 344 | A    |
| 33  | BA    | 345 | C    |
| 33  | BA    | 346 | G    |
| 33  | BA    | 350 | G    |
| 33  | BA    | 351 | G    |
| 33  | BA    | 352 | C    |
| 33  | BA    | 353 | A    |
| 33  | BA    | 354 | G    |
| 33  | BA    | 355 | C    |
| 33  | BA    | 363 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 364 | A    |
| 33  | BA    | 367 | U    |
| 33  | BA    | 372 | C    |
| 33  | BA    | 373 | A    |
| 33  | BA    | 374 | A    |
| 33  | BA    | 381 | C    |
| 33  | BA    | 382 | A    |
| 33  | BA    | 383 | A    |
| 33  | BA    | 384 | G    |
| 33  | BA    | 387 | U    |
| 33  | BA    | 388 | G    |
| 33  | BA    | 389 | A    |
| 33  | BA    | 391 | G    |
| 33  | BA    | 392 | C    |
| 33  | BA    | 393 | A    |
| 33  | BA    | 398 | U    |
| 33  | BA    | 399 | G    |
| 33  | BA    | 401 | C    |
| 33  | BA    | 403 | C    |
| 33  | BA    | 405 | U    |
| 33  | BA    | 406 | G    |
| 33  | BA    | 408 | A    |
| 33  | BA    | 409 | U    |
| 33  | BA    | 411 | A    |
| 33  | BA    | 412 | A    |
| 33  | BA    | 413 | G    |
| 33  | BA    | 414 | A    |
| 33  | BA    | 420 | U    |
| 33  | BA    | 421 | U    |
| 33  | BA    | 422 | C    |
| 33  | BA    | 423 | G    |
| 33  | BA    | 424 | G    |
| 33  | BA    | 425 | G    |
| 33  | BA    | 428 | G    |
| 33  | BA    | 429 | U    |
| 33  | BA    | 430 | A    |
| 33  | BA    | 431 | A    |
| 33  | BA    | 434 | U    |
| 33  | BA    | 435 | A    |
| 33  | BA    | 438 | U    |
| 33  | BA    | 446 | G    |
| 33  | BA    | 451 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 453 | G    |
| 33  | BA    | 454 | G    |
| 33  | BA    | 455 | G    |
| 33  | BA    | 457 | G    |
| 33  | BA    | 460 | A    |
| 33  | BA    | 461 | A    |
| 33  | BA    | 462 | G    |
| 33  | BA    | 463 | U    |
| 33  | BA    | 464 | U    |
| 33  | BA    | 465 | A    |
| 33  | BA    | 466 | A    |
| 33  | BA    | 467 | U    |
| 33  | BA    | 468 | A    |
| 33  | BA    | 469 | C    |
| 33  | BA    | 481 | G    |
| 33  | BA    | 482 | A    |
| 33  | BA    | 484 | G    |
| 33  | BA    | 485 | U    |
| 33  | BA    | 486 | U    |
| 33  | BA    | 491 | G    |
| 33  | BA    | 493 | A    |
| 33  | BA    | 495 | A    |
| 33  | BA    | 496 | A    |
| 33  | BA    | 500 | G    |
| 33  | BA    | 508 | U    |
| 33  | BA    | 509 | A    |
| 33  | BA    | 510 | A    |
| 33  | BA    | 511 | C    |
| 33  | BA    | 512 | U    |
| 33  | BA    | 513 | C    |
| 33  | BA    | 517 | G    |
| 33  | BA    | 518 | C    |
| 33  | BA    | 519 | C    |
| 33  | BA    | 521 | G    |
| 33  | BA    | 527 | G    |
| 33  | BA    | 529 | G    |
| 33  | BA    | 530 | G    |
| 33  | BA    | 532 | A    |
| 33  | BA    | 533 | A    |
| 33  | BA    | 534 | U    |
| 33  | BA    | 535 | A    |
| 33  | BA    | 536 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 540 | G    |
| 33  | BA    | 543 | U    |
| 33  | BA    | 545 | C    |
| 33  | BA    | 546 | A    |
| 33  | BA    | 547 | A    |
| 33  | BA    | 548 | G    |
| 33  | BA    | 559 | A    |
| 33  | BA    | 560 | A    |
| 33  | BA    | 561 | U    |
| 33  | BA    | 562 | U    |
| 33  | BA    | 564 | C    |
| 33  | BA    | 566 | G    |
| 33  | BA    | 571 | U    |
| 33  | BA    | 572 | A    |
| 33  | BA    | 573 | A    |
| 33  | BA    | 575 | G    |
| 33  | BA    | 576 | C    |
| 33  | BA    | 577 | G    |
| 33  | BA    | 579 | A    |
| 33  | BA    | 580 | C    |
| 33  | BA    | 582 | C    |
| 33  | BA    | 588 | G    |
| 33  | BA    | 589 | U    |
| 33  | BA    | 594 | U    |
| 33  | BA    | 595 | A    |
| 33  | BA    | 596 | A    |
| 33  | BA    | 604 | G    |
| 33  | BA    | 605 | U    |
| 33  | BA    | 606 | G    |
| 33  | BA    | 607 | A    |
| 33  | BA    | 610 | U    |
| 33  | BA    | 620 | C    |
| 33  | BA    | 623 | C    |
| 33  | BA    | 641 | U    |
| 33  | BA    | 642 | A    |
| 33  | BA    | 643 | C    |
| 33  | BA    | 645 | G    |
| 33  | BA    | 646 | G    |
| 33  | BA    | 650 | G    |
| 33  | BA    | 652 | U    |
| 33  | BA    | 653 | U    |
| 33  | BA    | 654 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 663 | A    |
| 33  | BA    | 665 | A    |
| 33  | BA    | 666 | G    |
| 33  | BA    | 671 | G    |
| 33  | BA    | 672 | U    |
| 33  | BA    | 677 | U    |
| 33  | BA    | 678 | U    |
| 33  | BA    | 679 | C    |
| 33  | BA    | 680 | C    |
| 33  | BA    | 681 | A    |
| 33  | BA    | 682 | G    |
| 33  | BA    | 683 | G    |
| 33  | BA    | 687 | A    |
| 33  | BA    | 693 | G    |
| 33  | BA    | 694 | A    |
| 33  | BA    | 700 | G    |
| 33  | BA    | 702 | A    |
| 33  | BA    | 704 | A    |
| 33  | BA    | 706 | A    |
| 33  | BA    | 707 | U    |
| 33  | BA    | 710 | G    |
| 33  | BA    | 711 | G    |
| 33  | BA    | 712 | A    |
| 33  | BA    | 713 | G    |
| 33  | BA    | 718 | A    |
| 33  | BA    | 721 | G    |
| 33  | BA    | 723 | U    |
| 33  | BA    | 724 | G    |
| 33  | BA    | 730 | G    |
| 33  | BA    | 731 | G    |
| 33  | BA    | 734 | G    |
| 33  | BA    | 736 | C    |
| 33  | BA    | 739 | C    |
| 33  | BA    | 741 | G    |
| 33  | BA    | 747 | A    |
| 33  | BA    | 748 | G    |
| 33  | BA    | 751 | U    |
| 33  | BA    | 753 | A    |
| 33  | BA    | 754 | C    |
| 33  | BA    | 755 | G    |
| 33  | BA    | 757 | U    |
| 33  | BA    | 759 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 765 | G    |
| 33  | BA    | 770 | C    |
| 33  | BA    | 777 | A    |
| 33  | BA    | 779 | C    |
| 33  | BA    | 781 | A    |
| 33  | BA    | 782 | A    |
| 33  | BA    | 785 | G    |
| 33  | BA    | 787 | A    |
| 33  | BA    | 790 | A    |
| 33  | BA    | 793 | U    |
| 33  | BA    | 794 | A    |
| 33  | BA    | 796 | C    |
| 33  | BA    | 798 | U    |
| 33  | BA    | 799 | G    |
| 33  | BA    | 803 | G    |
| 33  | BA    | 804 | U    |
| 33  | BA    | 805 | C    |
| 33  | BA    | 807 | A    |
| 33  | BA    | 812 | G    |
| 33  | BA    | 815 | A    |
| 33  | BA    | 816 | A    |
| 33  | BA    | 817 | C    |
| 33  | BA    | 818 | G    |
| 33  | BA    | 821 | G    |
| 33  | BA    | 825 | A    |
| 33  | BA    | 826 | C    |
| 33  | BA    | 827 | U    |
| 33  | BA    | 828 | U    |
| 33  | BA    | 829 | G    |
| 33  | BA    | 835 | U    |
| 33  | BA    | 837 | U    |
| 33  | BA    | 841 | C    |
| 33  | BA    | 842 | U    |
| 33  | BA    | 843 | U    |
| 33  | BA    | 844 | G    |
| 33  | BA    | 845 | A    |
| 33  | BA    | 846 | G    |
| 33  | BA    | 849 | G    |
| 33  | BA    | 855 | U    |
| 33  | BA    | 860 | A    |
| 33  | BA    | 864 | A    |
| 33  | BA    | 865 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 867 | G    |
| 33  | BA    | 871 | U    |
| 33  | BA    | 872 | A    |
| 33  | BA    | 873 | A    |
| 33  | BA    | 876 | C    |
| 33  | BA    | 877 | G    |
| 33  | BA    | 878 | A    |
| 33  | BA    | 882 | C    |
| 33  | BA    | 885 | G    |
| 33  | BA    | 888 | G    |
| 33  | BA    | 889 | A    |
| 33  | BA    | 890 | G    |
| 33  | BA    | 891 | U    |
| 33  | BA    | 899 | C    |
| 33  | BA    | 900 | A    |
| 33  | BA    | 906 | A    |
| 33  | BA    | 907 | A    |
| 33  | BA    | 908 | A    |
| 33  | BA    | 910 | C    |
| 33  | BA    | 913 | A    |
| 33  | BA    | 914 | A    |
| 33  | BA    | 920 | U    |
| 33  | BA    | 922 | G    |
| 33  | BA    | 926 | G    |
| 33  | BA    | 927 | G    |
| 33  | BA    | 931 | C    |
| 33  | BA    | 932 | C    |
| 33  | BA    | 934 | C    |
| 33  | BA    | 935 | A    |
| 33  | BA    | 939 | G    |
| 33  | BA    | 940 | C    |
| 33  | BA    | 947 | G    |
| 33  | BA    | 954 | G    |
| 33  | BA    | 955 | U    |
| 33  | BA    | 958 | A    |
| 33  | BA    | 960 | U    |
| 33  | BA    | 961 | U    |
| 33  | BA    | 966 | G    |
| 33  | BA    | 968 | A    |
| 33  | BA    | 969 | A    |
| 33  | BA    | 971 | G    |
| 33  | BA    | 972 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 974  | A    |
| 33  | BA    | 975  | A    |
| 33  | BA    | 976  | G    |
| 33  | BA    | 977  | A    |
| 33  | BA    | 980  | C    |
| 33  | BA    | 982  | U    |
| 33  | BA    | 983  | A    |
| 33  | BA    | 986  | U    |
| 33  | BA    | 991  | U    |
| 33  | BA    | 992  | U    |
| 33  | BA    | 993  | G    |
| 33  | BA    | 994  | A    |
| 33  | BA    | 1002 | G    |
| 33  | BA    | 1004 | A    |
| 33  | BA    | 1006 | G    |
| 33  | BA    | 1009 | U    |
| 33  | BA    | 1011 | C    |
| 33  | BA    | 1019 | A    |
| 33  | BA    | 1022 | A    |
| 33  | BA    | 1025 | U    |
| 33  | BA    | 1028 | C    |
| 33  | BA    | 1030 | U    |
| 33  | BA    | 1031 | C    |
| 33  | BA    | 1032 | G    |
| 33  | BA    | 1033 | G    |
| 33  | BA    | 1034 | G    |
| 33  | BA    | 1035 | A    |
| 33  | BA    | 1036 | A    |
| 33  | BA    | 1044 | A    |
| 33  | BA    | 1045 | C    |
| 33  | BA    | 1049 | U    |
| 33  | BA    | 1050 | G    |
| 33  | BA    | 1051 | C    |
| 33  | BA    | 1052 | U    |
| 33  | BA    | 1053 | G    |
| 33  | BA    | 1054 | C    |
| 33  | BA    | 1055 | A    |
| 33  | BA    | 1056 | U    |
| 33  | BA    | 1063 | C    |
| 33  | BA    | 1064 | G    |
| 33  | BA    | 1065 | U    |
| 33  | BA    | 1066 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 1067 | A    |
| 33  | BA    | 1068 | G    |
| 33  | BA    | 1072 | G    |
| 33  | BA    | 1074 | G    |
| 33  | BA    | 1075 | U    |
| 33  | BA    | 1076 | U    |
| 33  | BA    | 1077 | G    |
| 33  | BA    | 1080 | A    |
| 33  | BA    | 1081 | A    |
| 33  | BA    | 1085 | U    |
| 33  | BA    | 1086 | U    |
| 33  | BA    | 1089 | G    |
| 33  | BA    | 1090 | U    |
| 33  | BA    | 1094 | G    |
| 33  | BA    | 1095 | U    |
| 33  | BA    | 1099 | G    |
| 33  | BA    | 1100 | C    |
| 33  | BA    | 1101 | A    |
| 33  | BA    | 1102 | A    |
| 33  | BA    | 1103 | C    |
| 33  | BA    | 1104 | G    |
| 33  | BA    | 1108 | G    |
| 33  | BA    | 1109 | C    |
| 33  | BA    | 1111 | A    |
| 33  | BA    | 1114 | C    |
| 33  | BA    | 1116 | U    |
| 33  | BA    | 1118 | U    |
| 33  | BA    | 1123 | U    |
| 33  | BA    | 1124 | G    |
| 33  | BA    | 1125 | U    |
| 33  | BA    | 1126 | U    |
| 33  | BA    | 1127 | G    |
| 33  | BA    | 1129 | C    |
| 33  | BA    | 1130 | A    |
| 33  | BA    | 1132 | C    |
| 33  | BA    | 1136 | C    |
| 33  | BA    | 1137 | C    |
| 33  | BA    | 1138 | G    |
| 33  | BA    | 1139 | G    |
| 33  | BA    | 1143 | G    |
| 33  | BA    | 1144 | G    |
| 33  | BA    | 1145 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 1146 | A    |
| 33  | BA    | 1152 | A    |
| 33  | BA    | 1155 | A    |
| 33  | BA    | 1157 | A    |
| 33  | BA    | 1158 | C    |
| 33  | BA    | 1166 | G    |
| 33  | BA    | 1168 | U    |
| 33  | BA    | 1174 | G    |
| 33  | BA    | 1176 | A    |
| 33  | BA    | 1178 | G    |
| 33  | BA    | 1179 | A    |
| 33  | BA    | 1181 | G    |
| 33  | BA    | 1182 | G    |
| 33  | BA    | 1183 | U    |
| 33  | BA    | 1184 | G    |
| 33  | BA    | 1185 | G    |
| 33  | BA    | 1190 | G    |
| 33  | BA    | 1191 | A    |
| 33  | BA    | 1192 | C    |
| 33  | BA    | 1196 | A    |
| 33  | BA    | 1197 | A    |
| 33  | BA    | 1200 | C    |
| 33  | BA    | 1201 | A    |
| 33  | BA    | 1202 | U    |
| 33  | BA    | 1203 | C    |
| 33  | BA    | 1212 | U    |
| 33  | BA    | 1213 | A    |
| 33  | BA    | 1214 | C    |
| 33  | BA    | 1215 | G    |
| 33  | BA    | 1224 | U    |
| 33  | BA    | 1225 | A    |
| 33  | BA    | 1226 | C    |
| 33  | BA    | 1227 | A    |
| 33  | BA    | 1228 | C    |
| 33  | BA    | 1230 | C    |
| 33  | BA    | 1232 | U    |
| 33  | BA    | 1235 | U    |
| 33  | BA    | 1238 | A    |
| 33  | BA    | 1239 | A    |
| 33  | BA    | 1240 | U    |
| 33  | BA    | 1241 | G    |
| 33  | BA    | 1244 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 1254 | A    |
| 33  | BA    | 1255 | G    |
| 33  | BA    | 1256 | A    |
| 33  | BA    | 1257 | A    |
| 33  | BA    | 1258 | G    |
| 33  | BA    | 1260 | G    |
| 33  | BA    | 1261 | A    |
| 33  | BA    | 1269 | A    |
| 33  | BA    | 1270 | G    |
| 33  | BA    | 1278 | G    |
| 33  | BA    | 1279 | G    |
| 33  | BA    | 1280 | A    |
| 33  | BA    | 1281 | C    |
| 33  | BA    | 1282 | C    |
| 33  | BA    | 1285 | A    |
| 33  | BA    | 1286 | U    |
| 33  | BA    | 1287 | A    |
| 33  | BA    | 1292 | G    |
| 33  | BA    | 1298 | U    |
| 33  | BA    | 1299 | A    |
| 33  | BA    | 1300 | G    |
| 33  | BA    | 1302 | C    |
| 33  | BA    | 1305 | G    |
| 33  | BA    | 1308 | U    |
| 33  | BA    | 1314 | C    |
| 33  | BA    | 1316 | G    |
| 33  | BA    | 1317 | C    |
| 33  | BA    | 1318 | A    |
| 33  | BA    | 1319 | A    |
| 33  | BA    | 1320 | C    |
| 33  | BA    | 1322 | C    |
| 33  | BA    | 1323 | G    |
| 33  | BA    | 1336 | C    |
| 33  | BA    | 1337 | G    |
| 33  | BA    | 1340 | A    |
| 33  | BA    | 1345 | U    |
| 33  | BA    | 1346 | A    |
| 33  | BA    | 1347 | G    |
| 33  | BA    | 1348 | U    |
| 33  | BA    | 1351 | U    |
| 33  | BA    | 1353 | G    |
| 33  | BA    | 1362 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 1363 | A    |
| 33  | BA    | 1364 | U    |
| 33  | BA    | 1366 | C    |
| 33  | BA    | 1371 | G    |
| 33  | BA    | 1373 | G    |
| 33  | BA    | 1375 | A    |
| 33  | BA    | 1378 | C    |
| 33  | BA    | 1379 | G    |
| 33  | BA    | 1380 | U    |
| 33  | BA    | 1381 | U    |
| 33  | BA    | 1394 | A    |
| 33  | BA    | 1397 | C    |
| 33  | BA    | 1398 | A    |
| 33  | BA    | 1400 | C    |
| 33  | BA    | 1401 | G    |
| 33  | BA    | 1403 | C    |
| 33  | BA    | 1406 | U    |
| 33  | BA    | 1409 | C    |
| 33  | BA    | 1410 | A    |
| 33  | BA    | 1411 | C    |
| 33  | BA    | 1413 | A    |
| 33  | BA    | 1414 | U    |
| 33  | BA    | 1415 | G    |
| 33  | BA    | 1418 | A    |
| 33  | BA    | 1419 | G    |
| 33  | BA    | 1428 | A    |
| 33  | BA    | 1429 | A    |
| 33  | BA    | 1430 | A    |
| 33  | BA    | 1431 | A    |
| 33  | BA    | 1432 | G    |
| 33  | BA    | 1440 | U    |
| 33  | BA    | 1446 | A    |
| 33  | BA    | 1447 | A    |
| 33  | BA    | 1448 | C    |
| 33  | BA    | 1452 | C    |
| 33  | BA    | 1459 | G    |
| 33  | BA    | 1465 | A    |
| 33  | BA    | 1466 | C    |
| 33  | BA    | 1467 | C    |
| 33  | BA    | 1468 | A    |
| 33  | BA    | 1471 | U    |
| 33  | BA    | 1472 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 1473 | G    |
| 33  | BA    | 1474 | U    |
| 33  | BA    | 1482 | G    |
| 33  | BA    | 1486 | G    |
| 33  | BA    | 1487 | G    |
| 33  | BA    | 1488 | G    |
| 33  | BA    | 1490 | U    |
| 33  | BA    | 1491 | G    |
| 33  | BA    | 1493 | A    |
| 33  | BA    | 1494 | G    |
| 33  | BA    | 1496 | C    |
| 33  | BA    | 1497 | G    |
| 33  | BA    | 1498 | U    |
| 33  | BA    | 1499 | A    |
| 33  | BA    | 1502 | A    |
| 33  | BA    | 1503 | A    |
| 33  | BA    | 1504 | G    |
| 33  | BA    | 1505 | G    |
| 33  | BA    | 1506 | U    |
| 33  | BA    | 1507 | A    |
| 33  | BA    | 1513 | A    |
| 33  | BA    | 1514 | G    |
| 33  | BA    | 1515 | G    |
| 33  | BA    | 1517 | G    |
| 33  | BA    | 1519 | A    |
| 33  | BA    | 1520 | C    |
| 33  | BA    | 1521 | C    |
| 33  | BA    | 1522 | U    |
| 33  | BA    | 1523 | G    |
| 33  | BA    | 1529 | G    |
| 33  | BA    | 1530 | G    |
| 33  | BA    | 1533 | C    |
| 33  | BA    | 1534 | A    |
| 7   | CA    | 3    | C    |
| 7   | CA    | 6    | G    |
| 7   | CA    | 7    | G    |
| 7   | CA    | 8    | C    |
| 7   | CA    | 9    | G    |
| 7   | CA    | 12   | C    |
| 7   | CA    | 13   | G    |
| 7   | CA    | 14   | U    |
| 7   | CA    | 15   | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | CA    | 16  | G    |
| 7   | CA    | 24  | G    |
| 7   | CA    | 25  | U    |
| 7   | CA    | 26  | C    |
| 7   | CA    | 27  | C    |
| 7   | CA    | 28  | C    |
| 7   | CA    | 29  | A    |
| 7   | CA    | 30  | C    |
| 7   | CA    | 31  | C    |
| 7   | CA    | 32  | U    |
| 7   | CA    | 34  | A    |
| 7   | CA    | 35  | C    |
| 7   | CA    | 37  | C    |
| 7   | CA    | 38  | C    |
| 7   | CA    | 39  | A    |
| 7   | CA    | 41  | G    |
| 7   | CA    | 42  | C    |
| 7   | CA    | 43  | C    |
| 7   | CA    | 45  | A    |
| 7   | CA    | 47  | C    |
| 7   | CA    | 48  | U    |
| 7   | CA    | 49  | C    |
| 7   | CA    | 52  | A    |
| 7   | CA    | 55  | U    |
| 7   | CA    | 57  | A    |
| 7   | CA    | 62  | C    |
| 7   | CA    | 67  | G    |
| 7   | CA    | 70  | C    |
| 7   | CA    | 77  | U    |
| 7   | CA    | 87  | U    |
| 7   | CA    | 89  | U    |
| 7   | CA    | 90  | C    |
| 7   | CA    | 97  | C    |
| 7   | CA    | 99  | A    |
| 7   | CA    | 105 | G    |
| 7   | CA    | 107 | G    |
| 7   | CA    | 108 | A    |
| 7   | CA    | 109 | A    |
| 7   | CA    | 116 | G    |
| 8   | CB    | 2   | G    |
| 8   | CB    | 4   | U    |
| 8   | CB    | 6   | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 8   | C    |
| 8   | CB    | 15  | G    |
| 8   | CB    | 28  | A    |
| 8   | CB    | 29  | U    |
| 8   | CB    | 34  | U    |
| 8   | CB    | 35  | G    |
| 8   | CB    | 38  | A    |
| 8   | CB    | 42  | A    |
| 8   | CB    | 43  | G    |
| 8   | CB    | 44  | A    |
| 8   | CB    | 45  | G    |
| 8   | CB    | 46  | G    |
| 8   | CB    | 49  | A    |
| 8   | CB    | 50  | U    |
| 8   | CB    | 52  | A    |
| 8   | CB    | 60  | G    |
| 8   | CB    | 61  | C    |
| 8   | CB    | 63  | A    |
| 8   | CB    | 64  | A    |
| 8   | CB    | 71  | A    |
| 8   | CB    | 72  | U    |
| 8   | CB    | 74  | A    |
| 8   | CB    | 75  | G    |
| 8   | CB    | 79  | C    |
| 8   | CB    | 84  | A    |
| 8   | CB    | 85  | G    |
| 8   | CB    | 86  | G    |
| 8   | CB    | 87  | U    |
| 8   | CB    | 88  | G    |
| 8   | CB    | 91  | A    |
| 8   | CB    | 92  | U    |
| 8   | CB    | 95  | A    |
| 8   | CB    | 96  | C    |
| 8   | CB    | 98  | G    |
| 8   | CB    | 99  | U    |
| 8   | CB    | 100 | U    |
| 8   | CB    | 101 | A    |
| 8   | CB    | 102 | U    |
| 8   | CB    | 103 | A    |
| 8   | CB    | 104 | A    |
| 8   | CB    | 106 | C    |
| 8   | CB    | 108 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 112 | U    |
| 8   | CB    | 113 | U    |
| 8   | CB    | 118 | A    |
| 8   | CB    | 119 | A    |
| 8   | CB    | 120 | U    |
| 8   | CB    | 121 | G    |
| 8   | CB    | 123 | G    |
| 8   | CB    | 124 | G    |
| 8   | CB    | 125 | A    |
| 8   | CB    | 128 | C    |
| 8   | CB    | 134 | G    |
| 8   | CB    | 139 | U    |
| 8   | CB    | 140 | C    |
| 8   | CB    | 141 | G    |
| 8   | CB    | 142 | A    |
| 8   | CB    | 143 | C    |
| 8   | CB    | 144 | A    |
| 8   | CB    | 149 | A    |
| 8   | CB    | 156 | A    |
| 8   | CB    | 158 | U    |
| 8   | CB    | 160 | A    |
| 8   | CB    | 162 | U    |
| 8   | CB    | 163 | C    |
| 8   | CB    | 165 | A    |
| 8   | CB    | 166 | U    |
| 8   | CB    | 177 | G    |
| 8   | CB    | 178 | G    |
| 8   | CB    | 180 | G    |
| 8   | CB    | 181 | A    |
| 8   | CB    | 187 | G    |
| 8   | CB    | 188 | G    |
| 8   | CB    | 194 | G    |
| 8   | CB    | 195 | A    |
| 8   | CB    | 196 | A    |
| 8   | CB    | 197 | A    |
| 8   | CB    | 198 | C    |
| 8   | CB    | 199 | A    |
| 8   | CB    | 200 | U    |
| 8   | CB    | 204 | A    |
| 8   | CB    | 205 | G    |
| 8   | CB    | 216 | A    |
| 8   | CB    | 221 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 222 | A    |
| 8   | CB    | 228 | C    |
| 8   | CB    | 229 | C    |
| 8   | CB    | 233 | A    |
| 8   | CB    | 239 | C    |
| 8   | CB    | 240 | C    |
| 8   | CB    | 241 | A    |
| 8   | CB    | 244 | A    |
| 8   | CB    | 245 | G    |
| 8   | CB    | 247 | G    |
| 8   | CB    | 248 | G    |
| 8   | CB    | 250 | G    |
| 8   | CB    | 251 | A    |
| 8   | CB    | 252 | G    |
| 8   | CB    | 254 | G    |
| 8   | CB    | 255 | A    |
| 8   | CB    | 256 | A    |
| 8   | CB    | 261 | G    |
| 8   | CB    | 262 | A    |
| 8   | CB    | 263 | G    |
| 8   | CB    | 264 | C    |
| 8   | CB    | 265 | A    |
| 8   | CB    | 266 | G    |
| 8   | CB    | 267 | C    |
| 8   | CB    | 268 | C    |
| 8   | CB    | 270 | A    |
| 8   | CB    | 271 | G    |
| 8   | CB    | 276 | U    |
| 8   | CB    | 277 | G    |
| 8   | CB    | 278 | A    |
| 8   | CB    | 284 | U    |
| 8   | CB    | 293 | U    |
| 8   | CB    | 294 | A    |
| 8   | CB    | 295 | G    |
| 8   | CB    | 298 | G    |
| 8   | CB    | 299 | A    |
| 8   | CB    | 301 | G    |
| 8   | CB    | 302 | C    |
| 8   | CB    | 303 | G    |
| 8   | CB    | 304 | U    |
| 8   | CB    | 308 | G    |
| 8   | CB    | 310 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 311 | A    |
| 8   | CB    | 317 | G    |
| 8   | CB    | 321 | U    |
| 8   | CB    | 322 | A    |
| 8   | CB    | 323 | C    |
| 8   | CB    | 324 | A    |
| 8   | CB    | 329 | G    |
| 8   | CB    | 330 | A    |
| 8   | CB    | 331 | C    |
| 8   | CB    | 332 | A    |
| 8   | CB    | 333 | G    |
| 8   | CB    | 334 | C    |
| 8   | CB    | 335 | C    |
| 8   | CB    | 339 | U    |
| 8   | CB    | 340 | A    |
| 8   | CB    | 341 | C    |
| 8   | CB    | 346 | A    |
| 8   | CB    | 347 | A    |
| 8   | CB    | 349 | U    |
| 8   | CB    | 353 | C    |
| 8   | CB    | 354 | A    |
| 8   | CB    | 355 | U    |
| 8   | CB    | 361 | G    |
| 8   | CB    | 364 | C    |
| 8   | CB    | 367 | G    |
| 8   | CB    | 368 | A    |
| 8   | CB    | 369 | U    |
| 8   | CB    | 370 | G    |
| 8   | CB    | 371 | A    |
| 8   | CB    | 372 | G    |
| 8   | CB    | 375 | G    |
| 8   | CB    | 378 | C    |
| 8   | CB    | 379 | G    |
| 8   | CB    | 380 | G    |
| 8   | CB    | 386 | G    |
| 8   | CB    | 387 | U    |
| 8   | CB    | 388 | G    |
| 8   | CB    | 391 | A    |
| 8   | CB    | 392 | U    |
| 8   | CB    | 394 | C    |
| 8   | CB    | 395 | U    |
| 8   | CB    | 396 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 397 | U    |
| 8   | CB    | 399 | U    |
| 8   | CB    | 400 | G    |
| 8   | CB    | 403 | U    |
| 8   | CB    | 404 | A    |
| 8   | CB    | 405 | U    |
| 8   | CB    | 407 | G    |
| 8   | CB    | 409 | G    |
| 8   | CB    | 411 | G    |
| 8   | CB    | 412 | A    |
| 8   | CB    | 422 | A    |
| 8   | CB    | 424 | G    |
| 8   | CB    | 434 | U    |
| 8   | CB    | 435 | C    |
| 8   | CB    | 436 | C    |
| 8   | CB    | 438 | G    |
| 8   | CB    | 444 | C    |
| 8   | CB    | 445 | C    |
| 8   | CB    | 448 | U    |
| 8   | CB    | 449 | A    |
| 8   | CB    | 450 | G    |
| 8   | CB    | 451 | U    |
| 8   | CB    | 455 | C    |
| 8   | CB    | 456 | C    |
| 8   | CB    | 457 | A    |
| 8   | CB    | 458 | G    |
| 8   | CB    | 461 | C    |
| 8   | CB    | 465 | G    |
| 8   | CB    | 466 | A    |
| 8   | CB    | 468 | G    |
| 8   | CB    | 469 | G    |
| 8   | CB    | 475 | C    |
| 8   | CB    | 479 | A    |
| 8   | CB    | 480 | A    |
| 8   | CB    | 481 | G    |
| 8   | CB    | 483 | A    |
| 8   | CB    | 489 | G    |
| 8   | CB    | 490 | C    |
| 8   | CB    | 491 | G    |
| 8   | CB    | 492 | A    |
| 8   | CB    | 502 | A    |
| 8   | CB    | 503 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 504 | A    |
| 8   | CB    | 505 | A    |
| 8   | CB    | 508 | A    |
| 8   | CB    | 509 | C    |
| 8   | CB    | 510 | C    |
| 8   | CB    | 526 | A    |
| 8   | CB    | 527 | C    |
| 8   | CB    | 528 | A    |
| 8   | CB    | 529 | A    |
| 8   | CB    | 530 | G    |
| 8   | CB    | 531 | C    |
| 8   | CB    | 532 | A    |
| 8   | CB    | 533 | G    |
| 8   | CB    | 534 | U    |
| 8   | CB    | 540 | C    |
| 8   | CB    | 543 | G    |
| 8   | CB    | 544 | C    |
| 8   | CB    | 545 | U    |
| 8   | CB    | 546 | U    |
| 8   | CB    | 547 | A    |
| 8   | CB    | 548 | G    |
| 8   | CB    | 549 | G    |
| 8   | CB    | 550 | C    |
| 8   | CB    | 553 | G    |
| 8   | CB    | 554 | U    |
| 8   | CB    | 555 | G    |
| 8   | CB    | 556 | A    |
| 8   | CB    | 557 | C    |
| 8   | CB    | 563 | A    |
| 8   | CB    | 566 | U    |
| 8   | CB    | 567 | U    |
| 8   | CB    | 568 | U    |
| 8   | CB    | 569 | U    |
| 8   | CB    | 570 | G    |
| 8   | CB    | 571 | U    |
| 8   | CB    | 572 | A    |
| 8   | CB    | 573 | U    |
| 8   | CB    | 574 | A    |
| 8   | CB    | 575 | A    |
| 8   | CB    | 576 | U    |
| 8   | CB    | 577 | G    |
| 8   | CB    | 586 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 587 | C    |
| 8   | CB    | 588 | U    |
| 8   | CB    | 593 | U    |
| 8   | CB    | 594 | U    |
| 8   | CB    | 595 | C    |
| 8   | CB    | 601 | C    |
| 8   | CB    | 603 | A    |
| 8   | CB    | 608 | A    |
| 8   | CB    | 609 | A    |
| 8   | CB    | 613 | A    |
| 8   | CB    | 614 | A    |
| 8   | CB    | 615 | U    |
| 8   | CB    | 616 | A    |
| 8   | CB    | 617 | G    |
| 8   | CB    | 620 | G    |
| 8   | CB    | 627 | A    |
| 8   | CB    | 628 | G    |
| 8   | CB    | 631 | A    |
| 8   | CB    | 632 | A    |
| 8   | CB    | 637 | A    |
| 8   | CB    | 640 | C    |
| 8   | CB    | 645 | C    |
| 8   | CB    | 646 | U    |
| 8   | CB    | 648 | G    |
| 8   | CB    | 653 | U    |
| 8   | CB    | 654 | A    |
| 8   | CB    | 655 | A    |
| 8   | CB    | 656 | G    |
| 8   | CB    | 664 | G    |
| 8   | CB    | 667 | U    |
| 8   | CB    | 668 | A    |
| 8   | CB    | 669 | G    |
| 8   | CB    | 670 | A    |
| 8   | CB    | 671 | C    |
| 8   | CB    | 673 | C    |
| 8   | CB    | 675 | A    |
| 8   | CB    | 676 | A    |
| 8   | CB    | 677 | A    |
| 8   | CB    | 678 | C    |
| 8   | CB    | 683 | U    |
| 8   | CB    | 684 | G    |
| 8   | CB    | 685 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 686 | U    |
| 8   | CB    | 689 | A    |
| 8   | CB    | 690 | G    |
| 8   | CB    | 698 | C    |
| 8   | CB    | 699 | A    |
| 8   | CB    | 700 | G    |
| 8   | CB    | 707 | G    |
| 8   | CB    | 708 | G    |
| 8   | CB    | 715 | A    |
| 8   | CB    | 717 | C    |
| 8   | CB    | 718 | A    |
| 8   | CB    | 722 | A    |
| 8   | CB    | 726 | G    |
| 8   | CB    | 727 | A    |
| 8   | CB    | 728 | G    |
| 8   | CB    | 729 | G    |
| 8   | CB    | 730 | A    |
| 8   | CB    | 740 | C    |
| 8   | CB    | 741 | U    |
| 8   | CB    | 745 | G    |
| 8   | CB    | 746 | U    |
| 8   | CB    | 747 | U    |
| 8   | CB    | 754 | U    |
| 8   | CB    | 756 | A    |
| 8   | CB    | 761 | A    |
| 8   | CB    | 762 | U    |
| 8   | CB    | 764 | A    |
| 8   | CB    | 765 | C    |
| 8   | CB    | 769 | U    |
| 8   | CB    | 773 | U    |
| 8   | CB    | 774 | G    |
| 8   | CB    | 775 | G    |
| 8   | CB    | 776 | G    |
| 8   | CB    | 778 | G    |
| 8   | CB    | 782 | A    |
| 8   | CB    | 784 | G    |
| 8   | CB    | 785 | G    |
| 8   | CB    | 788 | A    |
| 8   | CB    | 789 | A    |
| 8   | CB    | 790 | U    |
| 8   | CB    | 792 | A    |
| 8   | CB    | 793 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 795 | C    |
| 8   | CB    | 796 | C    |
| 8   | CB    | 797 | G    |
| 8   | CB    | 798 | G    |
| 8   | CB    | 799 | G    |
| 8   | CB    | 800 | A    |
| 8   | CB    | 801 | G    |
| 8   | CB    | 802 | A    |
| 8   | CB    | 803 | U    |
| 8   | CB    | 805 | G    |
| 8   | CB    | 806 | C    |
| 8   | CB    | 807 | U    |
| 8   | CB    | 808 | G    |
| 8   | CB    | 809 | G    |
| 8   | CB    | 811 | U    |
| 8   | CB    | 812 | C    |
| 8   | CB    | 819 | A    |
| 8   | CB    | 822 | G    |
| 8   | CB    | 826 | U    |
| 8   | CB    | 827 | U    |
| 8   | CB    | 829 | A    |
| 8   | CB    | 830 | G    |
| 8   | CB    | 833 | A    |
| 8   | CB    | 843 | G    |
| 8   | CB    | 845 | A    |
| 8   | CB    | 846 | U    |
| 8   | CB    | 859 | G    |
| 8   | CB    | 862 | G    |
| 8   | CB    | 863 | A    |
| 8   | CB    | 864 | G    |
| 8   | CB    | 870 | U    |
| 8   | CB    | 871 | U    |
| 8   | CB    | 873 | C    |
| 8   | CB    | 874 | G    |
| 8   | CB    | 875 | G    |
| 8   | CB    | 876 | C    |
| 8   | CB    | 877 | A    |
| 8   | CB    | 878 | A    |
| 8   | CB    | 899 | A    |
| 8   | CB    | 900 | A    |
| 8   | CB    | 905 | A    |
| 8   | CB    | 906 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 910  | A    |
| 8   | CB    | 911  | A    |
| 8   | CB    | 912  | C    |
| 8   | CB    | 914  | G    |
| 8   | CB    | 915  | C    |
| 8   | CB    | 916  | G    |
| 8   | CB    | 918  | A    |
| 8   | CB    | 919  | U    |
| 8   | CB    | 931  | U    |
| 8   | CB    | 932  | U    |
| 8   | CB    | 933  | A    |
| 8   | CB    | 934  | U    |
| 8   | CB    | 939  | G    |
| 8   | CB    | 941  | A    |
| 8   | CB    | 944  | C    |
| 8   | CB    | 946  | C    |
| 8   | CB    | 949  | G    |
| 8   | CB    | 953  | G    |
| 8   | CB    | 954  | G    |
| 8   | CB    | 955  | U    |
| 8   | CB    | 961  | C    |
| 8   | CB    | 969  | G    |
| 8   | CB    | 970  | U    |
| 8   | CB    | 971  | G    |
| 8   | CB    | 973  | A    |
| 8   | CB    | 974  | G    |
| 8   | CB    | 975  | A    |
| 8   | CB    | 976  | G    |
| 8   | CB    | 978  | G    |
| 8   | CB    | 983  | A    |
| 8   | CB    | 986  | C    |
| 8   | CB    | 988  | A    |
| 8   | CB    | 989  | G    |
| 8   | CB    | 990  | A    |
| 8   | CB    | 991  | C    |
| 8   | CB    | 995  | C    |
| 8   | CB    | 996  | A    |
| 8   | CB    | 1000 | A    |
| 8   | CB    | 1005 | C    |
| 8   | CB    | 1008 | A    |
| 8   | CB    | 1011 | G    |
| 8   | CB    | 1012 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1013 | C    |
| 8   | CB    | 1017 | G    |
| 8   | CB    | 1019 | U    |
| 8   | CB    | 1020 | A    |
| 8   | CB    | 1022 | G    |
| 8   | CB    | 1023 | U    |
| 8   | CB    | 1026 | G    |
| 8   | CB    | 1027 | A    |
| 8   | CB    | 1028 | A    |
| 8   | CB    | 1029 | A    |
| 8   | CB    | 1033 | U    |
| 8   | CB    | 1034 | G    |
| 8   | CB    | 1040 | A    |
| 8   | CB    | 1044 | C    |
| 8   | CB    | 1045 | C    |
| 8   | CB    | 1046 | A    |
| 8   | CB    | 1056 | G    |
| 8   | CB    | 1057 | A    |
| 8   | CB    | 1058 | U    |
| 8   | CB    | 1060 | U    |
| 8   | CB    | 1061 | U    |
| 8   | CB    | 1063 | G    |
| 8   | CB    | 1064 | C    |
| 8   | CB    | 1069 | A    |
| 8   | CB    | 1070 | A    |
| 8   | CB    | 1071 | G    |
| 8   | CB    | 1073 | A    |
| 8   | CB    | 1082 | U    |
| 8   | CB    | 1083 | U    |
| 8   | CB    | 1085 | A    |
| 8   | CB    | 1088 | A    |
| 8   | CB    | 1089 | A    |
| 8   | CB    | 1094 | U    |
| 8   | CB    | 1099 | G    |
| 8   | CB    | 1100 | C    |
| 8   | CB    | 1106 | G    |
| 8   | CB    | 1108 | U    |
| 8   | CB    | 1111 | A    |
| 8   | CB    | 1112 | G    |
| 8   | CB    | 1113 | U    |
| 8   | CB    | 1115 | G    |
| 8   | CB    | 1116 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1119 | U    |
| 8   | CB    | 1120 | G    |
| 8   | CB    | 1122 | G    |
| 8   | CB    | 1123 | C    |
| 8   | CB    | 1126 | A    |
| 8   | CB    | 1127 | A    |
| 8   | CB    | 1130 | U    |
| 8   | CB    | 1132 | U    |
| 8   | CB    | 1133 | A    |
| 8   | CB    | 1135 | C    |
| 8   | CB    | 1136 | G    |
| 8   | CB    | 1141 | U    |
| 8   | CB    | 1142 | A    |
| 8   | CB    | 1143 | A    |
| 8   | CB    | 1147 | A    |
| 8   | CB    | 1156 | A    |
| 8   | CB    | 1157 | G    |
| 8   | CB    | 1158 | C    |
| 8   | CB    | 1168 | G    |
| 8   | CB    | 1173 | U    |
| 8   | CB    | 1175 | A    |
| 8   | CB    | 1176 | U    |
| 8   | CB    | 1186 | G    |
| 8   | CB    | 1195 | G    |
| 8   | CB    | 1199 | U    |
| 8   | CB    | 1200 | C    |
| 8   | CB    | 1202 | G    |
| 8   | CB    | 1204 | A    |
| 8   | CB    | 1205 | A    |
| 8   | CB    | 1206 | G    |
| 8   | CB    | 1210 | G    |
| 8   | CB    | 1211 | C    |
| 8   | CB    | 1216 | G    |
| 8   | CB    | 1217 | U    |
| 8   | CB    | 1224 | U    |
| 8   | CB    | 1227 | G    |
| 8   | CB    | 1235 | G    |
| 8   | CB    | 1237 | A    |
| 8   | CB    | 1238 | G    |
| 8   | CB    | 1241 | A    |
| 8   | CB    | 1242 | U    |
| 8   | CB    | 1244 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1247 | A    |
| 8   | CB    | 1248 | G    |
| 8   | CB    | 1249 | U    |
| 8   | CB    | 1251 | C    |
| 8   | CB    | 1253 | A    |
| 8   | CB    | 1254 | A    |
| 8   | CB    | 1256 | G    |
| 8   | CB    | 1257 | C    |
| 8   | CB    | 1258 | U    |
| 8   | CB    | 1264 | A    |
| 8   | CB    | 1265 | A    |
| 8   | CB    | 1266 | G    |
| 8   | CB    | 1269 | A    |
| 8   | CB    | 1270 | C    |
| 8   | CB    | 1271 | G    |
| 8   | CB    | 1272 | A    |
| 8   | CB    | 1273 | U    |
| 8   | CB    | 1274 | A    |
| 8   | CB    | 1275 | A    |
| 8   | CB    | 1276 | A    |
| 8   | CB    | 1284 | A    |
| 8   | CB    | 1286 | A    |
| 8   | CB    | 1287 | A    |
| 8   | CB    | 1288 | G    |
| 8   | CB    | 1289 | C    |
| 8   | CB    | 1291 | C    |
| 8   | CB    | 1292 | G    |
| 8   | CB    | 1296 | G    |
| 8   | CB    | 1297 | C    |
| 8   | CB    | 1299 | G    |
| 8   | CB    | 1300 | G    |
| 8   | CB    | 1301 | A    |
| 8   | CB    | 1305 | C    |
| 8   | CB    | 1312 | U    |
| 8   | CB    | 1321 | A    |
| 8   | CB    | 1322 | A    |
| 8   | CB    | 1325 | U    |
| 8   | CB    | 1326 | U    |
| 8   | CB    | 1328 | A    |
| 8   | CB    | 1329 | U    |
| 8   | CB    | 1333 | G    |
| 8   | CB    | 1337 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1340 | U    |
| 8   | CB    | 1341 | G    |
| 8   | CB    | 1342 | A    |
| 8   | CB    | 1345 | C    |
| 8   | CB    | 1348 | C    |
| 8   | CB    | 1349 | C    |
| 8   | CB    | 1351 | C    |
| 8   | CB    | 1352 | U    |
| 8   | CB    | 1353 | A    |
| 8   | CB    | 1359 | A    |
| 8   | CB    | 1360 | G    |
| 8   | CB    | 1364 | G    |
| 8   | CB    | 1365 | A    |
| 8   | CB    | 1366 | A    |
| 8   | CB    | 1367 | A    |
| 8   | CB    | 1369 | G    |
| 8   | CB    | 1375 | U    |
| 8   | CB    | 1376 | C    |
| 8   | CB    | 1378 | A    |
| 8   | CB    | 1379 | U    |
| 8   | CB    | 1380 | G    |
| 8   | CB    | 1383 | A    |
| 8   | CB    | 1384 | A    |
| 8   | CB    | 1385 | A    |
| 8   | CB    | 1386 | C    |
| 8   | CB    | 1393 | A    |
| 8   | CB    | 1395 | A    |
| 8   | CB    | 1396 | U    |
| 8   | CB    | 1397 | U    |
| 8   | CB    | 1398 | C    |
| 8   | CB    | 1402 | U    |
| 8   | CB    | 1410 | G    |
| 8   | CB    | 1416 | G    |
| 8   | CB    | 1419 | A    |
| 8   | CB    | 1421 | G    |
| 8   | CB    | 1427 | A    |
| 8   | CB    | 1428 | C    |
| 8   | CB    | 1429 | G    |
| 8   | CB    | 1433 | A    |
| 8   | CB    | 1434 | A    |
| 8   | CB    | 1435 | G    |
| 8   | CB    | 1450 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1451 | C    |
| 8   | CB    | 1452 | G    |
| 8   | CB    | 1453 | A    |
| 8   | CB    | 1454 | C    |
| 8   | CB    | 1455 | G    |
| 8   | CB    | 1456 | G    |
| 8   | CB    | 1459 | G    |
| 8   | CB    | 1460 | U    |
| 8   | CB    | 1461 | C    |
| 8   | CB    | 1478 | G    |
| 8   | CB    | 1479 | G    |
| 8   | CB    | 1480 | C    |
| 8   | CB    | 1482 | G    |
| 8   | CB    | 1485 | U    |
| 8   | CB    | 1490 | A    |
| 8   | CB    | 1491 | G    |
| 8   | CB    | 1493 | C    |
| 8   | CB    | 1494 | A    |
| 8   | CB    | 1498 | C    |
| 8   | CB    | 1503 | A    |
| 8   | CB    | 1504 | A    |
| 8   | CB    | 1507 | C    |
| 8   | CB    | 1508 | A    |
| 8   | CB    | 1509 | A    |
| 8   | CB    | 1510 | G    |
| 8   | CB    | 1515 | A    |
| 8   | CB    | 1522 | A    |
| 8   | CB    | 1523 | U    |
| 8   | CB    | 1524 | G    |
| 8   | CB    | 1532 | A    |
| 8   | CB    | 1535 | A    |
| 8   | CB    | 1536 | C    |
| 8   | CB    | 1538 | G    |
| 8   | CB    | 1540 | G    |
| 8   | CB    | 1552 | A    |
| 8   | CB    | 1554 | U    |
| 8   | CB    | 1555 | G    |
| 8   | CB    | 1558 | C    |
| 8   | CB    | 1559 | U    |
| 8   | CB    | 1560 | G    |
| 8   | CB    | 1565 | C    |
| 8   | CB    | 1566 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1567 | G    |
| 8   | CB    | 1569 | A    |
| 8   | CB    | 1572 | A    |
| 8   | CB    | 1578 | U    |
| 8   | CB    | 1583 | A    |
| 8   | CB    | 1584 | U    |
| 8   | CB    | 1585 | C    |
| 8   | CB    | 1599 | U    |
| 8   | CB    | 1601 | G    |
| 8   | CB    | 1602 | U    |
| 8   | CB    | 1607 | C    |
| 8   | CB    | 1608 | A    |
| 8   | CB    | 1609 | A    |
| 8   | CB    | 1610 | A    |
| 8   | CB    | 1614 | A    |
| 8   | CB    | 1616 | A    |
| 8   | CB    | 1617 | C    |
| 8   | CB    | 1618 | A    |
| 8   | CB    | 1619 | G    |
| 8   | CB    | 1633 | G    |
| 8   | CB    | 1634 | A    |
| 8   | CB    | 1635 | A    |
| 8   | CB    | 1636 | U    |
| 8   | CB    | 1640 | A    |
| 8   | CB    | 1644 | C    |
| 8   | CB    | 1647 | U    |
| 8   | CB    | 1648 | U    |
| 8   | CB    | 1654 | A    |
| 8   | CB    | 1663 | G    |
| 8   | CB    | 1664 | A    |
| 8   | CB    | 1673 | G    |
| 8   | CB    | 1674 | G    |
| 8   | CB    | 1677 | A    |
| 8   | CB    | 1678 | A    |
| 8   | CB    | 1682 | G    |
| 8   | CB    | 1683 | U    |
| 8   | CB    | 1692 | U    |
| 8   | CB    | 1693 | U    |
| 8   | CB    | 1694 | C    |
| 8   | CB    | 1695 | G    |
| 8   | CB    | 1696 | G    |
| 8   | CB    | 1697 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1698 | A    |
| 8   | CB    | 1699 | G    |
| 8   | CB    | 1700 | A    |
| 8   | CB    | 1701 | A    |
| 8   | CB    | 1703 | G    |
| 8   | CB    | 1707 | G    |
| 8   | CB    | 1708 | C    |
| 8   | CB    | 1713 | A    |
| 8   | CB    | 1715 | G    |
| 8   | CB    | 1716 | U    |
| 8   | CB    | 1722 | A    |
| 8   | CB    | 1730 | C    |
| 8   | CB    | 1731 | G    |
| 8   | CB    | 1732 | C    |
| 8   | CB    | 1733 | G    |
| 8   | CB    | 1738 | G    |
| 8   | CB    | 1745 | A    |
| 8   | CB    | 1748 | C    |
| 8   | CB    | 1756 | G    |
| 8   | CB    | 1758 | U    |
| 8   | CB    | 1759 | A    |
| 8   | CB    | 1763 | G    |
| 8   | CB    | 1764 | C    |
| 8   | CB    | 1772 | A    |
| 8   | CB    | 1773 | A    |
| 8   | CB    | 1774 | C    |
| 8   | CB    | 1775 | U    |
| 8   | CB    | 1776 | G    |
| 8   | CB    | 1781 | U    |
| 8   | CB    | 1782 | U    |
| 8   | CB    | 1783 | A    |
| 8   | CB    | 1784 | A    |
| 8   | CB    | 1785 | A    |
| 8   | CB    | 1787 | A    |
| 8   | CB    | 1788 | C    |
| 8   | CB    | 1791 | A    |
| 8   | CB    | 1792 | G    |
| 8   | CB    | 1798 | U    |
| 8   | CB    | 1800 | C    |
| 8   | CB    | 1801 | A    |
| 8   | CB    | 1806 | C    |
| 8   | CB    | 1808 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1809 | A    |
| 8   | CB    | 1814 | G    |
| 8   | CB    | 1815 | A    |
| 8   | CB    | 1816 | C    |
| 8   | CB    | 1817 | G    |
| 8   | CB    | 1818 | U    |
| 8   | CB    | 1819 | A    |
| 8   | CB    | 1820 | U    |
| 8   | CB    | 1821 | A    |
| 8   | CB    | 1822 | C    |
| 8   | CB    | 1823 | G    |
| 8   | CB    | 1828 | G    |
| 8   | CB    | 1829 | A    |
| 8   | CB    | 1830 | C    |
| 8   | CB    | 1831 | G    |
| 8   | CB    | 1840 | G    |
| 8   | CB    | 1841 | U    |
| 8   | CB    | 1847 | A    |
| 8   | CB    | 1848 | A    |
| 8   | CB    | 1857 | G    |
| 8   | CB    | 1858 | A    |
| 8   | CB    | 1870 | C    |
| 8   | CB    | 1871 | A    |
| 8   | CB    | 1873 | G    |
| 8   | CB    | 1875 | G    |
| 8   | CB    | 1884 | G    |
| 8   | CB    | 1885 | A    |
| 8   | CB    | 1898 | U    |
| 8   | CB    | 1900 | A    |
| 8   | CB    | 1903 | G    |
| 8   | CB    | 1906 | G    |
| 8   | CB    | 1913 | A    |
| 8   | CB    | 1914 | C    |
| 8   | CB    | 1920 | C    |
| 8   | CB    | 1929 | G    |
| 8   | CB    | 1930 | G    |
| 8   | CB    | 1936 | A    |
| 8   | CB    | 1937 | A    |
| 8   | CB    | 1938 | A    |
| 8   | CB    | 1939 | U    |
| 8   | CB    | 1940 | U    |
| 8   | CB    | 1941 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1942 | C    |
| 8   | CB    | 1943 | U    |
| 8   | CB    | 1944 | U    |
| 8   | CB    | 1952 | A    |
| 8   | CB    | 1955 | U    |
| 8   | CB    | 1956 | U    |
| 8   | CB    | 1965 | C    |
| 8   | CB    | 1966 | A    |
| 8   | CB    | 1967 | C    |
| 8   | CB    | 1970 | A    |
| 8   | CB    | 1971 | U    |
| 8   | CB    | 1972 | G    |
| 8   | CB    | 1973 | G    |
| 8   | CB    | 1974 | C    |
| 8   | CB    | 1975 | G    |
| 8   | CB    | 1976 | U    |
| 8   | CB    | 1977 | A    |
| 8   | CB    | 1987 | A    |
| 8   | CB    | 1989 | G    |
| 8   | CB    | 1991 | U    |
| 8   | CB    | 1992 | G    |
| 8   | CB    | 1993 | U    |
| 8   | CB    | 1996 | C    |
| 8   | CB    | 1997 | C    |
| 8   | CB    | 2004 | G    |
| 8   | CB    | 2007 | U    |
| 8   | CB    | 2012 | G    |
| 8   | CB    | 2014 | A    |
| 8   | CB    | 2015 | A    |
| 8   | CB    | 2017 | U    |
| 8   | CB    | 2020 | A    |
| 8   | CB    | 2022 | U    |
| 8   | CB    | 2023 | C    |
| 8   | CB    | 2026 | U    |
| 8   | CB    | 2030 | A    |
| 8   | CB    | 2031 | A    |
| 8   | CB    | 2032 | G    |
| 8   | CB    | 2033 | A    |
| 8   | CB    | 2034 | U    |
| 8   | CB    | 2035 | G    |
| 8   | CB    | 2039 | U    |
| 8   | CB    | 2040 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2042 | A    |
| 8   | CB    | 2043 | C    |
| 8   | CB    | 2046 | G    |
| 8   | CB    | 2051 | A    |
| 8   | CB    | 2052 | A    |
| 8   | CB    | 2055 | C    |
| 8   | CB    | 2056 | G    |
| 8   | CB    | 2058 | A    |
| 8   | CB    | 2059 | A    |
| 8   | CB    | 2060 | A    |
| 8   | CB    | 2061 | G    |
| 8   | CB    | 2062 | A    |
| 8   | CB    | 2063 | C    |
| 8   | CB    | 2067 | G    |
| 8   | CB    | 2068 | U    |
| 8   | CB    | 2069 | G    |
| 8   | CB    | 2073 | C    |
| 8   | CB    | 2075 | U    |
| 8   | CB    | 2076 | U    |
| 8   | CB    | 2077 | A    |
| 8   | CB    | 2078 | C    |
| 8   | CB    | 2090 | A    |
| 8   | CB    | 2092 | U    |
| 8   | CB    | 2093 | G    |
| 8   | CB    | 2094 | A    |
| 8   | CB    | 2096 | C    |
| 8   | CB    | 2097 | A    |
| 8   | CB    | 2100 | G    |
| 8   | CB    | 2105 | U    |
| 8   | CB    | 2106 | U    |
| 8   | CB    | 2107 | G    |
| 8   | CB    | 2108 | A    |
| 8   | CB    | 2110 | G    |
| 8   | CB    | 2134 | A    |
| 8   | CB    | 2135 | A    |
| 8   | CB    | 2136 | G    |
| 8   | CB    | 2138 | G    |
| 8   | CB    | 2144 | G    |
| 8   | CB    | 2145 | C    |
| 8   | CB    | 2146 | C    |
| 8   | CB    | 2147 | A    |
| 8   | CB    | 2148 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2149 | U    |
| 8   | CB    | 2150 | C    |
| 8   | CB    | 2156 | G    |
| 8   | CB    | 2157 | G    |
| 8   | CB    | 2180 | U    |
| 8   | CB    | 2181 | U    |
| 8   | CB    | 2183 | A    |
| 8   | CB    | 2184 | A    |
| 8   | CB    | 2192 | U    |
| 8   | CB    | 2198 | A    |
| 8   | CB    | 2199 | A    |
| 8   | CB    | 2200 | C    |
| 8   | CB    | 2202 | U    |
| 8   | CB    | 2203 | U    |
| 8   | CB    | 2204 | G    |
| 8   | CB    | 2209 | G    |
| 8   | CB    | 2210 | U    |
| 8   | CB    | 2211 | A    |
| 8   | CB    | 2212 | A    |
| 8   | CB    | 2213 | U    |
| 8   | CB    | 2214 | C    |
| 8   | CB    | 2215 | C    |
| 8   | CB    | 2223 | G    |
| 8   | CB    | 2224 | G    |
| 8   | CB    | 2225 | A    |
| 8   | CB    | 2226 | C    |
| 8   | CB    | 2230 | G    |
| 8   | CB    | 2234 | G    |
| 8   | CB    | 2238 | G    |
| 8   | CB    | 2239 | G    |
| 8   | CB    | 2243 | U    |
| 8   | CB    | 2250 | G    |
| 8   | CB    | 2258 | C    |
| 8   | CB    | 2259 | U    |
| 8   | CB    | 2261 | C    |
| 8   | CB    | 2266 | A    |
| 8   | CB    | 2267 | A    |
| 8   | CB    | 2268 | A    |
| 8   | CB    | 2270 | A    |
| 8   | CB    | 2271 | G    |
| 8   | CB    | 2275 | C    |
| 8   | CB    | 2277 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2278 | A    |
| 8   | CB    | 2281 | A    |
| 8   | CB    | 2282 | G    |
| 8   | CB    | 2283 | C    |
| 8   | CB    | 2285 | C    |
| 8   | CB    | 2287 | A    |
| 8   | CB    | 2289 | G    |
| 8   | CB    | 2297 | A    |
| 8   | CB    | 2303 | G    |
| 8   | CB    | 2304 | G    |
| 8   | CB    | 2305 | U    |
| 8   | CB    | 2307 | G    |
| 8   | CB    | 2308 | G    |
| 8   | CB    | 2309 | A    |
| 8   | CB    | 2310 | C    |
| 8   | CB    | 2312 | U    |
| 8   | CB    | 2320 | U    |
| 8   | CB    | 2321 | U    |
| 8   | CB    | 2322 | A    |
| 8   | CB    | 2324 | U    |
| 8   | CB    | 2325 | G    |
| 8   | CB    | 2326 | C    |
| 8   | CB    | 2327 | A    |
| 8   | CB    | 2328 | A    |
| 8   | CB    | 2333 | A    |
| 8   | CB    | 2334 | U    |
| 8   | CB    | 2335 | A    |
| 8   | CB    | 2336 | A    |
| 8   | CB    | 2337 | G    |
| 8   | CB    | 2338 | C    |
| 8   | CB    | 2344 | U    |
| 8   | CB    | 2345 | G    |
| 8   | CB    | 2347 | C    |
| 8   | CB    | 2352 | A    |
| 8   | CB    | 2353 | G    |
| 8   | CB    | 2358 | A    |
| 8   | CB    | 2359 | C    |
| 8   | CB    | 2360 | G    |
| 8   | CB    | 2361 | G    |
| 8   | CB    | 2363 | G    |
| 8   | CB    | 2366 | A    |
| 8   | CB    | 2371 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2382 | G    |
| 8   | CB    | 2383 | G    |
| 8   | CB    | 2384 | U    |
| 8   | CB    | 2385 | C    |
| 8   | CB    | 2389 | G    |
| 8   | CB    | 2391 | G    |
| 8   | CB    | 2393 | U    |
| 8   | CB    | 2396 | G    |
| 8   | CB    | 2398 | U    |
| 8   | CB    | 2402 | U    |
| 8   | CB    | 2403 | C    |
| 8   | CB    | 2406 | A    |
| 8   | CB    | 2408 | U    |
| 8   | CB    | 2410 | G    |
| 8   | CB    | 2420 | C    |
| 8   | CB    | 2421 | G    |
| 8   | CB    | 2422 | C    |
| 8   | CB    | 2423 | U    |
| 8   | CB    | 2425 | A    |
| 8   | CB    | 2426 | A    |
| 8   | CB    | 2427 | C    |
| 8   | CB    | 2428 | G    |
| 8   | CB    | 2429 | G    |
| 8   | CB    | 2430 | A    |
| 8   | CB    | 2431 | U    |
| 8   | CB    | 2432 | A    |
| 8   | CB    | 2434 | A    |
| 8   | CB    | 2435 | A    |
| 8   | CB    | 2439 | A    |
| 8   | CB    | 2440 | C    |
| 8   | CB    | 2441 | U    |
| 8   | CB    | 2447 | G    |
| 8   | CB    | 2448 | A    |
| 8   | CB    | 2449 | U    |
| 8   | CB    | 2450 | A    |
| 8   | CB    | 2452 | C    |
| 8   | CB    | 2453 | A    |
| 8   | CB    | 2454 | G    |
| 8   | CB    | 2459 | A    |
| 8   | CB    | 2460 | U    |
| 8   | CB    | 2464 | G    |
| 8   | CB    | 2470 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2473 | U    |
| 8   | CB    | 2474 | U    |
| 8   | CB    | 2476 | A    |
| 8   | CB    | 2478 | A    |
| 8   | CB    | 2479 | U    |
| 8   | CB    | 2484 | G    |
| 8   | CB    | 2487 | G    |
| 8   | CB    | 2488 | G    |
| 8   | CB    | 2489 | U    |
| 8   | CB    | 2491 | U    |
| 8   | CB    | 2497 | A    |
| 8   | CB    | 2501 | C    |
| 8   | CB    | 2502 | G    |
| 8   | CB    | 2504 | U    |
| 8   | CB    | 2505 | G    |
| 8   | CB    | 2506 | U    |
| 8   | CB    | 2512 | C    |
| 8   | CB    | 2513 | A    |
| 8   | CB    | 2514 | U    |
| 8   | CB    | 2516 | A    |
| 8   | CB    | 2517 | C    |
| 8   | CB    | 2518 | A    |
| 8   | CB    | 2520 | C    |
| 8   | CB    | 2521 | C    |
| 8   | CB    | 2523 | G    |
| 8   | CB    | 2525 | G    |
| 8   | CB    | 2526 | G    |
| 8   | CB    | 2529 | G    |
| 8   | CB    | 2530 | A    |
| 8   | CB    | 2534 | A    |
| 8   | CB    | 2535 | G    |
| 8   | CB    | 2540 | C    |
| 8   | CB    | 2542 | A    |
| 8   | CB    | 2543 | G    |
| 8   | CB    | 2547 | A    |
| 8   | CB    | 2550 | G    |
| 8   | CB    | 2552 | U    |
| 8   | CB    | 2554 | U    |
| 8   | CB    | 2562 | U    |
| 8   | CB    | 2563 | U    |
| 8   | CB    | 2566 | A    |
| 8   | CB    | 2567 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2572 | A    |
| 8   | CB    | 2573 | C    |
| 8   | CB    | 2574 | G    |
| 8   | CB    | 2575 | C    |
| 8   | CB    | 2576 | G    |
| 8   | CB    | 2577 | A    |
| 8   | CB    | 2581 | G    |
| 8   | CB    | 2582 | G    |
| 8   | CB    | 2585 | U    |
| 8   | CB    | 2586 | U    |
| 8   | CB    | 2588 | G    |
| 8   | CB    | 2589 | A    |
| 8   | CB    | 2592 | G    |
| 8   | CB    | 2593 | U    |
| 8   | CB    | 2594 | C    |
| 8   | CB    | 2595 | G    |
| 8   | CB    | 2596 | U    |
| 8   | CB    | 2609 | U    |
| 8   | CB    | 2610 | C    |
| 8   | CB    | 2612 | C    |
| 8   | CB    | 2613 | U    |
| 8   | CB    | 2614 | A    |
| 8   | CB    | 2615 | U    |
| 8   | CB    | 2618 | G    |
| 8   | CB    | 2619 | C    |
| 8   | CB    | 2623 | G    |
| 8   | CB    | 2624 | G    |
| 8   | CB    | 2628 | C    |
| 8   | CB    | 2629 | U    |
| 8   | CB    | 2630 | G    |
| 8   | CB    | 2634 | A    |
| 8   | CB    | 2637 | U    |
| 8   | CB    | 2639 | A    |
| 8   | CB    | 2640 | G    |
| 8   | CB    | 2641 | G    |
| 8   | CB    | 2646 | C    |
| 8   | CB    | 2654 | A    |
| 8   | CB    | 2656 | U    |
| 8   | CB    | 2663 | G    |
| 8   | CB    | 2672 | U    |
| 8   | CB    | 2673 | G    |
| 8   | CB    | 2675 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2681 | C    |
| 8   | CB    | 2682 | A    |
| 8   | CB    | 2683 | C    |
| 8   | CB    | 2684 | U    |
| 8   | CB    | 2689 | U    |
| 8   | CB    | 2690 | U    |
| 8   | CB    | 2691 | C    |
| 8   | CB    | 2694 | G    |
| 8   | CB    | 2704 | C    |
| 8   | CB    | 2707 | U    |
| 8   | CB    | 2712 | C    |
| 8   | CB    | 2714 | G    |
| 8   | CB    | 2717 | C    |
| 8   | CB    | 2718 | G    |
| 8   | CB    | 2719 | G    |
| 8   | CB    | 2720 | U    |
| 8   | CB    | 2721 | A    |
| 8   | CB    | 2724 | U    |
| 8   | CB    | 2725 | A    |
| 8   | CB    | 2726 | A    |
| 8   | CB    | 2727 | A    |
| 8   | CB    | 2731 | G    |
| 8   | CB    | 2732 | G    |
| 8   | CB    | 2733 | A    |
| 8   | CB    | 2744 | G    |
| 8   | CB    | 2745 | C    |
| 8   | CB    | 2747 | G    |
| 8   | CB    | 2748 | A    |
| 8   | CB    | 2750 | A    |
| 8   | CB    | 2751 | G    |
| 8   | CB    | 2752 | C    |
| 8   | CB    | 2758 | A    |
| 8   | CB    | 2760 | C    |
| 8   | CB    | 2761 | A    |
| 8   | CB    | 2762 | C    |
| 8   | CB    | 2763 | G    |
| 8   | CB    | 2764 | A    |
| 8   | CB    | 2765 | A    |
| 8   | CB    | 2766 | A    |
| 8   | CB    | 2767 | C    |
| 8   | CB    | 2771 | C    |
| 8   | CB    | 2778 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2779 | U    |
| 8   | CB    | 2790 | U    |
| 8   | CB    | 2791 | G    |
| 8   | CB    | 2797 | U    |
| 8   | CB    | 2798 | U    |
| 8   | CB    | 2799 | A    |
| 8   | CB    | 2800 | A    |
| 8   | CB    | 2801 | G    |
| 8   | CB    | 2808 | G    |
| 8   | CB    | 2818 | U    |
| 8   | CB    | 2820 | A    |
| 8   | CB    | 2821 | A    |
| 8   | CB    | 2825 | G    |
| 8   | CB    | 2828 | G    |
| 8   | CB    | 2829 | A    |
| 8   | CB    | 2832 | U    |
| 8   | CB    | 2833 | U    |
| 8   | CB    | 2834 | G    |
| 8   | CB    | 2837 | A    |
| 8   | CB    | 2838 | G    |
| 8   | CB    | 2839 | G    |
| 8   | CB    | 2842 | G    |
| 8   | CB    | 2848 | G    |
| 8   | CB    | 2850 | A    |
| 8   | CB    | 2856 | A    |
| 8   | CB    | 2859 | G    |
| 8   | CB    | 2860 | A    |
| 8   | CB    | 2861 | U    |
| 8   | CB    | 2867 | G    |
| 8   | CB    | 2868 | A    |
| 8   | CB    | 2872 | A    |
| 8   | CB    | 2873 | A    |
| 8   | CB    | 2874 | C    |
| 8   | CB    | 2879 | A    |
| 8   | CB    | 2884 | U    |
| 8   | CB    | 2885 | G    |
| 8   | CB    | 2891 | U    |
| 8   | CB    | 2893 | A    |
| 8   | CB    | 2894 | G    |
| 8   | CB    | 2897 | U    |
| 8   | CB    | 2901 | C    |
| 8   | CB    | 2903 | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 6   | G    |
| 33  | DA    | 7   | A    |
| 33  | DA    | 8   | A    |
| 33  | DA    | 9   | G    |
| 33  | DA    | 14  | U    |
| 33  | DA    | 15  | G    |
| 33  | DA    | 21  | G    |
| 33  | DA    | 27  | G    |
| 33  | DA    | 31  | G    |
| 33  | DA    | 32  | A    |
| 33  | DA    | 34  | C    |
| 33  | DA    | 37  | U    |
| 33  | DA    | 39  | G    |
| 33  | DA    | 40  | C    |
| 33  | DA    | 41  | G    |
| 33  | DA    | 47  | C    |
| 33  | DA    | 48  | C    |
| 33  | DA    | 49  | U    |
| 33  | DA    | 50  | A    |
| 33  | DA    | 51  | A    |
| 33  | DA    | 52  | C    |
| 33  | DA    | 55  | A    |
| 33  | DA    | 58  | C    |
| 33  | DA    | 59  | A    |
| 33  | DA    | 60  | A    |
| 33  | DA    | 61  | G    |
| 33  | DA    | 64  | G    |
| 33  | DA    | 71  | A    |
| 33  | DA    | 72  | A    |
| 33  | DA    | 74  | A    |
| 33  | DA    | 82  | G    |
| 33  | DA    | 83  | C    |
| 33  | DA    | 84  | U    |
| 33  | DA    | 85  | U    |
| 33  | DA    | 86  | G    |
| 33  | DA    | 87  | C    |
| 33  | DA    | 90  | C    |
| 33  | DA    | 92  | U    |
| 33  | DA    | 94  | G    |
| 33  | DA    | 95  | C    |
| 33  | DA    | 101 | A    |
| 33  | DA    | 107 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 108 | G    |
| 33  | DA    | 109 | A    |
| 33  | DA    | 110 | C    |
| 33  | DA    | 115 | G    |
| 33  | DA    | 119 | A    |
| 33  | DA    | 120 | A    |
| 33  | DA    | 121 | U    |
| 33  | DA    | 122 | G    |
| 33  | DA    | 128 | G    |
| 33  | DA    | 129 | A    |
| 33  | DA    | 130 | A    |
| 33  | DA    | 131 | A    |
| 33  | DA    | 132 | C    |
| 33  | DA    | 146 | G    |
| 33  | DA    | 151 | A    |
| 33  | DA    | 155 | A    |
| 33  | DA    | 160 | A    |
| 33  | DA    | 164 | G    |
| 33  | DA    | 166 | U    |
| 33  | DA    | 174 | A    |
| 33  | DA    | 181 | A    |
| 33  | DA    | 182 | A    |
| 33  | DA    | 183 | C    |
| 33  | DA    | 189 | A    |
| 33  | DA    | 190 | A    |
| 33  | DA    | 196 | A    |
| 33  | DA    | 197 | A    |
| 33  | DA    | 198 | G    |
| 33  | DA    | 200 | G    |
| 33  | DA    | 209 | U    |
| 33  | DA    | 210 | C    |
| 33  | DA    | 213 | G    |
| 33  | DA    | 221 | C    |
| 33  | DA    | 226 | G    |
| 33  | DA    | 232 | G    |
| 33  | DA    | 235 | C    |
| 33  | DA    | 239 | U    |
| 33  | DA    | 240 | G    |
| 33  | DA    | 243 | A    |
| 33  | DA    | 244 | U    |
| 33  | DA    | 245 | U    |
| 33  | DA    | 246 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 247 | G    |
| 33  | DA    | 249 | U    |
| 33  | DA    | 250 | A    |
| 33  | DA    | 251 | G    |
| 33  | DA    | 252 | U    |
| 33  | DA    | 253 | A    |
| 33  | DA    | 257 | G    |
| 33  | DA    | 258 | G    |
| 33  | DA    | 266 | G    |
| 33  | DA    | 267 | C    |
| 33  | DA    | 268 | U    |
| 33  | DA    | 271 | C    |
| 33  | DA    | 275 | G    |
| 33  | DA    | 279 | A    |
| 33  | DA    | 280 | C    |
| 33  | DA    | 289 | G    |
| 33  | DA    | 293 | G    |
| 33  | DA    | 301 | G    |
| 33  | DA    | 306 | A    |
| 33  | DA    | 308 | C    |
| 33  | DA    | 317 | U    |
| 33  | DA    | 327 | A    |
| 33  | DA    | 328 | C    |
| 33  | DA    | 329 | A    |
| 33  | DA    | 330 | C    |
| 33  | DA    | 332 | G    |
| 33  | DA    | 338 | A    |
| 33  | DA    | 339 | C    |
| 33  | DA    | 340 | U    |
| 33  | DA    | 344 | A    |
| 33  | DA    | 345 | C    |
| 33  | DA    | 346 | G    |
| 33  | DA    | 350 | G    |
| 33  | DA    | 351 | G    |
| 33  | DA    | 352 | C    |
| 33  | DA    | 353 | A    |
| 33  | DA    | 354 | G    |
| 33  | DA    | 355 | C    |
| 33  | DA    | 363 | A    |
| 33  | DA    | 364 | A    |
| 33  | DA    | 367 | U    |
| 33  | DA    | 372 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 373 | A    |
| 33  | DA    | 374 | A    |
| 33  | DA    | 381 | C    |
| 33  | DA    | 382 | A    |
| 33  | DA    | 383 | A    |
| 33  | DA    | 384 | G    |
| 33  | DA    | 387 | U    |
| 33  | DA    | 388 | G    |
| 33  | DA    | 389 | A    |
| 33  | DA    | 391 | G    |
| 33  | DA    | 392 | C    |
| 33  | DA    | 393 | A    |
| 33  | DA    | 395 | C    |
| 33  | DA    | 396 | C    |
| 33  | DA    | 397 | A    |
| 33  | DA    | 398 | U    |
| 33  | DA    | 405 | U    |
| 33  | DA    | 406 | G    |
| 33  | DA    | 408 | A    |
| 33  | DA    | 411 | A    |
| 33  | DA    | 412 | A    |
| 33  | DA    | 413 | G    |
| 33  | DA    | 414 | A    |
| 33  | DA    | 415 | A    |
| 33  | DA    | 416 | G    |
| 33  | DA    | 417 | G    |
| 33  | DA    | 418 | C    |
| 33  | DA    | 420 | U    |
| 33  | DA    | 421 | U    |
| 33  | DA    | 422 | C    |
| 33  | DA    | 423 | G    |
| 33  | DA    | 424 | G    |
| 33  | DA    | 428 | G    |
| 33  | DA    | 429 | U    |
| 33  | DA    | 430 | A    |
| 33  | DA    | 431 | A    |
| 33  | DA    | 433 | G    |
| 33  | DA    | 434 | U    |
| 33  | DA    | 435 | A    |
| 33  | DA    | 437 | U    |
| 33  | DA    | 438 | U    |
| 33  | DA    | 445 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 446 | G    |
| 33  | DA    | 448 | A    |
| 33  | DA    | 451 | A    |
| 33  | DA    | 453 | G    |
| 33  | DA    | 460 | A    |
| 33  | DA    | 461 | A    |
| 33  | DA    | 462 | G    |
| 33  | DA    | 463 | U    |
| 33  | DA    | 464 | U    |
| 33  | DA    | 465 | A    |
| 33  | DA    | 466 | A    |
| 33  | DA    | 467 | U    |
| 33  | DA    | 468 | A    |
| 33  | DA    | 469 | C    |
| 33  | DA    | 473 | U    |
| 33  | DA    | 479 | U    |
| 33  | DA    | 481 | G    |
| 33  | DA    | 482 | A    |
| 33  | DA    | 484 | G    |
| 33  | DA    | 485 | U    |
| 33  | DA    | 486 | U    |
| 33  | DA    | 489 | C    |
| 33  | DA    | 493 | A    |
| 33  | DA    | 494 | G    |
| 33  | DA    | 495 | A    |
| 33  | DA    | 496 | A    |
| 33  | DA    | 499 | A    |
| 33  | DA    | 500 | G    |
| 33  | DA    | 503 | C    |
| 33  | DA    | 504 | C    |
| 33  | DA    | 507 | C    |
| 33  | DA    | 508 | U    |
| 33  | DA    | 509 | A    |
| 33  | DA    | 511 | C    |
| 33  | DA    | 514 | C    |
| 33  | DA    | 518 | C    |
| 33  | DA    | 524 | G    |
| 33  | DA    | 525 | C    |
| 33  | DA    | 527 | G    |
| 33  | DA    | 528 | C    |
| 33  | DA    | 530 | G    |
| 33  | DA    | 531 | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 532 | A    |
| 33  | DA    | 533 | A    |
| 33  | DA    | 537 | G    |
| 33  | DA    | 538 | G    |
| 33  | DA    | 545 | C    |
| 33  | DA    | 547 | A    |
| 33  | DA    | 548 | G    |
| 33  | DA    | 557 | G    |
| 33  | DA    | 558 | G    |
| 33  | DA    | 559 | A    |
| 33  | DA    | 560 | A    |
| 33  | DA    | 561 | U    |
| 33  | DA    | 562 | U    |
| 33  | DA    | 564 | C    |
| 33  | DA    | 566 | G    |
| 33  | DA    | 567 | G    |
| 33  | DA    | 572 | A    |
| 33  | DA    | 573 | A    |
| 33  | DA    | 575 | G    |
| 33  | DA    | 576 | C    |
| 33  | DA    | 577 | G    |
| 33  | DA    | 579 | A    |
| 33  | DA    | 585 | G    |
| 33  | DA    | 586 | C    |
| 33  | DA    | 587 | G    |
| 33  | DA    | 588 | G    |
| 33  | DA    | 589 | U    |
| 33  | DA    | 593 | U    |
| 33  | DA    | 595 | A    |
| 33  | DA    | 596 | A    |
| 33  | DA    | 604 | G    |
| 33  | DA    | 610 | U    |
| 33  | DA    | 617 | G    |
| 33  | DA    | 620 | C    |
| 33  | DA    | 623 | C    |
| 33  | DA    | 630 | A    |
| 33  | DA    | 639 | G    |
| 33  | DA    | 642 | A    |
| 33  | DA    | 649 | A    |
| 33  | DA    | 652 | U    |
| 33  | DA    | 653 | U    |
| 33  | DA    | 654 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 655 | A    |
| 33  | DA    | 657 | U    |
| 33  | DA    | 661 | G    |
| 33  | DA    | 664 | G    |
| 33  | DA    | 665 | A    |
| 33  | DA    | 668 | G    |
| 33  | DA    | 669 | G    |
| 33  | DA    | 672 | U    |
| 33  | DA    | 679 | C    |
| 33  | DA    | 687 | A    |
| 33  | DA    | 690 | G    |
| 33  | DA    | 691 | G    |
| 33  | DA    | 692 | U    |
| 33  | DA    | 700 | G    |
| 33  | DA    | 701 | U    |
| 33  | DA    | 702 | A    |
| 33  | DA    | 703 | G    |
| 33  | DA    | 704 | A    |
| 33  | DA    | 705 | G    |
| 33  | DA    | 712 | A    |
| 33  | DA    | 713 | G    |
| 33  | DA    | 714 | G    |
| 33  | DA    | 718 | A    |
| 33  | DA    | 720 | C    |
| 33  | DA    | 721 | G    |
| 33  | DA    | 722 | G    |
| 33  | DA    | 723 | U    |
| 33  | DA    | 724 | G    |
| 33  | DA    | 725 | G    |
| 33  | DA    | 726 | C    |
| 33  | DA    | 728 | A    |
| 33  | DA    | 729 | A    |
| 33  | DA    | 731 | G    |
| 33  | DA    | 733 | G    |
| 33  | DA    | 734 | G    |
| 33  | DA    | 737 | C    |
| 33  | DA    | 738 | C    |
| 33  | DA    | 739 | C    |
| 33  | DA    | 740 | U    |
| 33  | DA    | 741 | G    |
| 33  | DA    | 742 | G    |
| 33  | DA    | 743 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 744 | C    |
| 33  | DA    | 746 | A    |
| 33  | DA    | 747 | A    |
| 33  | DA    | 748 | G    |
| 33  | DA    | 749 | A    |
| 33  | DA    | 753 | A    |
| 33  | DA    | 755 | G    |
| 33  | DA    | 757 | U    |
| 33  | DA    | 760 | G    |
| 33  | DA    | 765 | G    |
| 33  | DA    | 766 | A    |
| 33  | DA    | 767 | A    |
| 33  | DA    | 768 | A    |
| 33  | DA    | 771 | G    |
| 33  | DA    | 774 | G    |
| 33  | DA    | 775 | G    |
| 33  | DA    | 776 | G    |
| 33  | DA    | 777 | A    |
| 33  | DA    | 779 | C    |
| 33  | DA    | 780 | A    |
| 33  | DA    | 781 | A    |
| 33  | DA    | 782 | A    |
| 33  | DA    | 786 | G    |
| 33  | DA    | 791 | G    |
| 33  | DA    | 792 | A    |
| 33  | DA    | 793 | U    |
| 33  | DA    | 794 | A    |
| 33  | DA    | 795 | C    |
| 33  | DA    | 798 | U    |
| 33  | DA    | 802 | A    |
| 33  | DA    | 803 | G    |
| 33  | DA    | 804 | U    |
| 33  | DA    | 805 | C    |
| 33  | DA    | 806 | C    |
| 33  | DA    | 811 | C    |
| 33  | DA    | 812 | G    |
| 33  | DA    | 813 | U    |
| 33  | DA    | 814 | A    |
| 33  | DA    | 815 | A    |
| 33  | DA    | 816 | A    |
| 33  | DA    | 817 | C    |
| 33  | DA    | 818 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 819 | A    |
| 33  | DA    | 820 | U    |
| 33  | DA    | 821 | G    |
| 33  | DA    | 826 | C    |
| 33  | DA    | 828 | U    |
| 33  | DA    | 829 | G    |
| 33  | DA    | 832 | G    |
| 33  | DA    | 836 | G    |
| 33  | DA    | 840 | C    |
| 33  | DA    | 841 | C    |
| 33  | DA    | 842 | U    |
| 33  | DA    | 843 | U    |
| 33  | DA    | 844 | G    |
| 33  | DA    | 845 | A    |
| 33  | DA    | 846 | G    |
| 33  | DA    | 849 | G    |
| 33  | DA    | 850 | U    |
| 33  | DA    | 854 | U    |
| 33  | DA    | 862 | C    |
| 33  | DA    | 867 | G    |
| 33  | DA    | 870 | U    |
| 33  | DA    | 871 | U    |
| 33  | DA    | 873 | A    |
| 33  | DA    | 874 | G    |
| 33  | DA    | 875 | U    |
| 33  | DA    | 877 | G    |
| 33  | DA    | 878 | A    |
| 33  | DA    | 879 | C    |
| 33  | DA    | 881 | G    |
| 33  | DA    | 884 | U    |
| 33  | DA    | 885 | G    |
| 33  | DA    | 886 | G    |
| 33  | DA    | 887 | G    |
| 33  | DA    | 889 | A    |
| 33  | DA    | 890 | G    |
| 33  | DA    | 891 | U    |
| 33  | DA    | 893 | C    |
| 33  | DA    | 894 | G    |
| 33  | DA    | 901 | A    |
| 33  | DA    | 902 | G    |
| 33  | DA    | 906 | A    |
| 33  | DA    | 907 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 911  | U    |
| 33  | DA    | 912  | C    |
| 33  | DA    | 913  | A    |
| 33  | DA    | 914  | A    |
| 33  | DA    | 926  | G    |
| 33  | DA    | 927  | G    |
| 33  | DA    | 928  | G    |
| 33  | DA    | 930  | C    |
| 33  | DA    | 934  | C    |
| 33  | DA    | 935  | A    |
| 33  | DA    | 936  | C    |
| 33  | DA    | 939  | G    |
| 33  | DA    | 940  | C    |
| 33  | DA    | 941  | G    |
| 33  | DA    | 942  | G    |
| 33  | DA    | 944  | G    |
| 33  | DA    | 945  | G    |
| 33  | DA    | 953  | G    |
| 33  | DA    | 960  | U    |
| 33  | DA    | 961  | U    |
| 33  | DA    | 966  | G    |
| 33  | DA    | 968  | A    |
| 33  | DA    | 969  | A    |
| 33  | DA    | 971  | G    |
| 33  | DA    | 972  | C    |
| 33  | DA    | 973  | G    |
| 33  | DA    | 974  | A    |
| 33  | DA    | 975  | A    |
| 33  | DA    | 976  | G    |
| 33  | DA    | 977  | A    |
| 33  | DA    | 983  | A    |
| 33  | DA    | 984  | C    |
| 33  | DA    | 985  | C    |
| 33  | DA    | 991  | U    |
| 33  | DA    | 992  | U    |
| 33  | DA    | 993  | G    |
| 33  | DA    | 996  | A    |
| 33  | DA    | 998  | C    |
| 33  | DA    | 1004 | A    |
| 33  | DA    | 1006 | G    |
| 33  | DA    | 1007 | U    |
| 33  | DA    | 1009 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1010 | U    |
| 33  | DA    | 1014 | A    |
| 33  | DA    | 1015 | G    |
| 33  | DA    | 1016 | A    |
| 33  | DA    | 1017 | U    |
| 33  | DA    | 1018 | G    |
| 33  | DA    | 1019 | A    |
| 33  | DA    | 1020 | G    |
| 33  | DA    | 1021 | A    |
| 33  | DA    | 1022 | A    |
| 33  | DA    | 1023 | U    |
| 33  | DA    | 1025 | U    |
| 33  | DA    | 1030 | U    |
| 33  | DA    | 1031 | C    |
| 33  | DA    | 1033 | G    |
| 33  | DA    | 1034 | G    |
| 33  | DA    | 1038 | C    |
| 33  | DA    | 1043 | G    |
| 33  | DA    | 1044 | A    |
| 33  | DA    | 1045 | C    |
| 33  | DA    | 1046 | A    |
| 33  | DA    | 1049 | U    |
| 33  | DA    | 1050 | G    |
| 33  | DA    | 1052 | U    |
| 33  | DA    | 1053 | G    |
| 33  | DA    | 1054 | C    |
| 33  | DA    | 1062 | U    |
| 33  | DA    | 1064 | G    |
| 33  | DA    | 1065 | U    |
| 33  | DA    | 1066 | C    |
| 33  | DA    | 1068 | G    |
| 33  | DA    | 1069 | C    |
| 33  | DA    | 1070 | U    |
| 33  | DA    | 1073 | U    |
| 33  | DA    | 1075 | U    |
| 33  | DA    | 1076 | U    |
| 33  | DA    | 1077 | G    |
| 33  | DA    | 1079 | G    |
| 33  | DA    | 1080 | A    |
| 33  | DA    | 1084 | G    |
| 33  | DA    | 1089 | G    |
| 33  | DA    | 1090 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1091 | U    |
| 33  | DA    | 1093 | A    |
| 33  | DA    | 1094 | G    |
| 33  | DA    | 1095 | U    |
| 33  | DA    | 1100 | C    |
| 33  | DA    | 1101 | A    |
| 33  | DA    | 1105 | A    |
| 33  | DA    | 1106 | G    |
| 33  | DA    | 1107 | C    |
| 33  | DA    | 1108 | G    |
| 33  | DA    | 1112 | C    |
| 33  | DA    | 1113 | C    |
| 33  | DA    | 1115 | U    |
| 33  | DA    | 1116 | U    |
| 33  | DA    | 1118 | U    |
| 33  | DA    | 1119 | C    |
| 33  | DA    | 1130 | A    |
| 33  | DA    | 1135 | U    |
| 33  | DA    | 1136 | C    |
| 33  | DA    | 1137 | C    |
| 33  | DA    | 1138 | G    |
| 33  | DA    | 1139 | G    |
| 33  | DA    | 1140 | C    |
| 33  | DA    | 1143 | G    |
| 33  | DA    | 1150 | A    |
| 33  | DA    | 1151 | A    |
| 33  | DA    | 1152 | A    |
| 33  | DA    | 1155 | A    |
| 33  | DA    | 1157 | A    |
| 33  | DA    | 1158 | C    |
| 33  | DA    | 1159 | U    |
| 33  | DA    | 1160 | G    |
| 33  | DA    | 1161 | C    |
| 33  | DA    | 1167 | A    |
| 33  | DA    | 1168 | U    |
| 33  | DA    | 1171 | A    |
| 33  | DA    | 1172 | C    |
| 33  | DA    | 1174 | G    |
| 33  | DA    | 1178 | G    |
| 33  | DA    | 1179 | A    |
| 33  | DA    | 1180 | A    |
| 33  | DA    | 1181 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1183 | U    |
| 33  | DA    | 1184 | G    |
| 33  | DA    | 1185 | G    |
| 33  | DA    | 1186 | G    |
| 33  | DA    | 1188 | A    |
| 33  | DA    | 1190 | G    |
| 33  | DA    | 1192 | C    |
| 33  | DA    | 1195 | C    |
| 33  | DA    | 1196 | A    |
| 33  | DA    | 1197 | A    |
| 33  | DA    | 1198 | G    |
| 33  | DA    | 1199 | U    |
| 33  | DA    | 1201 | A    |
| 33  | DA    | 1202 | U    |
| 33  | DA    | 1206 | G    |
| 33  | DA    | 1207 | G    |
| 33  | DA    | 1211 | U    |
| 33  | DA    | 1212 | U    |
| 33  | DA    | 1213 | A    |
| 33  | DA    | 1214 | C    |
| 33  | DA    | 1223 | C    |
| 33  | DA    | 1224 | U    |
| 33  | DA    | 1225 | A    |
| 33  | DA    | 1226 | C    |
| 33  | DA    | 1227 | A    |
| 33  | DA    | 1228 | C    |
| 33  | DA    | 1229 | A    |
| 33  | DA    | 1234 | C    |
| 33  | DA    | 1236 | A    |
| 33  | DA    | 1238 | A    |
| 33  | DA    | 1239 | A    |
| 33  | DA    | 1240 | U    |
| 33  | DA    | 1241 | G    |
| 33  | DA    | 1249 | C    |
| 33  | DA    | 1250 | A    |
| 33  | DA    | 1251 | A    |
| 33  | DA    | 1253 | G    |
| 33  | DA    | 1256 | A    |
| 33  | DA    | 1257 | A    |
| 33  | DA    | 1258 | G    |
| 33  | DA    | 1260 | G    |
| 33  | DA    | 1265 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1266 | G    |
| 33  | DA    | 1267 | C    |
| 33  | DA    | 1270 | G    |
| 33  | DA    | 1274 | A    |
| 33  | DA    | 1277 | C    |
| 33  | DA    | 1278 | G    |
| 33  | DA    | 1279 | G    |
| 33  | DA    | 1280 | A    |
| 33  | DA    | 1281 | C    |
| 33  | DA    | 1285 | A    |
| 33  | DA    | 1286 | U    |
| 33  | DA    | 1288 | A    |
| 33  | DA    | 1289 | A    |
| 33  | DA    | 1290 | G    |
| 33  | DA    | 1291 | U    |
| 33  | DA    | 1298 | U    |
| 33  | DA    | 1300 | G    |
| 33  | DA    | 1302 | C    |
| 33  | DA    | 1303 | C    |
| 33  | DA    | 1304 | G    |
| 33  | DA    | 1305 | G    |
| 33  | DA    | 1307 | U    |
| 33  | DA    | 1312 | G    |
| 33  | DA    | 1316 | G    |
| 33  | DA    | 1319 | A    |
| 33  | DA    | 1320 | C    |
| 33  | DA    | 1324 | A    |
| 33  | DA    | 1331 | G    |
| 33  | DA    | 1332 | A    |
| 33  | DA    | 1335 | U    |
| 33  | DA    | 1338 | G    |
| 33  | DA    | 1342 | C    |
| 33  | DA    | 1343 | G    |
| 33  | DA    | 1346 | A    |
| 33  | DA    | 1347 | G    |
| 33  | DA    | 1348 | U    |
| 33  | DA    | 1353 | G    |
| 33  | DA    | 1354 | U    |
| 33  | DA    | 1357 | A    |
| 33  | DA    | 1358 | U    |
| 33  | DA    | 1362 | A    |
| 33  | DA    | 1363 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1364 | U    |
| 33  | DA    | 1365 | G    |
| 33  | DA    | 1375 | A    |
| 33  | DA    | 1377 | A    |
| 33  | DA    | 1378 | C    |
| 33  | DA    | 1380 | U    |
| 33  | DA    | 1381 | U    |
| 33  | DA    | 1389 | C    |
| 33  | DA    | 1390 | U    |
| 33  | DA    | 1393 | U    |
| 33  | DA    | 1395 | C    |
| 33  | DA    | 1396 | A    |
| 33  | DA    | 1397 | C    |
| 33  | DA    | 1398 | A    |
| 33  | DA    | 1399 | C    |
| 33  | DA    | 1400 | C    |
| 33  | DA    | 1402 | C    |
| 33  | DA    | 1407 | C    |
| 33  | DA    | 1415 | G    |
| 33  | DA    | 1418 | A    |
| 33  | DA    | 1419 | G    |
| 33  | DA    | 1421 | G    |
| 33  | DA    | 1422 | G    |
| 33  | DA    | 1423 | G    |
| 33  | DA    | 1424 | U    |
| 33  | DA    | 1425 | U    |
| 33  | DA    | 1426 | G    |
| 33  | DA    | 1427 | C    |
| 33  | DA    | 1428 | A    |
| 33  | DA    | 1431 | A    |
| 33  | DA    | 1432 | G    |
| 33  | DA    | 1433 | A    |
| 33  | DA    | 1441 | A    |
| 33  | DA    | 1442 | G    |
| 33  | DA    | 1446 | A    |
| 33  | DA    | 1447 | A    |
| 33  | DA    | 1448 | C    |
| 33  | DA    | 1451 | U    |
| 33  | DA    | 1452 | C    |
| 33  | DA    | 1453 | G    |
| 33  | DA    | 1454 | G    |
| 33  | DA    | 1458 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1461 | G    |
| 33  | DA    | 1462 | C    |
| 33  | DA    | 1473 | G    |
| 33  | DA    | 1475 | G    |
| 33  | DA    | 1476 | A    |
| 33  | DA    | 1480 | A    |
| 33  | DA    | 1481 | U    |
| 33  | DA    | 1482 | G    |
| 33  | DA    | 1484 | C    |
| 33  | DA    | 1489 | G    |
| 33  | DA    | 1490 | U    |
| 33  | DA    | 1493 | A    |
| 33  | DA    | 1494 | G    |
| 33  | DA    | 1497 | G    |
| 33  | DA    | 1498 | U    |
| 33  | DA    | 1499 | A    |
| 33  | DA    | 1502 | A    |
| 33  | DA    | 1503 | A    |
| 33  | DA    | 1504 | G    |
| 33  | DA    | 1505 | G    |
| 33  | DA    | 1506 | U    |
| 33  | DA    | 1507 | A    |
| 33  | DA    | 1512 | U    |
| 33  | DA    | 1516 | G    |
| 33  | DA    | 1517 | G    |
| 33  | DA    | 1519 | A    |
| 33  | DA    | 1520 | C    |
| 33  | DA    | 1522 | U    |
| 33  | DA    | 1527 | U    |
| 33  | DA    | 1528 | U    |
| 33  | DA    | 1529 | G    |
| 33  | DA    | 1530 | G    |
| 33  | DA    | 1534 | A    |

All (1224) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AA    | 7   | G    |
| 7   | AA    | 10  | G    |
| 7   | AA    | 12  | C    |
| 7   | AA    | 14  | U    |
| 7   | AA    | 15  | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AA    | 25  | U    |
| 7   | AA    | 26  | C    |
| 7   | AA    | 27  | C    |
| 7   | AA    | 44  | G    |
| 7   | AA    | 66  | A    |
| 7   | AA    | 107 | G    |
| 7   | AA    | 108 | A    |
| 8   | AB    | 27  | G    |
| 8   | AB    | 33  | C    |
| 8   | AB    | 34  | U    |
| 8   | AB    | 49  | A    |
| 8   | AB    | 60  | G    |
| 8   | AB    | 62  | U    |
| 8   | AB    | 63  | A    |
| 8   | AB    | 84  | A    |
| 8   | AB    | 91  | A    |
| 8   | AB    | 92  | U    |
| 8   | AB    | 98  | G    |
| 8   | AB    | 102 | U    |
| 8   | AB    | 116 | C    |
| 8   | AB    | 118 | A    |
| 8   | AB    | 119 | A    |
| 8   | AB    | 125 | A    |
| 8   | AB    | 126 | A    |
| 8   | AB    | 127 | A    |
| 8   | AB    | 129 | C    |
| 8   | AB    | 132 | G    |
| 8   | AB    | 140 | C    |
| 8   | AB    | 147 | C    |
| 8   | AB    | 162 | U    |
| 8   | AB    | 177 | G    |
| 8   | AB    | 187 | G    |
| 8   | AB    | 194 | G    |
| 8   | AB    | 196 | A    |
| 8   | AB    | 197 | A    |
| 8   | AB    | 198 | C    |
| 8   | AB    | 199 | A    |
| 8   | AB    | 204 | A    |
| 8   | AB    | 215 | G    |
| 8   | AB    | 222 | A    |
| 8   | AB    | 228 | C    |
| 8   | AB    | 239 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 243 | U    |
| 8   | AB    | 247 | G    |
| 8   | AB    | 255 | A    |
| 8   | AB    | 260 | G    |
| 8   | AB    | 312 | G    |
| 8   | AB    | 321 | U    |
| 8   | AB    | 323 | C    |
| 8   | AB    | 327 | G    |
| 8   | AB    | 328 | U    |
| 8   | AB    | 329 | G    |
| 8   | AB    | 330 | A    |
| 8   | AB    | 331 | C    |
| 8   | AB    | 333 | G    |
| 8   | AB    | 340 | A    |
| 8   | AB    | 346 | A    |
| 8   | AB    | 361 | G    |
| 8   | AB    | 363 | G    |
| 8   | AB    | 367 | G    |
| 8   | AB    | 369 | U    |
| 8   | AB    | 370 | G    |
| 8   | AB    | 374 | A    |
| 8   | AB    | 375 | G    |
| 8   | AB    | 386 | G    |
| 8   | AB    | 387 | U    |
| 8   | AB    | 394 | C    |
| 8   | AB    | 396 | G    |
| 8   | AB    | 404 | A    |
| 8   | AB    | 408 | G    |
| 8   | AB    | 434 | U    |
| 8   | AB    | 447 | A    |
| 8   | AB    | 456 | C    |
| 8   | AB    | 458 | G    |
| 8   | AB    | 465 | G    |
| 8   | AB    | 468 | G    |
| 8   | AB    | 478 | A    |
| 8   | AB    | 479 | A    |
| 8   | AB    | 489 | G    |
| 8   | AB    | 492 | A    |
| 8   | AB    | 503 | A    |
| 8   | AB    | 504 | A    |
| 8   | AB    | 526 | A    |
| 8   | AB    | 529 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AB    | 530 | G    |
| 8   | AB    | 531 | C    |
| 8   | AB    | 532 | A    |
| 8   | AB    | 546 | U    |
| 8   | AB    | 549 | G    |
| 8   | AB    | 550 | C    |
| 8   | AB    | 555 | G    |
| 8   | AB    | 560 | C    |
| 8   | AB    | 563 | A    |
| 8   | AB    | 568 | U    |
| 8   | AB    | 571 | U    |
| 8   | AB    | 573 | U    |
| 8   | AB    | 574 | A    |
| 8   | AB    | 575 | A    |
| 8   | AB    | 576 | U    |
| 8   | AB    | 604 | G    |
| 8   | AB    | 608 | A    |
| 8   | AB    | 613 | A    |
| 8   | AB    | 614 | A    |
| 8   | AB    | 620 | G    |
| 8   | AB    | 627 | A    |
| 8   | AB    | 631 | A    |
| 8   | AB    | 655 | A    |
| 8   | AB    | 667 | U    |
| 8   | AB    | 669 | G    |
| 8   | AB    | 670 | A    |
| 8   | AB    | 675 | A    |
| 8   | AB    | 677 | A    |
| 8   | AB    | 683 | U    |
| 8   | AB    | 689 | A    |
| 8   | AB    | 701 | G    |
| 8   | AB    | 726 | G    |
| 8   | AB    | 728 | G    |
| 8   | AB    | 740 | C    |
| 8   | AB    | 761 | A    |
| 8   | AB    | 773 | U    |
| 8   | AB    | 774 | G    |
| 8   | AB    | 775 | G    |
| 8   | AB    | 776 | G    |
| 8   | AB    | 784 | G    |
| 8   | AB    | 788 | A    |
| 8   | AB    | 793 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 795  | C    |
| 8   | AB    | 796  | C    |
| 8   | AB    | 799  | G    |
| 8   | AB    | 800  | A    |
| 8   | AB    | 801  | G    |
| 8   | AB    | 802  | A    |
| 8   | AB    | 808  | G    |
| 8   | AB    | 811  | U    |
| 8   | AB    | 827  | U    |
| 8   | AB    | 829  | A    |
| 8   | AB    | 865  | C    |
| 8   | AB    | 874  | G    |
| 8   | AB    | 900  | A    |
| 8   | AB    | 910  | A    |
| 8   | AB    | 911  | A    |
| 8   | AB    | 915  | C    |
| 8   | AB    | 931  | U    |
| 8   | AB    | 932  | U    |
| 8   | AB    | 933  | A    |
| 8   | AB    | 944  | C    |
| 8   | AB    | 945  | A    |
| 8   | AB    | 962  | G    |
| 8   | AB    | 969  | G    |
| 8   | AB    | 975  | A    |
| 8   | AB    | 980  | A    |
| 8   | AB    | 982  | C    |
| 8   | AB    | 988  | A    |
| 8   | AB    | 990  | A    |
| 8   | AB    | 991  | C    |
| 8   | AB    | 995  | C    |
| 8   | AB    | 1010 | A    |
| 8   | AB    | 1011 | G    |
| 8   | AB    | 1020 | A    |
| 8   | AB    | 1023 | U    |
| 8   | AB    | 1026 | G    |
| 8   | AB    | 1028 | A    |
| 8   | AB    | 1033 | U    |
| 8   | AB    | 1061 | U    |
| 8   | AB    | 1087 | G    |
| 8   | AB    | 1090 | A    |
| 8   | AB    | 1109 | C    |
| 8   | AB    | 1110 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1111 | A    |
| 8   | AB    | 1113 | U    |
| 8   | AB    | 1122 | G    |
| 8   | AB    | 1125 | G    |
| 8   | AB    | 1126 | A    |
| 8   | AB    | 1128 | G    |
| 8   | AB    | 1130 | U    |
| 8   | AB    | 1134 | A    |
| 8   | AB    | 1141 | U    |
| 8   | AB    | 1142 | A    |
| 8   | AB    | 1156 | A    |
| 8   | AB    | 1157 | G    |
| 8   | AB    | 1199 | U    |
| 8   | AB    | 1204 | A    |
| 8   | AB    | 1205 | A    |
| 8   | AB    | 1210 | G    |
| 8   | AB    | 1211 | C    |
| 8   | AB    | 1216 | G    |
| 8   | AB    | 1234 | U    |
| 8   | AB    | 1236 | G    |
| 8   | AB    | 1250 | G    |
| 8   | AB    | 1253 | A    |
| 8   | AB    | 1257 | C    |
| 8   | AB    | 1264 | A    |
| 8   | AB    | 1265 | A    |
| 8   | AB    | 1266 | G    |
| 8   | AB    | 1270 | C    |
| 8   | AB    | 1272 | A    |
| 8   | AB    | 1275 | A    |
| 8   | AB    | 1288 | G    |
| 8   | AB    | 1291 | C    |
| 8   | AB    | 1296 | G    |
| 8   | AB    | 1300 | G    |
| 8   | AB    | 1301 | A    |
| 8   | AB    | 1311 | G    |
| 8   | AB    | 1320 | C    |
| 8   | AB    | 1321 | A    |
| 8   | AB    | 1340 | U    |
| 8   | AB    | 1341 | G    |
| 8   | AB    | 1359 | A    |
| 8   | AB    | 1378 | A    |
| 8   | AB    | 1379 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1382 | G    |
| 8   | AB    | 1392 | A    |
| 8   | AB    | 1395 | A    |
| 8   | AB    | 1419 | A    |
| 8   | AB    | 1420 | A    |
| 8   | AB    | 1427 | A    |
| 8   | AB    | 1434 | A    |
| 8   | AB    | 1450 | G    |
| 8   | AB    | 1451 | C    |
| 8   | AB    | 1454 | C    |
| 8   | AB    | 1458 | U    |
| 8   | AB    | 1459 | G    |
| 8   | AB    | 1460 | U    |
| 8   | AB    | 1490 | A    |
| 8   | AB    | 1497 | U    |
| 8   | AB    | 1522 | A    |
| 8   | AB    | 1554 | U    |
| 8   | AB    | 1559 | U    |
| 8   | AB    | 1565 | C    |
| 8   | AB    | 1567 | G    |
| 8   | AB    | 1583 | A    |
| 8   | AB    | 1601 | G    |
| 8   | AB    | 1602 | U    |
| 8   | AB    | 1607 | C    |
| 8   | AB    | 1610 | A    |
| 8   | AB    | 1616 | A    |
| 8   | AB    | 1617 | C    |
| 8   | AB    | 1632 | A    |
| 8   | AB    | 1646 | C    |
| 8   | AB    | 1647 | U    |
| 8   | AB    | 1652 | A    |
| 8   | AB    | 1663 | G    |
| 8   | AB    | 1677 | A    |
| 8   | AB    | 1694 | C    |
| 8   | AB    | 1696 | G    |
| 8   | AB    | 1713 | A    |
| 8   | AB    | 1721 | G    |
| 8   | AB    | 1732 | C    |
| 8   | AB    | 1737 | G    |
| 8   | AB    | 1758 | U    |
| 8   | AB    | 1781 | U    |
| 8   | AB    | 1782 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 1784 | A    |
| 8   | AB    | 1786 | A    |
| 8   | AB    | 1787 | A    |
| 8   | AB    | 1814 | G    |
| 8   | AB    | 1815 | A    |
| 8   | AB    | 1817 | G    |
| 8   | AB    | 1819 | A    |
| 8   | AB    | 1828 | G    |
| 8   | AB    | 1829 | A    |
| 8   | AB    | 1847 | A    |
| 8   | AB    | 1857 | G    |
| 8   | AB    | 1870 | C    |
| 8   | AB    | 1885 | A    |
| 8   | AB    | 1888 | G    |
| 8   | AB    | 1913 | A    |
| 8   | AB    | 1929 | G    |
| 8   | AB    | 1936 | A    |
| 8   | AB    | 1937 | A    |
| 8   | AB    | 1938 | A    |
| 8   | AB    | 1939 | U    |
| 8   | AB    | 1940 | U    |
| 8   | AB    | 1941 | C    |
| 8   | AB    | 1943 | U    |
| 8   | AB    | 1964 | G    |
| 8   | AB    | 1966 | A    |
| 8   | AB    | 1973 | G    |
| 8   | AB    | 1980 | G    |
| 8   | AB    | 1996 | C    |
| 8   | AB    | 2003 | A    |
| 8   | AB    | 2014 | A    |
| 8   | AB    | 2016 | U    |
| 8   | AB    | 2021 | C    |
| 8   | AB    | 2031 | A    |
| 8   | AB    | 2034 | U    |
| 8   | AB    | 2035 | G    |
| 8   | AB    | 2046 | G    |
| 8   | AB    | 2051 | A    |
| 8   | AB    | 2058 | A    |
| 8   | AB    | 2060 | A    |
| 8   | AB    | 2061 | G    |
| 8   | AB    | 2062 | A    |
| 8   | AB    | 2067 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2074 | U    |
| 8   | AB    | 2075 | U    |
| 8   | AB    | 2080 | A    |
| 8   | AB    | 2090 | A    |
| 8   | AB    | 2092 | U    |
| 8   | AB    | 2103 | C    |
| 8   | AB    | 2104 | C    |
| 8   | AB    | 2133 | G    |
| 8   | AB    | 2135 | A    |
| 8   | AB    | 2140 | G    |
| 8   | AB    | 2144 | G    |
| 8   | AB    | 2179 | C    |
| 8   | AB    | 2199 | A    |
| 8   | AB    | 2210 | U    |
| 8   | AB    | 2211 | A    |
| 8   | AB    | 2212 | A    |
| 8   | AB    | 2223 | G    |
| 8   | AB    | 2225 | A    |
| 8   | AB    | 2238 | G    |
| 8   | AB    | 2258 | C    |
| 8   | AB    | 2281 | A    |
| 8   | AB    | 2282 | G    |
| 8   | AB    | 2289 | G    |
| 8   | AB    | 2296 | U    |
| 8   | AB    | 2307 | G    |
| 8   | AB    | 2324 | U    |
| 8   | AB    | 2331 | G    |
| 8   | AB    | 2333 | A    |
| 8   | AB    | 2334 | U    |
| 8   | AB    | 2336 | A    |
| 8   | AB    | 2343 | U    |
| 8   | AB    | 2344 | U    |
| 8   | AB    | 2345 | G    |
| 8   | AB    | 2352 | A    |
| 8   | AB    | 2358 | A    |
| 8   | AB    | 2370 | G    |
| 8   | AB    | 2382 | G    |
| 8   | AB    | 2391 | G    |
| 8   | AB    | 2392 | A    |
| 8   | AB    | 2406 | A    |
| 8   | AB    | 2407 | A    |
| 8   | AB    | 2423 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2425 | A    |
| 8   | AB    | 2434 | A    |
| 8   | AB    | 2448 | A    |
| 8   | AB    | 2452 | C    |
| 8   | AB    | 2453 | A    |
| 8   | AB    | 2458 | G    |
| 8   | AB    | 2460 | U    |
| 8   | AB    | 2473 | U    |
| 8   | AB    | 2478 | A    |
| 8   | AB    | 2488 | G    |
| 8   | AB    | 2500 | U    |
| 8   | AB    | 2503 | A    |
| 8   | AB    | 2505 | G    |
| 8   | AB    | 2506 | U    |
| 8   | AB    | 2516 | A    |
| 8   | AB    | 2517 | C    |
| 8   | AB    | 2519 | U    |
| 8   | AB    | 2521 | C    |
| 8   | AB    | 2525 | G    |
| 8   | AB    | 2529 | G    |
| 8   | AB    | 2543 | G    |
| 8   | AB    | 2566 | A    |
| 8   | AB    | 2571 | U    |
| 8   | AB    | 2581 | G    |
| 8   | AB    | 2585 | U    |
| 8   | AB    | 2587 | A    |
| 8   | AB    | 2594 | C    |
| 8   | AB    | 2609 | U    |
| 8   | AB    | 2613 | U    |
| 8   | AB    | 2614 | A    |
| 8   | AB    | 2629 | U    |
| 8   | AB    | 2674 | G    |
| 8   | AB    | 2681 | C    |
| 8   | AB    | 2683 | C    |
| 8   | AB    | 2689 | U    |
| 8   | AB    | 2690 | U    |
| 8   | AB    | 2706 | A    |
| 8   | AB    | 2711 | A    |
| 8   | AB    | 2717 | C    |
| 8   | AB    | 2718 | G    |
| 8   | AB    | 2719 | G    |
| 8   | AB    | 2724 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | AB    | 2726 | A    |
| 8   | AB    | 2739 | U    |
| 8   | AB    | 2749 | A    |
| 8   | AB    | 2750 | A    |
| 8   | AB    | 2751 | G    |
| 8   | AB    | 2754 | U    |
| 8   | AB    | 2758 | A    |
| 8   | AB    | 2763 | G    |
| 8   | AB    | 2765 | A    |
| 8   | AB    | 2778 | A    |
| 8   | AB    | 2799 | A    |
| 8   | AB    | 2800 | A    |
| 8   | AB    | 2807 | U    |
| 8   | AB    | 2808 | G    |
| 8   | AB    | 2820 | A    |
| 8   | AB    | 2832 | U    |
| 8   | AB    | 2833 | U    |
| 8   | AB    | 2835 | A    |
| 8   | AB    | 2850 | A    |
| 8   | AB    | 2860 | A    |
| 8   | AB    | 2867 | G    |
| 8   | AB    | 2873 | A    |
| 8   | AB    | 2879 | A    |
| 8   | AB    | 2884 | U    |
| 8   | AB    | 2893 | A    |
| 33  | BA    | 31   | G    |
| 33  | BA    | 47   | C    |
| 33  | BA    | 49   | U    |
| 33  | BA    | 51   | A    |
| 33  | BA    | 59   | A    |
| 33  | BA    | 60   | A    |
| 33  | BA    | 64   | G    |
| 33  | BA    | 71   | A    |
| 33  | BA    | 82   | G    |
| 33  | BA    | 83   | C    |
| 33  | BA    | 84   | U    |
| 33  | BA    | 85   | U    |
| 33  | BA    | 86   | G    |
| 33  | BA    | 94   | G    |
| 33  | BA    | 120  | A    |
| 33  | BA    | 128  | G    |
| 33  | BA    | 130  | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 159 | G    |
| 33  | BA    | 165 | G    |
| 33  | BA    | 181 | A    |
| 33  | BA    | 183 | C    |
| 33  | BA    | 189 | A    |
| 33  | BA    | 197 | A    |
| 33  | BA    | 220 | G    |
| 33  | BA    | 238 | A    |
| 33  | BA    | 239 | U    |
| 33  | BA    | 240 | G    |
| 33  | BA    | 243 | A    |
| 33  | BA    | 244 | U    |
| 33  | BA    | 249 | U    |
| 33  | BA    | 251 | G    |
| 33  | BA    | 266 | G    |
| 33  | BA    | 274 | A    |
| 33  | BA    | 279 | A    |
| 33  | BA    | 315 | A    |
| 33  | BA    | 328 | C    |
| 33  | BA    | 329 | A    |
| 33  | BA    | 339 | C    |
| 33  | BA    | 345 | C    |
| 33  | BA    | 348 | G    |
| 33  | BA    | 350 | G    |
| 33  | BA    | 351 | G    |
| 33  | BA    | 372 | C    |
| 33  | BA    | 373 | A    |
| 33  | BA    | 381 | C    |
| 33  | BA    | 383 | A    |
| 33  | BA    | 388 | G    |
| 33  | BA    | 391 | G    |
| 33  | BA    | 408 | A    |
| 33  | BA    | 411 | A    |
| 33  | BA    | 412 | A    |
| 33  | BA    | 413 | G    |
| 33  | BA    | 420 | U    |
| 33  | BA    | 422 | C    |
| 33  | BA    | 424 | G    |
| 33  | BA    | 429 | U    |
| 33  | BA    | 452 | A    |
| 33  | BA    | 461 | A    |
| 33  | BA    | 467 | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | BA    | 495 | A    |
| 33  | BA    | 496 | A    |
| 33  | BA    | 499 | A    |
| 33  | BA    | 511 | C    |
| 33  | BA    | 512 | U    |
| 33  | BA    | 530 | G    |
| 33  | BA    | 531 | U    |
| 33  | BA    | 533 | A    |
| 33  | BA    | 534 | U    |
| 33  | BA    | 546 | A    |
| 33  | BA    | 547 | A    |
| 33  | BA    | 559 | A    |
| 33  | BA    | 560 | A    |
| 33  | BA    | 561 | U    |
| 33  | BA    | 563 | A    |
| 33  | BA    | 571 | U    |
| 33  | BA    | 575 | G    |
| 33  | BA    | 576 | C    |
| 33  | BA    | 579 | A    |
| 33  | BA    | 587 | G    |
| 33  | BA    | 594 | U    |
| 33  | BA    | 595 | A    |
| 33  | BA    | 604 | G    |
| 33  | BA    | 606 | G    |
| 33  | BA    | 640 | A    |
| 33  | BA    | 641 | U    |
| 33  | BA    | 642 | A    |
| 33  | BA    | 652 | U    |
| 33  | BA    | 663 | A    |
| 33  | BA    | 665 | A    |
| 33  | BA    | 678 | U    |
| 33  | BA    | 680 | C    |
| 33  | BA    | 691 | G    |
| 33  | BA    | 704 | A    |
| 33  | BA    | 706 | A    |
| 33  | BA    | 712 | A    |
| 33  | BA    | 723 | U    |
| 33  | BA    | 727 | G    |
| 33  | BA    | 729 | A    |
| 33  | BA    | 734 | G    |
| 33  | BA    | 752 | G    |
| 33  | BA    | 754 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 778  | G    |
| 33  | BA    | 793  | U    |
| 33  | BA    | 804  | U    |
| 33  | BA    | 807  | A    |
| 33  | BA    | 809  | G    |
| 33  | BA    | 815  | A    |
| 33  | BA    | 817  | C    |
| 33  | BA    | 820  | U    |
| 33  | BA    | 836  | G    |
| 33  | BA    | 854  | U    |
| 33  | BA    | 863  | U    |
| 33  | BA    | 870  | U    |
| 33  | BA    | 871  | U    |
| 33  | BA    | 872  | A    |
| 33  | BA    | 884  | U    |
| 33  | BA    | 889  | A    |
| 33  | BA    | 890  | G    |
| 33  | BA    | 906  | A    |
| 33  | BA    | 910  | C    |
| 33  | BA    | 913  | A    |
| 33  | BA    | 931  | C    |
| 33  | BA    | 934  | C    |
| 33  | BA    | 939  | G    |
| 33  | BA    | 960  | U    |
| 33  | BA    | 975  | A    |
| 33  | BA    | 979  | C    |
| 33  | BA    | 982  | U    |
| 33  | BA    | 991  | U    |
| 33  | BA    | 992  | U    |
| 33  | BA    | 993  | G    |
| 33  | BA    | 994  | A    |
| 33  | BA    | 1025 | U    |
| 33  | BA    | 1031 | C    |
| 33  | BA    | 1034 | G    |
| 33  | BA    | 1049 | U    |
| 33  | BA    | 1053 | G    |
| 33  | BA    | 1065 | U    |
| 33  | BA    | 1068 | G    |
| 33  | BA    | 1075 | U    |
| 33  | BA    | 1085 | U    |
| 33  | BA    | 1089 | G    |
| 33  | BA    | 1100 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 1101 | A    |
| 33  | BA    | 1102 | A    |
| 33  | BA    | 1107 | C    |
| 33  | BA    | 1108 | G    |
| 33  | BA    | 1111 | A    |
| 33  | BA    | 1118 | U    |
| 33  | BA    | 1124 | G    |
| 33  | BA    | 1126 | U    |
| 33  | BA    | 1129 | C    |
| 33  | BA    | 1136 | C    |
| 33  | BA    | 1137 | C    |
| 33  | BA    | 1143 | G    |
| 33  | BA    | 1144 | G    |
| 33  | BA    | 1157 | A    |
| 33  | BA    | 1168 | U    |
| 33  | BA    | 1181 | G    |
| 33  | BA    | 1191 | A    |
| 33  | BA    | 1196 | A    |
| 33  | BA    | 1198 | G    |
| 33  | BA    | 1200 | C    |
| 33  | BA    | 1201 | A    |
| 33  | BA    | 1212 | U    |
| 33  | BA    | 1214 | C    |
| 33  | BA    | 1226 | C    |
| 33  | BA    | 1227 | A    |
| 33  | BA    | 1240 | U    |
| 33  | BA    | 1253 | G    |
| 33  | BA    | 1255 | G    |
| 33  | BA    | 1257 | A    |
| 33  | BA    | 1280 | A    |
| 33  | BA    | 1285 | A    |
| 33  | BA    | 1286 | U    |
| 33  | BA    | 1298 | U    |
| 33  | BA    | 1299 | A    |
| 33  | BA    | 1301 | U    |
| 33  | BA    | 1302 | C    |
| 33  | BA    | 1315 | U    |
| 33  | BA    | 1318 | A    |
| 33  | BA    | 1319 | A    |
| 33  | BA    | 1322 | C    |
| 33  | BA    | 1336 | C    |
| 33  | BA    | 1338 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | BA    | 1345 | U    |
| 33  | BA    | 1373 | G    |
| 33  | BA    | 1378 | C    |
| 33  | BA    | 1380 | U    |
| 33  | BA    | 1391 | U    |
| 33  | BA    | 1394 | A    |
| 33  | BA    | 1397 | C    |
| 33  | BA    | 1418 | A    |
| 33  | BA    | 1432 | G    |
| 33  | BA    | 1446 | A    |
| 33  | BA    | 1447 | A    |
| 33  | BA    | 1467 | C    |
| 33  | BA    | 1472 | U    |
| 33  | BA    | 1502 | A    |
| 33  | BA    | 1505 | G    |
| 33  | BA    | 1506 | U    |
| 33  | BA    | 1513 | A    |
| 33  | BA    | 1520 | C    |
| 33  | BA    | 1528 | U    |
| 7   | CA    | 2    | G    |
| 7   | CA    | 7    | G    |
| 7   | CA    | 10   | G    |
| 7   | CA    | 12   | C    |
| 7   | CA    | 14   | U    |
| 7   | CA    | 15   | A    |
| 7   | CA    | 25   | U    |
| 7   | CA    | 31   | C    |
| 7   | CA    | 34   | A    |
| 7   | CA    | 44   | G    |
| 7   | CA    | 48   | U    |
| 7   | CA    | 56   | G    |
| 7   | CA    | 66   | A    |
| 7   | CA    | 104  | A    |
| 7   | CA    | 107  | G    |
| 8   | CB    | 27   | G    |
| 8   | CB    | 33   | C    |
| 8   | CB    | 34   | U    |
| 8   | CB    | 49   | A    |
| 8   | CB    | 60   | G    |
| 8   | CB    | 62   | U    |
| 8   | CB    | 63   | A    |
| 8   | CB    | 84   | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 99  | U    |
| 8   | CB    | 100 | U    |
| 8   | CB    | 101 | A    |
| 8   | CB    | 102 | U    |
| 8   | CB    | 124 | G    |
| 8   | CB    | 126 | A    |
| 8   | CB    | 127 | A    |
| 8   | CB    | 139 | U    |
| 8   | CB    | 141 | G    |
| 8   | CB    | 143 | C    |
| 8   | CB    | 159 | G    |
| 8   | CB    | 162 | U    |
| 8   | CB    | 177 | G    |
| 8   | CB    | 187 | G    |
| 8   | CB    | 196 | A    |
| 8   | CB    | 197 | A    |
| 8   | CB    | 198 | C    |
| 8   | CB    | 199 | A    |
| 8   | CB    | 204 | A    |
| 8   | CB    | 215 | G    |
| 8   | CB    | 222 | A    |
| 8   | CB    | 228 | C    |
| 8   | CB    | 243 | U    |
| 8   | CB    | 247 | G    |
| 8   | CB    | 250 | G    |
| 8   | CB    | 255 | A    |
| 8   | CB    | 262 | A    |
| 8   | CB    | 299 | A    |
| 8   | CB    | 301 | G    |
| 8   | CB    | 302 | C    |
| 8   | CB    | 310 | A    |
| 8   | CB    | 322 | A    |
| 8   | CB    | 329 | G    |
| 8   | CB    | 330 | A    |
| 8   | CB    | 331 | C    |
| 8   | CB    | 332 | A    |
| 8   | CB    | 333 | G    |
| 8   | CB    | 335 | C    |
| 8   | CB    | 337 | C    |
| 8   | CB    | 347 | A    |
| 8   | CB    | 353 | C    |
| 8   | CB    | 364 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 369 | U    |
| 8   | CB    | 370 | G    |
| 8   | CB    | 374 | A    |
| 8   | CB    | 375 | G    |
| 8   | CB    | 386 | G    |
| 8   | CB    | 387 | U    |
| 8   | CB    | 391 | A    |
| 8   | CB    | 394 | C    |
| 8   | CB    | 396 | G    |
| 8   | CB    | 403 | U    |
| 8   | CB    | 404 | A    |
| 8   | CB    | 408 | G    |
| 8   | CB    | 434 | U    |
| 8   | CB    | 447 | A    |
| 8   | CB    | 456 | C    |
| 8   | CB    | 458 | G    |
| 8   | CB    | 465 | G    |
| 8   | CB    | 468 | G    |
| 8   | CB    | 478 | A    |
| 8   | CB    | 479 | A    |
| 8   | CB    | 489 | G    |
| 8   | CB    | 492 | A    |
| 8   | CB    | 503 | A    |
| 8   | CB    | 504 | A    |
| 8   | CB    | 526 | A    |
| 8   | CB    | 529 | A    |
| 8   | CB    | 530 | G    |
| 8   | CB    | 531 | C    |
| 8   | CB    | 532 | A    |
| 8   | CB    | 533 | G    |
| 8   | CB    | 544 | C    |
| 8   | CB    | 546 | U    |
| 8   | CB    | 553 | G    |
| 8   | CB    | 555 | G    |
| 8   | CB    | 562 | U    |
| 8   | CB    | 568 | U    |
| 8   | CB    | 569 | U    |
| 8   | CB    | 571 | U    |
| 8   | CB    | 573 | U    |
| 8   | CB    | 575 | A    |
| 8   | CB    | 576 | U    |
| 8   | CB    | 604 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CB    | 608 | A    |
| 8   | CB    | 613 | A    |
| 8   | CB    | 614 | A    |
| 8   | CB    | 620 | G    |
| 8   | CB    | 627 | A    |
| 8   | CB    | 631 | A    |
| 8   | CB    | 655 | A    |
| 8   | CB    | 667 | U    |
| 8   | CB    | 669 | G    |
| 8   | CB    | 670 | A    |
| 8   | CB    | 672 | C    |
| 8   | CB    | 675 | A    |
| 8   | CB    | 677 | A    |
| 8   | CB    | 682 | G    |
| 8   | CB    | 683 | U    |
| 8   | CB    | 689 | A    |
| 8   | CB    | 726 | G    |
| 8   | CB    | 740 | C    |
| 8   | CB    | 761 | A    |
| 8   | CB    | 773 | U    |
| 8   | CB    | 774 | G    |
| 8   | CB    | 775 | G    |
| 8   | CB    | 776 | G    |
| 8   | CB    | 784 | G    |
| 8   | CB    | 788 | A    |
| 8   | CB    | 793 | A    |
| 8   | CB    | 795 | C    |
| 8   | CB    | 796 | C    |
| 8   | CB    | 799 | G    |
| 8   | CB    | 800 | A    |
| 8   | CB    | 801 | G    |
| 8   | CB    | 802 | A    |
| 8   | CB    | 808 | G    |
| 8   | CB    | 811 | U    |
| 8   | CB    | 827 | U    |
| 8   | CB    | 829 | A    |
| 8   | CB    | 863 | A    |
| 8   | CB    | 870 | U    |
| 8   | CB    | 871 | U    |
| 8   | CB    | 910 | A    |
| 8   | CB    | 915 | C    |
| 8   | CB    | 931 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 932  | U    |
| 8   | CB    | 933  | A    |
| 8   | CB    | 944  | C    |
| 8   | CB    | 945  | A    |
| 8   | CB    | 970  | U    |
| 8   | CB    | 975  | A    |
| 8   | CB    | 980  | A    |
| 8   | CB    | 982  | C    |
| 8   | CB    | 988  | A    |
| 8   | CB    | 990  | A    |
| 8   | CB    | 995  | C    |
| 8   | CB    | 1010 | A    |
| 8   | CB    | 1011 | G    |
| 8   | CB    | 1020 | A    |
| 8   | CB    | 1025 | G    |
| 8   | CB    | 1027 | A    |
| 8   | CB    | 1028 | A    |
| 8   | CB    | 1045 | C    |
| 8   | CB    | 1060 | U    |
| 8   | CB    | 1063 | G    |
| 8   | CB    | 1069 | A    |
| 8   | CB    | 1070 | A    |
| 8   | CB    | 1083 | U    |
| 8   | CB    | 1099 | G    |
| 8   | CB    | 1111 | A    |
| 8   | CB    | 1115 | G    |
| 8   | CB    | 1122 | G    |
| 8   | CB    | 1125 | G    |
| 8   | CB    | 1126 | A    |
| 8   | CB    | 1128 | G    |
| 8   | CB    | 1130 | U    |
| 8   | CB    | 1134 | A    |
| 8   | CB    | 1141 | U    |
| 8   | CB    | 1142 | A    |
| 8   | CB    | 1156 | A    |
| 8   | CB    | 1157 | G    |
| 8   | CB    | 1199 | U    |
| 8   | CB    | 1204 | A    |
| 8   | CB    | 1205 | A    |
| 8   | CB    | 1210 | G    |
| 8   | CB    | 1211 | C    |
| 8   | CB    | 1216 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1234 | U    |
| 8   | CB    | 1236 | G    |
| 8   | CB    | 1250 | G    |
| 8   | CB    | 1253 | A    |
| 8   | CB    | 1257 | C    |
| 8   | CB    | 1264 | A    |
| 8   | CB    | 1265 | A    |
| 8   | CB    | 1266 | G    |
| 8   | CB    | 1270 | C    |
| 8   | CB    | 1272 | A    |
| 8   | CB    | 1275 | A    |
| 8   | CB    | 1288 | G    |
| 8   | CB    | 1291 | C    |
| 8   | CB    | 1296 | G    |
| 8   | CB    | 1300 | G    |
| 8   | CB    | 1301 | A    |
| 8   | CB    | 1311 | G    |
| 8   | CB    | 1320 | C    |
| 8   | CB    | 1321 | A    |
| 8   | CB    | 1340 | U    |
| 8   | CB    | 1341 | G    |
| 8   | CB    | 1359 | A    |
| 8   | CB    | 1378 | A    |
| 8   | CB    | 1379 | U    |
| 8   | CB    | 1382 | G    |
| 8   | CB    | 1392 | A    |
| 8   | CB    | 1395 | A    |
| 8   | CB    | 1419 | A    |
| 8   | CB    | 1420 | A    |
| 8   | CB    | 1427 | A    |
| 8   | CB    | 1434 | A    |
| 8   | CB    | 1450 | G    |
| 8   | CB    | 1451 | C    |
| 8   | CB    | 1454 | C    |
| 8   | CB    | 1458 | U    |
| 8   | CB    | 1459 | G    |
| 8   | CB    | 1460 | U    |
| 8   | CB    | 1490 | A    |
| 8   | CB    | 1497 | U    |
| 8   | CB    | 1522 | A    |
| 8   | CB    | 1554 | U    |
| 8   | CB    | 1559 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1565 | C    |
| 8   | CB    | 1567 | G    |
| 8   | CB    | 1583 | A    |
| 8   | CB    | 1602 | U    |
| 8   | CB    | 1607 | C    |
| 8   | CB    | 1610 | A    |
| 8   | CB    | 1616 | A    |
| 8   | CB    | 1617 | C    |
| 8   | CB    | 1626 | A    |
| 8   | CB    | 1632 | A    |
| 8   | CB    | 1644 | C    |
| 8   | CB    | 1646 | C    |
| 8   | CB    | 1647 | U    |
| 8   | CB    | 1652 | A    |
| 8   | CB    | 1663 | G    |
| 8   | CB    | 1677 | A    |
| 8   | CB    | 1693 | U    |
| 8   | CB    | 1694 | C    |
| 8   | CB    | 1696 | G    |
| 8   | CB    | 1713 | A    |
| 8   | CB    | 1721 | G    |
| 8   | CB    | 1732 | C    |
| 8   | CB    | 1737 | G    |
| 8   | CB    | 1758 | U    |
| 8   | CB    | 1781 | U    |
| 8   | CB    | 1782 | U    |
| 8   | CB    | 1784 | A    |
| 8   | CB    | 1786 | A    |
| 8   | CB    | 1787 | A    |
| 8   | CB    | 1791 | A    |
| 8   | CB    | 1814 | G    |
| 8   | CB    | 1815 | A    |
| 8   | CB    | 1817 | G    |
| 8   | CB    | 1819 | A    |
| 8   | CB    | 1829 | A    |
| 8   | CB    | 1847 | A    |
| 8   | CB    | 1857 | G    |
| 8   | CB    | 1870 | C    |
| 8   | CB    | 1885 | A    |
| 8   | CB    | 1913 | A    |
| 8   | CB    | 1929 | G    |
| 8   | CB    | 1936 | A    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 1937 | A    |
| 8   | CB    | 1938 | A    |
| 8   | CB    | 1939 | U    |
| 8   | CB    | 1940 | U    |
| 8   | CB    | 1941 | C    |
| 8   | CB    | 1943 | U    |
| 8   | CB    | 1964 | G    |
| 8   | CB    | 1966 | A    |
| 8   | CB    | 1973 | G    |
| 8   | CB    | 1996 | C    |
| 8   | CB    | 2003 | A    |
| 8   | CB    | 2014 | A    |
| 8   | CB    | 2016 | U    |
| 8   | CB    | 2021 | C    |
| 8   | CB    | 2031 | A    |
| 8   | CB    | 2033 | A    |
| 8   | CB    | 2034 | U    |
| 8   | CB    | 2035 | G    |
| 8   | CB    | 2046 | G    |
| 8   | CB    | 2051 | A    |
| 8   | CB    | 2058 | A    |
| 8   | CB    | 2060 | A    |
| 8   | CB    | 2061 | G    |
| 8   | CB    | 2062 | A    |
| 8   | CB    | 2067 | G    |
| 8   | CB    | 2076 | U    |
| 8   | CB    | 2100 | G    |
| 8   | CB    | 2105 | U    |
| 8   | CB    | 2106 | U    |
| 8   | CB    | 2107 | G    |
| 8   | CB    | 2146 | C    |
| 8   | CB    | 2147 | A    |
| 8   | CB    | 2179 | C    |
| 8   | CB    | 2180 | U    |
| 8   | CB    | 2199 | A    |
| 8   | CB    | 2210 | U    |
| 8   | CB    | 2211 | A    |
| 8   | CB    | 2212 | A    |
| 8   | CB    | 2214 | C    |
| 8   | CB    | 2223 | G    |
| 8   | CB    | 2225 | A    |
| 8   | CB    | 2238 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2250 | G    |
| 8   | CB    | 2258 | C    |
| 8   | CB    | 2281 | A    |
| 8   | CB    | 2282 | G    |
| 8   | CB    | 2289 | G    |
| 8   | CB    | 2296 | U    |
| 8   | CB    | 2307 | G    |
| 8   | CB    | 2324 | U    |
| 8   | CB    | 2327 | A    |
| 8   | CB    | 2331 | G    |
| 8   | CB    | 2333 | A    |
| 8   | CB    | 2334 | U    |
| 8   | CB    | 2336 | A    |
| 8   | CB    | 2343 | U    |
| 8   | CB    | 2344 | U    |
| 8   | CB    | 2345 | G    |
| 8   | CB    | 2352 | A    |
| 8   | CB    | 2358 | A    |
| 8   | CB    | 2370 | G    |
| 8   | CB    | 2382 | G    |
| 8   | CB    | 2407 | A    |
| 8   | CB    | 2423 | U    |
| 8   | CB    | 2425 | A    |
| 8   | CB    | 2432 | A    |
| 8   | CB    | 2434 | A    |
| 8   | CB    | 2448 | A    |
| 8   | CB    | 2452 | C    |
| 8   | CB    | 2453 | A    |
| 8   | CB    | 2458 | G    |
| 8   | CB    | 2473 | U    |
| 8   | CB    | 2478 | A    |
| 8   | CB    | 2488 | G    |
| 8   | CB    | 2500 | U    |
| 8   | CB    | 2503 | A    |
| 8   | CB    | 2505 | G    |
| 8   | CB    | 2516 | A    |
| 8   | CB    | 2517 | C    |
| 8   | CB    | 2519 | U    |
| 8   | CB    | 2521 | C    |
| 8   | CB    | 2525 | G    |
| 8   | CB    | 2529 | G    |
| 8   | CB    | 2543 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | CB    | 2566 | A    |
| 8   | CB    | 2571 | U    |
| 8   | CB    | 2581 | G    |
| 8   | CB    | 2585 | U    |
| 8   | CB    | 2587 | A    |
| 8   | CB    | 2594 | C    |
| 8   | CB    | 2609 | U    |
| 8   | CB    | 2613 | U    |
| 8   | CB    | 2614 | A    |
| 8   | CB    | 2629 | U    |
| 8   | CB    | 2636 | C    |
| 8   | CB    | 2674 | G    |
| 8   | CB    | 2681 | C    |
| 8   | CB    | 2683 | C    |
| 8   | CB    | 2689 | U    |
| 8   | CB    | 2690 | U    |
| 8   | CB    | 2706 | A    |
| 8   | CB    | 2711 | A    |
| 8   | CB    | 2717 | C    |
| 8   | CB    | 2718 | G    |
| 8   | CB    | 2719 | G    |
| 8   | CB    | 2724 | U    |
| 8   | CB    | 2726 | A    |
| 8   | CB    | 2750 | A    |
| 8   | CB    | 2751 | G    |
| 8   | CB    | 2763 | G    |
| 8   | CB    | 2765 | A    |
| 8   | CB    | 2778 | A    |
| 8   | CB    | 2799 | A    |
| 8   | CB    | 2800 | A    |
| 8   | CB    | 2807 | U    |
| 8   | CB    | 2808 | G    |
| 8   | CB    | 2820 | A    |
| 8   | CB    | 2832 | U    |
| 8   | CB    | 2833 | U    |
| 8   | CB    | 2835 | A    |
| 8   | CB    | 2850 | A    |
| 8   | CB    | 2860 | A    |
| 8   | CB    | 2867 | G    |
| 8   | CB    | 2873 | A    |
| 8   | CB    | 2884 | U    |
| 8   | CB    | 2893 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 7   | A    |
| 33  | DA    | 13  | U    |
| 33  | DA    | 31  | G    |
| 33  | DA    | 47  | C    |
| 33  | DA    | 49  | U    |
| 33  | DA    | 51  | A    |
| 33  | DA    | 59  | A    |
| 33  | DA    | 60  | A    |
| 33  | DA    | 64  | G    |
| 33  | DA    | 71  | A    |
| 33  | DA    | 82  | G    |
| 33  | DA    | 83  | C    |
| 33  | DA    | 84  | U    |
| 33  | DA    | 85  | U    |
| 33  | DA    | 86  | G    |
| 33  | DA    | 94  | G    |
| 33  | DA    | 120 | A    |
| 33  | DA    | 128 | G    |
| 33  | DA    | 130 | A    |
| 33  | DA    | 151 | A    |
| 33  | DA    | 159 | G    |
| 33  | DA    | 165 | G    |
| 33  | DA    | 181 | A    |
| 33  | DA    | 183 | C    |
| 33  | DA    | 189 | A    |
| 33  | DA    | 197 | A    |
| 33  | DA    | 220 | G    |
| 33  | DA    | 238 | A    |
| 33  | DA    | 239 | U    |
| 33  | DA    | 240 | G    |
| 33  | DA    | 243 | A    |
| 33  | DA    | 244 | U    |
| 33  | DA    | 249 | U    |
| 33  | DA    | 251 | G    |
| 33  | DA    | 266 | G    |
| 33  | DA    | 274 | A    |
| 33  | DA    | 279 | A    |
| 33  | DA    | 281 | G    |
| 33  | DA    | 315 | A    |
| 33  | DA    | 328 | C    |
| 33  | DA    | 329 | A    |
| 33  | DA    | 339 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 345 | C    |
| 33  | DA    | 348 | G    |
| 33  | DA    | 350 | G    |
| 33  | DA    | 351 | G    |
| 33  | DA    | 353 | A    |
| 33  | DA    | 372 | C    |
| 33  | DA    | 373 | A    |
| 33  | DA    | 381 | C    |
| 33  | DA    | 383 | A    |
| 33  | DA    | 388 | G    |
| 33  | DA    | 407 | U    |
| 33  | DA    | 412 | A    |
| 33  | DA    | 421 | U    |
| 33  | DA    | 422 | C    |
| 33  | DA    | 428 | G    |
| 33  | DA    | 438 | U    |
| 33  | DA    | 461 | A    |
| 33  | DA    | 462 | G    |
| 33  | DA    | 463 | U    |
| 33  | DA    | 467 | U    |
| 33  | DA    | 481 | G    |
| 33  | DA    | 484 | G    |
| 33  | DA    | 485 | U    |
| 33  | DA    | 489 | C    |
| 33  | DA    | 495 | A    |
| 33  | DA    | 499 | A    |
| 33  | DA    | 508 | U    |
| 33  | DA    | 517 | G    |
| 33  | DA    | 528 | C    |
| 33  | DA    | 530 | G    |
| 33  | DA    | 532 | A    |
| 33  | DA    | 536 | C    |
| 33  | DA    | 547 | A    |
| 33  | DA    | 548 | G    |
| 33  | DA    | 556 | C    |
| 33  | DA    | 560 | A    |
| 33  | DA    | 561 | U    |
| 33  | DA    | 562 | U    |
| 33  | DA    | 566 | G    |
| 33  | DA    | 575 | G    |
| 33  | DA    | 576 | C    |
| 33  | DA    | 585 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33  | DA    | 588 | G    |
| 33  | DA    | 591 | U    |
| 33  | DA    | 595 | A    |
| 33  | DA    | 609 | A    |
| 33  | DA    | 642 | A    |
| 33  | DA    | 653 | U    |
| 33  | DA    | 690 | G    |
| 33  | DA    | 701 | U    |
| 33  | DA    | 702 | A    |
| 33  | DA    | 717 | U    |
| 33  | DA    | 720 | C    |
| 33  | DA    | 721 | G    |
| 33  | DA    | 722 | G    |
| 33  | DA    | 725 | G    |
| 33  | DA    | 734 | G    |
| 33  | DA    | 739 | C    |
| 33  | DA    | 742 | G    |
| 33  | DA    | 748 | G    |
| 33  | DA    | 754 | C    |
| 33  | DA    | 765 | G    |
| 33  | DA    | 767 | A    |
| 33  | DA    | 770 | C    |
| 33  | DA    | 774 | G    |
| 33  | DA    | 777 | A    |
| 33  | DA    | 778 | G    |
| 33  | DA    | 786 | G    |
| 33  | DA    | 793 | U    |
| 33  | DA    | 801 | U    |
| 33  | DA    | 803 | G    |
| 33  | DA    | 806 | C    |
| 33  | DA    | 812 | G    |
| 33  | DA    | 813 | U    |
| 33  | DA    | 815 | A    |
| 33  | DA    | 818 | G    |
| 33  | DA    | 820 | U    |
| 33  | DA    | 841 | C    |
| 33  | DA    | 846 | G    |
| 33  | DA    | 849 | G    |
| 33  | DA    | 870 | U    |
| 33  | DA    | 873 | A    |
| 33  | DA    | 884 | U    |
| 33  | DA    | 886 | G    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 893  | C    |
| 33  | DA    | 901  | A    |
| 33  | DA    | 905  | U    |
| 33  | DA    | 913  | A    |
| 33  | DA    | 934  | C    |
| 33  | DA    | 935  | A    |
| 33  | DA    | 960  | U    |
| 33  | DA    | 965  | U    |
| 33  | DA    | 968  | A    |
| 33  | DA    | 971  | G    |
| 33  | DA    | 974  | A    |
| 33  | DA    | 975  | A    |
| 33  | DA    | 982  | U    |
| 33  | DA    | 983  | A    |
| 33  | DA    | 993  | G    |
| 33  | DA    | 1006 | G    |
| 33  | DA    | 1014 | A    |
| 33  | DA    | 1018 | G    |
| 33  | DA    | 1022 | A    |
| 33  | DA    | 1025 | U    |
| 33  | DA    | 1030 | U    |
| 33  | DA    | 1049 | U    |
| 33  | DA    | 1053 | G    |
| 33  | DA    | 1064 | G    |
| 33  | DA    | 1065 | U    |
| 33  | DA    | 1067 | A    |
| 33  | DA    | 1068 | G    |
| 33  | DA    | 1106 | G    |
| 33  | DA    | 1107 | C    |
| 33  | DA    | 1115 | U    |
| 33  | DA    | 1139 | G    |
| 33  | DA    | 1145 | A    |
| 33  | DA    | 1151 | A    |
| 33  | DA    | 1157 | A    |
| 33  | DA    | 1160 | G    |
| 33  | DA    | 1171 | A    |
| 33  | DA    | 1181 | G    |
| 33  | DA    | 1183 | U    |
| 33  | DA    | 1201 | A    |
| 33  | DA    | 1206 | G    |
| 33  | DA    | 1224 | U    |
| 33  | DA    | 1226 | C    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1227 | A    |
| 33  | DA    | 1235 | U    |
| 33  | DA    | 1238 | A    |
| 33  | DA    | 1239 | A    |
| 33  | DA    | 1240 | U    |
| 33  | DA    | 1248 | A    |
| 33  | DA    | 1250 | A    |
| 33  | DA    | 1257 | A    |
| 33  | DA    | 1279 | G    |
| 33  | DA    | 1280 | A    |
| 33  | DA    | 1281 | C    |
| 33  | DA    | 1297 | G    |
| 33  | DA    | 1301 | U    |
| 33  | DA    | 1302 | C    |
| 33  | DA    | 1305 | G    |
| 33  | DA    | 1319 | A    |
| 33  | DA    | 1336 | C    |
| 33  | DA    | 1346 | A    |
| 33  | DA    | 1347 | G    |
| 33  | DA    | 1357 | A    |
| 33  | DA    | 1363 | A    |
| 33  | DA    | 1367 | C    |
| 33  | DA    | 1380 | U    |
| 33  | DA    | 1390 | U    |
| 33  | DA    | 1394 | A    |
| 33  | DA    | 1397 | C    |
| 33  | DA    | 1422 | G    |
| 33  | DA    | 1424 | U    |
| 33  | DA    | 1427 | C    |
| 33  | DA    | 1432 | G    |
| 33  | DA    | 1436 | U    |
| 33  | DA    | 1447 | A    |
| 33  | DA    | 1451 | U    |
| 33  | DA    | 1461 | G    |
| 33  | DA    | 1475 | G    |
| 33  | DA    | 1480 | A    |
| 33  | DA    | 1498 | U    |
| 33  | DA    | 1502 | A    |
| 33  | DA    | 1503 | A    |
| 33  | DA    | 1504 | G    |
| 33  | DA    | 1506 | U    |
| 33  | DA    | 1528 | U    |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 33  | DA    | 1529 | G    |

## 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 343 ligands modelled in this entry, 343 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 33  | BA    | 1                |
| 15  | CI    | 1                |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1     | BA    | 1045:C    | O3'    | 1046:A    | P      | 4.69         |

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| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1     | CI    | 72:THR    | C      | 73:PRO    | N      | 4.33         |

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 1   | A0    | 56/56 (100%)    | 0.32   | 6 (10%) 6 5   | 109, 149, 271, 317    | 0     |
| 1   | C0    | 56/56 (100%)    | 0.27   | 6 (10%) 6 5   | 97, 120, 190, 244     | 0     |
| 2   | A1    | 54/54 (100%)    | 0.84   | 10 (18%) 1 1  | 124, 143, 239, 296    | 0     |
| 2   | C1    | 54/54 (100%)    | 1.06   | 10 (18%) 1 1  | 92, 113, 223, 254     | 0     |
| 3   | A2    | 46/46 (100%)    | 0.40   | 3 (6%) 18 14  | 74, 92, 165, 271      | 0     |
| 3   | C2    | 46/46 (100%)    | 0.03   | 4 (8%) 10 8   | 68, 103, 198, 264     | 0     |
| 4   | A3    | 64/64 (100%)    | 0.05   | 5 (7%) 13 11  | 80, 106, 228, 309     | 0     |
| 4   | C3    | 64/64 (100%)    | -0.10  | 2 (3%) 49 40  | 69, 99, 174, 229      | 0     |
| 5   | A4    | 38/38 (100%)    | 1.03   | 9 (23%) 0 0   | 115, 135, 250, 284    | 0     |
| 5   | C4    | 38/38 (100%)    | 0.87   | 7 (18%) 1 1   | 124, 144, 238, 298    | 0     |
| 6   | A5    | 16/16 (100%)    | -0.34  | 0 100 100     | 73, 108, 197, 216     | 0     |
| 7   | AA    | 117/120 (97%)   | -0.60  | 0 100 100     | 78, 127, 174, 316     | 0     |
| 7   | CA    | 117/120 (97%)   | -0.65  | 1 (0%) 84 81  | 71, 126, 170, 285     | 0     |
| 8   | AB    | 2841/2904 (97%) | -0.46  | 34 (1%) 79 74 | 57, 105, 213, 373     | 0     |
| 8   | CB    | 2841/2904 (97%) | -0.63  | 11 (0%) 92 91 | 41, 89, 202, 421      | 0     |
| 9   | AC    | 268/273 (98%)   | 0.05   | 14 (5%) 27 24 | 71, 107, 196, 257     | 0     |
| 9   | CC    | 268/273 (98%)   | -0.09  | 11 (4%) 37 31 | 63, 91, 165, 248      | 0     |
| 10  | AD    | 209/209 (100%)  | 0.18   | 9 (4%) 35 30  | 12, 127, 226, 325     | 0     |
| 10  | CD    | 209/209 (100%)  | -0.06  | 9 (4%) 35 30  | 11, 94, 186, 271      | 0     |
| 11  | AE    | 201/201 (100%)  | 0.14   | 11 (5%) 25 21 | 92, 120, 206, 299     | 0     |
| 11  | CE    | 201/201 (100%)  | 0.28   | 22 (10%) 5 5  | 88, 117, 224, 290     | 0     |
| 12  | AF    | 178/178 (100%)  | 0.25   | 12 (6%) 17 14 | 121, 170, 253, 334    | 0     |
| 12  | CF    | 178/178 (100%)  | 0.18   | 6 (3%) 45 38  | 92, 155, 224, 286     | 0     |
| 13  | AG    | 176/176 (100%)  | 0.07   | 15 (8%) 10 9  | 100, 137, 207, 246    | 0     |

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| Mol | Chain | Analysed       | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|----------------|--------|---------------|-----------------------|-------|
| 13  | CG    | 176/176 (100%) | 0.43   | 22 (12%) 3 4  | 88, 138, 222, 271     | 0     |
| 14  | AH    | 149/149 (100%) | 1.68   | 52 (34%) 0 0  | 71, 314, 427, 456     | 0     |
| 14  | CH    | 149/149 (100%) | 0.44   | 11 (7%) 14 12 | 107, 147, 233, 274    | 0     |
| 15  | AI    | 141/141 (100%) | 1.86   | 47 (33%) 0 0  | 155, 233, 307, 356    | 0     |
| 15  | CI    | 141/141 (100%) | 2.99   | 64 (45%) 0 0  | 219, 343, 422, 470    | 0     |
| 16  | AJ    | 141/142 (99%)  | 0.06   | 6 (4%) 35 30  | 105, 130, 217, 267    | 0     |
| 16  | CJ    | 141/142 (99%)  | 0.16   | 5 (3%) 44 37  | 104, 121, 207, 250    | 0     |
| 17  | AK    | 122/123 (99%)  | -0.18  | 1 (0%) 86 83  | 81, 109, 162, 234     | 0     |
| 17  | CK    | 122/123 (99%)  | -0.45  | 0 100 100     | 80, 94, 127, 208      | 0     |
| 18  | AL    | 144/144 (100%) | 1.07   | 21 (14%) 2 3  | 94, 138, 281, 363     | 0     |
| 18  | CL    | 144/144 (100%) | 0.63   | 23 (15%) 1 2  | 83, 128, 275, 315     | 0     |
| 19  | AM    | 136/136 (100%) | 0.06   | 12 (8%) 10 8  | 105, 126, 222, 268    | 0     |
| 19  | CM    | 136/136 (100%) | -0.01  | 7 (5%) 28 24  | 77, 108, 223, 279     | 0     |
| 20  | AN    | 127/127 (100%) | 0.01   | 5 (3%) 39 33  | 96, 114, 200, 251     | 0     |
| 20  | CN    | 127/127 (100%) | -0.13  | 6 (4%) 31 27  | 58, 78, 155, 257      | 0     |
| 21  | AO    | 117/117 (100%) | 0.21   | 7 (5%) 21 17  | 107, 162, 236, 299    | 0     |
| 21  | CO    | 117/117 (100%) | 0.39   | 14 (11%) 4 4  | 52, 118, 211, 255     | 0     |
| 22  | AP    | 114/114 (100%) | -0.10  | 2 (1%) 68 63  | 85, 123, 219, 281     | 0     |
| 22  | CP    | 114/114 (100%) | -0.24  | 1 (0%) 84 81  | 77, 96, 196, 257      | 0     |
| 23  | AQ    | 117/117 (100%) | -0.30  | 0 100 100     | 70, 106, 152, 203     | 0     |
| 23  | CQ    | 117/117 (100%) | -0.36  | 1 (0%) 84 81  | 70, 93, 148, 225      | 0     |
| 24  | AR    | 103/103 (100%) | 0.34   | 3 (2%) 51 43  | 105, 145, 250, 346    | 0     |
| 24  | CR    | 103/103 (100%) | 0.30   | 9 (8%) 10 8   | 87, 132, 229, 286     | 0     |
| 25  | AS    | 110/110 (100%) | 0.10   | 3 (2%) 54 46  | 77, 106, 167, 279     | 0     |
| 25  | CS    | 110/110 (100%) | -0.09  | 3 (2%) 54 46  | 49, 85, 152, 211      | 0     |
| 26  | AT    | 100/100 (100%) | 0.04   | 4 (4%) 38 32  | 94, 130, 222, 250     | 0     |
| 26  | CT    | 100/100 (100%) | 0.39   | 8 (8%) 12 10  | 85, 120, 248, 278     | 0     |
| 27  | AU    | 103/103 (100%) | 1.05   | 23 (22%) 0 0  | 90, 140, 235, 264     | 0     |
| 27  | CU    | 103/103 (100%) | 0.92   | 23 (22%) 0 0  | 118, 162, 256, 281    | 0     |
| 28  | AV    | 94/94 (100%)   | -0.24  | 3 (3%) 47 39  | 86, 136, 209, 234     | 0     |
| 28  | CV    | 94/94 (100%)   | -0.20  | 3 (3%) 47 39  | 87, 124, 194, 215     | 0     |

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| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 29  | AW    | 84/84 (100%)    | 1.16   | 16 (19%) 1 1  | 116, 147, 244, 330    | 0     |
| 29  | CW    | 84/84 (100%)    | 0.69   | 12 (14%) 2 3  | 111, 136, 238, 275    | 0     |
| 30  | AX    | 63/63 (100%)    | -0.18  | 2 (3%) 47 39  | 84, 130, 208, 247     | 0     |
| 30  | CX    | 63/63 (100%)    | 0.36   | 10 (15%) 1 2  | 86, 150, 233, 320     | 0     |
| 31  | AY    | 58/58 (100%)    | 1.53   | 16 (27%) 0 0  | 116, 143, 272, 279    | 0     |
| 31  | CY    | 58/58 (100%)    | 1.02   | 8 (13%) 2 3   | 126, 138, 240, 249    | 0     |
| 32  | AZ    | 70/70 (100%)    | 0.17   | 5 (7%) 16 12  | 66, 104, 170, 258     | 0     |
| 32  | CZ    | 70/70 (100%)    | 0.03   | 4 (5%) 23 19  | 70, 91, 169, 255      | 0     |
| 33  | BA    | 1530/1542 (99%) | -0.36  | 19 (1%) 79 74 | 70, 137, 279, 497     | 0     |
| 33  | DA    | 1530/1542 (99%) | -0.55  | 10 (0%) 87 85 | 45, 111, 224, 368     | 0     |
| 34  | BB    | 219/240 (91%)   | 0.01   | 9 (4%) 37 31  | 94, 175, 269, 316     | 0     |
| 34  | DB    | 219/240 (91%)   | 0.17   | 15 (6%) 17 13 | 108, 159, 243, 292    | 0     |
| 35  | BC    | 207/232 (89%)   | 0.17   | 18 (8%) 10 8  | 87, 169, 255, 315     | 0     |
| 35  | DC    | 207/232 (89%)   | -0.03  | 12 (5%) 23 19 | 113, 140, 207, 226    | 0     |
| 36  | BD    | 205/205 (100%)  | -0.25  | 1 (0%) 91 89  | 61, 139, 230, 325     | 0     |
| 36  | DD    | 205/205 (100%)  | -0.27  | 2 (0%) 82 78  | 71, 102, 169, 227     | 0     |
| 37  | BE    | 151/166 (90%)   | 0.28   | 14 (9%) 8 7   | 75, 156, 254, 336     | 0     |
| 37  | DE    | 151/166 (90%)   | -0.07  | 5 (3%) 46 39  | 56, 99, 174, 250      | 0     |
| 38  | BF    | 101/135 (74%)   | -0.05  | 6 (5%) 22 18  | 57, 140, 224, 279     | 0     |
| 38  | DF    | 101/135 (74%)   | -0.04  | 3 (2%) 50 41  | 110, 137, 200, 247    | 0     |
| 39  | BG    | 151/178 (84%)   | 0.65   | 21 (13%) 2 3  | 94, 206, 288, 333     | 0     |
| 39  | DG    | 153/178 (85%)   | 0.09   | 4 (2%) 56 48  | 44, 144, 206, 228     | 0     |
| 40  | BH    | 129/129 (100%)  | 0.26   | 8 (6%) 20 16  | 76, 157, 231, 297     | 0     |
| 40  | DH    | 129/129 (100%)  | -0.27  | 2 (1%) 72 66  | 70, 98, 166, 216      | 0     |
| 41  | BI    | 127/129 (98%)   | 0.86   | 25 (19%) 1 1  | 90, 194, 271, 307     | 0     |
| 41  | DI    | 127/129 (98%)   | 0.34   | 8 (6%) 20 15  | 103, 165, 231, 281    | 0     |
| 42  | BJ    | 99/103 (96%)    | 1.83   | 39 (39%) 0 0  | 131, 254, 373, 423    | 0     |
| 42  | DJ    | 99/103 (96%)    | 0.52   | 12 (12%) 4 4  | 130, 173, 223, 237    | 0     |
| 43  | BK    | 117/128 (91%)   | -0.10  | 3 (2%) 56 48  | 54, 128, 245, 290     | 0     |
| 43  | DK    | 117/128 (91%)   | -0.08  | 2 (1%) 70 64  | 69, 100, 165, 222     | 0     |
| 44  | BL    | 123/123 (100%)  | -0.05  | 4 (3%) 46 39  | 50, 138, 215, 332     | 0     |

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| Mol | Chain | Analysed          | <RSRZ> | #RSRZ>2         | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-------------------|--------|-----------------|-----------------------|-------|
| 44  | DL    | 123/123 (100%)    | -0.27  | 2 (1%) 72 66    | 64, 95, 150, 211      | 0     |
| 45  | BM    | 115/117 (98%)     | 1.35   | 32 (27%) 0 0    | 144, 252, 315, 344    | 0     |
| 45  | DM    | 114/117 (97%)     | 0.55   | 12 (10%) 6 5    | 113, 171, 221, 288    | 0     |
| 46  | BN    | 96/100 (96%)      | 0.53   | 11 (11%) 4 5    | 85, 188, 308, 367     | 0     |
| 46  | DN    | 96/100 (96%)      | 0.50   | 15 (15%) 2 2    | 105, 153, 250, 295    | 0     |
| 47  | BO    | 88/89 (98%)       | -0.12  | 1 (1%) 80 76    | 67, 133, 213, 255     | 0     |
| 47  | DO    | 88/89 (98%)       | -0.42  | 0 100 100       | 73, 105, 170, 201     | 0     |
| 48  | BP    | 82/82 (100%)      | 0.98   | 15 (18%) 1 1    | 90, 168, 269, 347     | 0     |
| 48  | DP    | 81/82 (98%)       | 0.48   | 8 (9%) 7 6      | 69, 93, 145, 202      | 0     |
| 49  | BQ    | 81/83 (97%)       | 0.63   | 7 (8%) 10 9     | 101, 180, 266, 301    | 0     |
| 49  | DQ    | 81/83 (97%)       | -0.07  | 0 100 100       | 65, 109, 172, 212     | 0     |
| 50  | BR    | 56/74 (75%)       | -0.19  | 1 (1%) 68 63    | 66, 117, 216, 283     | 0     |
| 50  | DR    | 56/74 (75%)       | 0.43   | 1 (1%) 68 63    | 74, 103, 172, 253     | 0     |
| 51  | BS    | 80/91 (87%)       | 1.75   | 30 (37%) 0 0    | 152, 267, 315, 366    | 0     |
| 51  | DS    | 81/91 (89%)       | 0.85   | 16 (19%) 1 1    | 122, 182, 230, 249    | 0     |
| 52  | BT    | 85/86 (98%)       | -0.11  | 0 100 100       | 76, 155, 224, 256     | 0     |
| 52  | DT    | 85/86 (98%)       | 0.14   | 4 (4%) 31 27    | 79, 97, 185, 219      | 0     |
| 53  | BU    | 52/71 (73%)       | 0.06   | 4 (7%) 13 11    | 91, 171, 256, 300     | 0     |
| 53  | DU    | 52/71 (73%)       | -0.41  | 0 100 100       | 95, 140, 201, 249     | 0     |
| All | All   | 20487/21050 (97%) | -0.07  | 1080 (5%) 26 23 | 11, 121, 254, 497     | 0     |

All (1080) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 15  | CI    | 98  | GLY  | 29.4 |
| 15  | CI    | 83  | ALA  | 21.7 |
| 15  | CI    | 137 | LEU  | 18.5 |
| 15  | AI    | 70  | THR  | 16.5 |
| 18  | AL    | 98  | ALA  | 16.4 |
| 14  | AH    | 98  | ASP  | 14.9 |
| 15  | CI    | 84  | GLY  | 14.7 |
| 14  | AH    | 102 | ALA  | 13.4 |
| 14  | AH    | 117 | LEU  | 13.4 |
| 15  | CI    | 115 | ASP  | 13.3 |
| 15  | AI    | 2   | LYS  | 12.7 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 42  | BJ    | 36  | VAL  | 12.5 |
| 9   | CC    | 5   | CYS  | 12.3 |
| 9   | AC    | 5   | CYS  | 12.2 |
| 15  | CI    | 114 | ALA  | 12.1 |
| 31  | AY    | 3   | THR  | 11.7 |
| 18  | AL    | 99  | ASN  | 11.5 |
| 18  | AL    | 9   | ALA  | 11.3 |
| 18  | AL    | 1   | MET  | 11.1 |
| 18  | AL    | 97  | ALA  | 10.7 |
| 29  | AW    | 4   | LYS  | 10.7 |
| 51  | BS    | 58  | PRO  | 10.7 |
| 15  | CI    | 82  | ALA  | 10.6 |
| 42  | BJ    | 37  | ARG  | 10.3 |
| 21  | CO    | 59  | ALA  | 10.2 |
| 14  | AH    | 101 | ASP  | 10.1 |
| 14  | AH    | 131 | SER  | 10.0 |
| 19  | CM    | 134 | THR  | 9.9  |
| 20  | CN    | 125 | ALA  | 9.8  |
| 27  | CU    | 61  | GLU  | 9.6  |
| 31  | CY    | 1   | ALA  | 9.5  |
| 13  | CG    | 42  | VAL  | 9.4  |
| 15  | CI    | 99  | LYS  | 9.4  |
| 15  | AI    | 1   | ALA  | 9.3  |
| 18  | CL    | 11  | GLY  | 9.3  |
| 15  | AI    | 7   | TYR  | 9.2  |
| 14  | AH    | 94  | ILE  | 9.1  |
| 15  | CI    | 136 | GLY  | 9.1  |
| 15  | AI    | 10  | LEU  | 8.7  |
| 29  | AW    | 1   | ALA  | 8.7  |
| 18  | AL    | 8   | PRO  | 8.6  |
| 18  | AL    | 2   | ARG  | 8.4  |
| 14  | AH    | 115 | VAL  | 8.2  |
| 9   | CC    | 7   | PRO  | 8.2  |
| 11  | CE    | 171 | ASP  | 8.2  |
| 21  | AO    | 59  | ALA  | 8.1  |
| 37  | DE    | 159 | SER  | 8.1  |
| 15  | CI    | 93  | ASN  | 8.0  |
| 15  | AI    | 8   | VAL  | 8.0  |
| 2   | C1    | 3   | GLY  | 7.9  |
| 14  | AH    | 130 | VAL  | 7.8  |
| 50  | DR    | 19  | GLU  | 7.8  |
| 46  | BN    | 51  | PRO  | 7.5  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 18  | AL    | 10  | GLU  | 7.4  |
| 23  | CQ    | 117 | ALA  | 7.4  |
| 9   | CC    | 6   | LYS  | 7.4  |
| 49  | BQ    | 83  | LEU  | 7.4  |
| 29  | AW    | 2   | HIS  | 7.3  |
| 15  | CI    | 92  | PRO  | 7.3  |
| 20  | CN    | 126 | ALA  | 7.3  |
| 34  | DB    | 205 | ALA  | 7.3  |
| 13  | CG    | 2   | ARG  | 7.3  |
| 51  | BS    | 73  | PHE  | 7.2  |
| 18  | AL    | 7   | SER  | 7.2  |
| 15  | AI    | 53  | PRO  | 7.2  |
| 41  | BI    | 8   | THR  | 7.1  |
| 51  | BS    | 59  | VAL  | 7.1  |
| 18  | AL    | 3   | LEU  | 7.1  |
| 18  | CL    | 12  | SER  | 7.1  |
| 13  | CG    | 1   | SER  | 7.1  |
| 15  | AI    | 58  | ILE  | 7.1  |
| 42  | BJ    | 35  | GLN  | 7.0  |
| 15  | CI    | 5   | GLN  | 7.0  |
| 11  | AE    | 4   | VAL  | 7.0  |
| 31  | CY    | 58  | GLU  | 6.9  |
| 41  | BI    | 65  | THR  | 6.9  |
| 42  | BJ    | 38  | GLY  | 6.9  |
| 51  | DS    | 78  | THR  | 6.9  |
| 15  | CI    | 113 | ALA  | 6.9  |
| 42  | BJ    | 101 | SER  | 6.9  |
| 39  | BG    | 111 | GLY  | 6.8  |
| 41  | BI    | 16  | ALA  | 6.8  |
| 1   | A0    | 51  | ARG  | 6.8  |
| 15  | CI    | 79  | LEU  | 6.8  |
| 45  | BM    | 100 | ARG  | 6.7  |
| 15  | CI    | 4   | VAL  | 6.7  |
| 18  | AL    | 11  | GLY  | 6.6  |
| 27  | AU    | 41  | VAL  | 6.6  |
| 31  | CY    | 2   | LYS  | 6.6  |
| 15  | AI    | 54  | ILE  | 6.5  |
| 18  | CL    | 6   | LEU  | 6.5  |
| 51  | DS    | 10  | ILE  | 6.4  |
| 15  | AI    | 6   | ALA  | 6.4  |
| 45  | BM    | 101 | THR  | 6.4  |
| 10  | CD    | 92  | VAL  | 6.4  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 15  | CI    | 11   | GLN  | 6.4  |
| 26  | AT    | 5    | GLU  | 6.4  |
| 21  | CO    | 58   | ILE  | 6.3  |
| 15  | CI    | 70   | THR  | 6.3  |
| 15  | AI    | 76   | ALA  | 6.3  |
| 15  | CI    | 52   | LEU  | 6.2  |
| 11  | CE    | 201  | ALA  | 6.2  |
| 21  | AO    | 60   | GLU  | 6.2  |
| 15  | AI    | 59   | THR  | 6.1  |
| 2   | C1    | 54   | LYS  | 6.0  |
| 18  | AL    | 4    | ASN  | 6.0  |
| 15  | CI    | 73   | PRO  | 6.0  |
| 48  | BP    | 43   | ALA  | 6.0  |
| 48  | BP    | 44   | SER  | 6.0  |
| 18  | CL    | 5    | THR  | 5.9  |
| 27  | AU    | 88   | ASP  | 5.9  |
| 29  | AW    | 83   | ALA  | 5.9  |
| 51  | BS    | 14   | LEU  | 5.8  |
| 20  | CN    | 127  | GLU  | 5.8  |
| 12  | CF    | 42   | ALA  | 5.8  |
| 15  | CI    | 78   | LEU  | 5.8  |
| 2   | C1    | 2    | LYS  | 5.8  |
| 18  | AL    | 28   | GLY  | 5.8  |
| 41  | DI    | 129  | ARG  | 5.8  |
| 42  | DJ    | 36   | VAL  | 5.8  |
| 30  | CX    | 35   | GLY  | 5.7  |
| 14  | AH    | 93   | SER  | 5.6  |
| 45  | BM    | 104  | ASN  | 5.6  |
| 14  | AH    | 133  | GLN  | 5.6  |
| 2   | A1    | 54   | LYS  | 5.6  |
| 27  | AU    | 56   | GLY  | 5.6  |
| 45  | BM    | 115  | ILE  | 5.6  |
| 42  | BJ    | 41   | PRO  | 5.6  |
| 21  | CO    | 22   | GLY  | 5.5  |
| 27  | AU    | 59   | GLU  | 5.5  |
| 9   | CC    | 8    | THR  | 5.4  |
| 18  | CL    | 1    | MET  | 5.4  |
| 18  | CL    | 4    | ASN  | 5.3  |
| 8   | CB    | 2147 | A    | 5.3  |
| 15  | AI    | 56   | VAL  | 5.3  |
| 14  | AH    | 97   | ARG  | 5.3  |
| 40  | BH    | 110  | MET  | 5.3  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 27  | AU    | 58   | VAL  | 5.3  |
| 13  | CG    | 43   | LYS  | 5.3  |
| 33  | BA    | 1533 | C    | 5.3  |
| 29  | AW    | 84   | GLU  | 5.3  |
| 14  | AH    | 103  | VAL  | 5.3  |
| 41  | DI    | 128  | LYS  | 5.3  |
| 15  | CI    | 75   | ALA  | 5.3  |
| 13  | CG    | 56   | GLY  | 5.3  |
| 28  | CV    | 74   | ALA  | 5.3  |
| 27  | AU    | 80   | ASP  | 5.3  |
| 35  | DC    | 206  | ILE  | 5.2  |
| 8   | AB    | 2145 | C    | 5.2  |
| 51  | BS    | 74   | ALA  | 5.2  |
| 14  | AH    | 122  | LEU  | 5.2  |
| 29  | AW    | 78   | PHE  | 5.2  |
| 15  | CI    | 72   | THR  | 5.2  |
| 39  | BG    | 5    | VAL  | 5.2  |
| 41  | BI    | 9    | GLY  | 5.2  |
| 51  | BS    | 11   | ASP  | 5.1  |
| 42  | BJ    | 74   | VAL  | 5.1  |
| 11  | CE    | 3    | LEU  | 5.1  |
| 45  | BM    | 90   | HIS  | 5.0  |
| 29  | AW    | 77   | LYS  | 5.0  |
| 15  | CI    | 85   | ILE  | 5.0  |
| 19  | AM    | 136  | MET  | 5.0  |
| 27  | CU    | 2    | ALA  | 5.0  |
| 15  | CI    | 53   | PRO  | 5.0  |
| 51  | BS    | 75   | PRO  | 5.0  |
| 34  | BB    | 129  | THR  | 5.0  |
| 13  | CG    | 44   | HIS  | 4.9  |
| 34  | BB    | 128  | LEU  | 4.9  |
| 10  | CD    | 74   | GLU  | 4.9  |
| 41  | BI    | 66   | VAL  | 4.9  |
| 45  | BM    | 109  | LYS  | 4.9  |
| 18  | CL    | 7    | SER  | 4.9  |
| 14  | AH    | 80   | ILE  | 4.9  |
| 8   | AB    | 1175 | A    | 4.9  |
| 24  | CR    | 44   | GLY  | 4.9  |
| 14  | AH    | 95   | GLY  | 4.8  |
| 15  | CI    | 80   | LYS  | 4.8  |
| 42  | DJ    | 34   | ALA  | 4.8  |
| 1   | C0    | 43   | THR  | 4.8  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 31  | AY    | 2    | LYS  | 4.8  |
| 20  | CN    | 124  | ALA  | 4.8  |
| 29  | AW    | 5    | ALA  | 4.8  |
| 42  | BJ    | 27   | GLU  | 4.8  |
| 49  | BQ    | 6    | THR  | 4.8  |
| 8   | AB    | 139  | U    | 4.8  |
| 5   | A4    | 23   | ILE  | 4.8  |
| 14  | AH    | 116  | ARG  | 4.8  |
| 15  | CI    | 141  | ASP  | 4.7  |
| 51  | BS    | 48   | ILE  | 4.7  |
| 19  | CM    | 133  | LYS  | 4.7  |
| 15  | AI    | 26   | ALA  | 4.7  |
| 11  | CE    | 144  | GLU  | 4.7  |
| 8   | AB    | 2799 | A    | 4.7  |
| 48  | DP    | 9    | HIS  | 4.7  |
| 21  | CO    | 60   | GLU  | 4.7  |
| 21  | CO    | 64   | TYR  | 4.7  |
| 51  | BS    | 13   | HIS  | 4.7  |
| 15  | CI    | 111  | THR  | 4.7  |
| 5   | A4    | 22   | VAL  | 4.6  |
| 24  | AR    | 43   | ASN  | 4.6  |
| 2   | C1    | 1    | ALA  | 4.6  |
| 14  | CH    | 122  | LEU  | 4.6  |
| 45  | BM    | 106  | ARG  | 4.6  |
| 41  | DI    | 16   | ALA  | 4.6  |
| 39  | BG    | 79   | VAL  | 4.6  |
| 13  | AG    | 58   | ALA  | 4.6  |
| 38  | BF    | 37   | HIS  | 4.6  |
| 31  | CY    | 3    | THR  | 4.6  |
| 14  | AH    | 129  | GLU  | 4.5  |
| 11  | AE    | 5    | LEU  | 4.5  |
| 13  | AG    | 172  | GLU  | 4.5  |
| 29  | AW    | 3    | LYS  | 4.5  |
| 51  | BS    | 60   | PHE  | 4.5  |
| 33  | BA    | 1534 | A    | 4.5  |
| 27  | CU    | 60   | LYS  | 4.5  |
| 11  | AE    | 42   | GLY  | 4.5  |
| 15  | CI    | 81   | LYS  | 4.5  |
| 14  | CH    | 94   | ILE  | 4.5  |
| 5   | C4    | 31   | PRO  | 4.5  |
| 43  | BK    | 18   | GLY  | 4.4  |
| 11  | CE    | 142  | ALA  | 4.4  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 14  | AH    | 111 | ALA  | 4.4  |
| 15  | CI    | 121 | ILE  | 4.4  |
| 21  | CO    | 65  | THR  | 4.4  |
| 2   | C1    | 4   | ILE  | 4.4  |
| 15  | CI    | 131 | THR  | 4.4  |
| 15  | CI    | 69  | VAL  | 4.4  |
| 27  | AU    | 40  | LEU  | 4.4  |
| 18  | AL    | 5   | THR  | 4.4  |
| 31  | AY    | 23  | LEU  | 4.4  |
| 9   | AC    | 4   | LYS  | 4.3  |
| 26  | CT    | 71  | GLY  | 4.3  |
| 15  | CI    | 76  | ALA  | 4.3  |
| 15  | AI    | 25  | PRO  | 4.3  |
| 15  | AI    | 11  | GLN  | 4.3  |
| 15  | CI    | 106 | GLN  | 4.3  |
| 15  | CI    | 116 | MET  | 4.3  |
| 45  | DM    | 42  | VAL  | 4.3  |
| 8   | AB    | 546 | U    | 4.3  |
| 46  | BN    | 25  | GLU  | 4.3  |
| 12  | CF    | 43  | ILE  | 4.3  |
| 9   | CC    | 4   | LYS  | 4.3  |
| 42  | BJ    | 28  | THR  | 4.3  |
| 13  | CG    | 41  | GLU  | 4.3  |
| 27  | CU    | 62  | ALA  | 4.3  |
| 48  | DP    | 38  | PHE  | 4.3  |
| 42  | DJ    | 103 | GLY  | 4.2  |
| 19  | AM    | 1   | MET  | 4.2  |
| 15  | AI    | 71  | LYS  | 4.2  |
| 42  | BJ    | 72  | ARG  | 4.2  |
| 42  | BJ    | 75  | ASP  | 4.2  |
| 15  | CI    | 1   | ALA  | 4.2  |
| 27  | CU    | 102 | ILE  | 4.2  |
| 19  | CM    | 132 | THR  | 4.2  |
| 14  | AH    | 85  | GLY  | 4.2  |
| 41  | BI    | 127 | SER  | 4.2  |
| 51  | BS    | 57  | VAL  | 4.2  |
| 36  | BD    | 22  | SER  | 4.2  |
| 39  | BG    | 7   | GLY  | 4.2  |
| 27  | AU    | 68  | ASN  | 4.1  |
| 31  | CY    | 57  | GLU  | 4.1  |
| 10  | AD    | 43  | ASP  | 4.1  |
| 35  | BC    | 150 | VAL  | 4.1  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 42  | BJ    | 30   | LYS  | 4.1  |
| 51  | BS    | 81   | GLY  | 4.1  |
| 8   | CB    | 2402 | U    | 4.1  |
| 11  | CE    | 122  | GLU  | 4.1  |
| 27  | AU    | 29   | SER  | 4.1  |
| 14  | AH    | 79   | THR  | 4.1  |
| 29  | AW    | 82   | GLU  | 4.1  |
| 10  | CD    | 70   | LYS  | 4.1  |
| 14  | AH    | 96   | THR  | 4.1  |
| 42  | BJ    | 32   | THR  | 4.1  |
| 49  | BQ    | 82   | VAL  | 4.1  |
| 14  | AH    | 132  | PHE  | 4.1  |
| 15  | CI    | 110  | GLN  | 4.1  |
| 24  | AR    | 12   | HIS  | 4.1  |
| 42  | BJ    | 29   | ALA  | 4.1  |
| 5   | A4    | 21   | GLY  | 4.1  |
| 20  | CN    | 123  | GLU  | 4.1  |
| 29  | CW    | 6    | GLY  | 4.1  |
| 41  | BI    | 17   | ARG  | 4.1  |
| 25  | AS    | 1    | MET  | 4.1  |
| 15  | AI    | 74   | PRO  | 4.0  |
| 29  | CW    | 67   | LYS  | 4.0  |
| 33  | DA    | 1042 | A    | 4.0  |
| 14  | AH    | 128  | HIS  | 4.0  |
| 1   | A0    | 55   | ALA  | 4.0  |
| 42  | BJ    | 39   | PRO  | 4.0  |
| 42  | BJ    | 102  | LEU  | 4.0  |
| 45  | BM    | 95   | PRO  | 4.0  |
| 14  | AH    | 105  | ALA  | 4.0  |
| 39  | BG    | 84   | TYR  | 4.0  |
| 19  | AM    | 134  | THR  | 4.0  |
| 9   | AC    | 6    | LYS  | 4.0  |
| 18  | CL    | 144  | GLU  | 4.0  |
| 27  | CU    | 88   | ASP  | 4.0  |
| 45  | DM    | 3    | ILE  | 4.0  |
| 45  | BM    | 114  | PRO  | 3.9  |
| 15  | CI    | 86   | LYS  | 3.9  |
| 51  | BS    | 79   | TYR  | 3.9  |
| 21  | AO    | 58   | ILE  | 3.9  |
| 51  | DS    | 40   | PHE  | 3.9  |
| 15  | CI    | 112  | LYS  | 3.9  |
| 31  | AY    | 10   | ARG  | 3.9  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 12  | CF    | 83  | PRO  | 3.9  |
| 26  | CT    | 93  | LEU  | 3.9  |
| 8   | CB    | 139 | U    | 3.9  |
| 11  | CE    | 169 | VAL  | 3.9  |
| 15  | CI    | 74  | PRO  | 3.9  |
| 9   | CC    | 3   | VAL  | 3.9  |
| 13  | CG    | 172 | GLU  | 3.9  |
| 29  | CW    | 3   | LYS  | 3.9  |
| 33  | BA    | 412 | A    | 3.9  |
| 18  | CL    | 10  | GLU  | 3.9  |
| 14  | AH    | 110 | VAL  | 3.9  |
| 42  | BJ    | 76  | ILE  | 3.9  |
| 46  | DN    | 35  | ALA  | 3.9  |
| 39  | BG    | 77  | ARG  | 3.8  |
| 41  | DI    | 15  | ALA  | 3.8  |
| 15  | AI    | 77  | VAL  | 3.8  |
| 45  | BM    | 105 | ALA  | 3.8  |
| 42  | BJ    | 6   | ILE  | 3.8  |
| 1   | C0    | 44  | ALA  | 3.8  |
| 35  | BC    | 157 | GLY  | 3.8  |
| 37  | BE    | 27  | GLY  | 3.8  |
| 42  | DJ    | 35  | GLN  | 3.8  |
| 30  | CX    | 31  | GLN  | 3.8  |
| 24  | CR    | 42  | ALA  | 3.8  |
| 29  | CW    | 1   | ALA  | 3.8  |
| 42  | BJ    | 31  | ARG  | 3.8  |
| 26  | AT    | 71  | GLY  | 3.8  |
| 27  | CU    | 56  | GLY  | 3.8  |
| 26  | CT    | 70  | HIS  | 3.8  |
| 45  | DM    | 41  | ASP  | 3.8  |
| 42  | BJ    | 42  | LEU  | 3.8  |
| 14  | AH    | 118 | PRO  | 3.8  |
| 34  | BB    | 33  | ALA  | 3.8  |
| 32  | AZ    | 35  | ASP  | 3.8  |
| 29  | CW    | 4   | LYS  | 3.8  |
| 29  | CW    | 5   | ALA  | 3.8  |
| 14  | AH    | 100 | ALA  | 3.8  |
| 31  | AY    | 22  | THR  | 3.7  |
| 46  | DN    | 93  | PRO  | 3.7  |
| 26  | CT    | 72  | GLN  | 3.7  |
| 15  | CI    | 89  | SER  | 3.7  |
| 51  | DS    | 11  | ASP  | 3.7  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 35  | BC    | 100  | ILE  | 3.7  |
| 33  | BA    | 121  | U    | 3.7  |
| 39  | BG    | 112  | ASP  | 3.7  |
| 14  | AH    | 78   | VAL  | 3.7  |
| 27  | CU    | 1    | ALA  | 3.7  |
| 35  | DC    | 169  | GLU  | 3.7  |
| 35  | BC    | 158  | GLY  | 3.7  |
| 14  | AH    | 121  | VAL  | 3.7  |
| 15  | AI    | 60   | VAL  | 3.7  |
| 29  | CW    | 2    | HIS  | 3.7  |
| 8   | CB    | 846  | U    | 3.7  |
| 41  | DI    | 127  | SER  | 3.7  |
| 15  | AI    | 9    | LYS  | 3.7  |
| 37  | BE    | 16   | ALA  | 3.7  |
| 48  | DP    | 17   | TYR  | 3.6  |
| 25  | AS    | 105  | VAL  | 3.6  |
| 48  | BP    | 81   | ALA  | 3.6  |
| 45  | BM    | 99   | GLN  | 3.6  |
| 13  | CG    | 55   | ASP  | 3.6  |
| 26  | CT    | 4    | GLU  | 3.6  |
| 8   | AB    | 1459 | G    | 3.6  |
| 9   | CC    | 269  | ARG  | 3.6  |
| 45  | BM    | 55   | LEU  | 3.6  |
| 48  | BP    | 42   | ILE  | 3.6  |
| 45  | DM    | 39   | ALA  | 3.6  |
| 11  | AE    | 114  | ARG  | 3.6  |
| 41  | BI    | 90   | ASP  | 3.6  |
| 42  | BJ    | 25   | ILE  | 3.6  |
| 10  | CD    | 71   | ALA  | 3.6  |
| 45  | DM    | 32   | ILE  | 3.6  |
| 27  | AU    | 47   | PRO  | 3.6  |
| 13  | CG    | 48   | THR  | 3.6  |
| 8   | AB    | 2154 | A    | 3.6  |
| 10  | CD    | 93   | GLY  | 3.6  |
| 25  | AS    | 104  | THR  | 3.6  |
| 46  | DN    | 46   | LYS  | 3.6  |
| 48  | DP    | 10   | GLY  | 3.6  |
| 41  | BI    | 50   | PRO  | 3.5  |
| 13  | AG    | 1    | SER  | 3.5  |
| 33  | BA    | 466  | A    | 3.5  |
| 8   | CB    | 2211 | A    | 3.5  |
| 15  | AI    | 3    | LYS  | 3.5  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 16  | CJ    | 43   | GLU  | 3.5  |
| 11  | CE    | 145  | ASP  | 3.5  |
| 35  | BC    | 167  | TYR  | 3.5  |
| 27  | CU    | 29   | SER  | 3.5  |
| 9   | AC    | 10   | PRO  | 3.5  |
| 9   | AC    | 268  | ARG  | 3.5  |
| 13  | CG    | 176  | LYS  | 3.5  |
| 46  | DN    | 51   | PRO  | 3.5  |
| 15  | CI    | 97   | VAL  | 3.5  |
| 27  | CU    | 4    | ILE  | 3.5  |
| 5   | C4    | 37   | GLN  | 3.5  |
| 9   | AC    | 79   | ARG  | 3.5  |
| 29  | AW    | 67   | LYS  | 3.5  |
| 34  | BB    | 158  | ASP  | 3.5  |
| 22  | AP    | 97   | TYR  | 3.5  |
| 2   | C1    | 5    | ARG  | 3.5  |
| 15  | AI    | 105  | LEU  | 3.5  |
| 9   | AC    | 8    | THR  | 3.5  |
| 42  | BJ    | 86   | ALA  | 3.5  |
| 15  | CI    | 107  | GLU  | 3.5  |
| 46  | BN    | 52   | ARG  | 3.5  |
| 11  | CE    | 141  | MET  | 3.4  |
| 30  | CX    | 34   | SER  | 3.4  |
| 14  | AH    | 119  | ASN  | 3.4  |
| 28  | AV    | 74   | ALA  | 3.4  |
| 42  | BJ    | 73   | LEU  | 3.4  |
| 42  | BJ    | 93   | ALA  | 3.4  |
| 11  | CE    | 111  | GLU  | 3.4  |
| 32  | CZ    | 43   | PHE  | 3.4  |
| 8   | CB    | 2903 | U    | 3.4  |
| 16  | AJ    | 1    | MET  | 3.4  |
| 14  | AH    | 123  | ARG  | 3.4  |
| 41  | BI    | 129  | ARG  | 3.4  |
| 2   | A1    | 4    | ILE  | 3.4  |
| 5   | A4    | 24   | ARG  | 3.4  |
| 15  | CI    | 2    | LYS  | 3.4  |
| 14  | AH    | 20   | ASN  | 3.4  |
| 15  | AI    | 18   | ASN  | 3.4  |
| 35  | DC    | 167  | TYR  | 3.4  |
| 46  | DN    | 48   | GLN  | 3.4  |
| 27  | AU    | 60   | LYS  | 3.4  |
| 45  | BM    | 84   | CYS  | 3.4  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 8   | AB    | 1727 | C    | 3.4  |
| 8   | AB    | 2141 | G    | 3.4  |
| 11  | CE    | 22   | ASP  | 3.4  |
| 33  | DA    | 1534 | A    | 3.4  |
| 39  | BG    | 74   | VAL  | 3.4  |
| 39  | DG    | 4    | ARG  | 3.4  |
| 45  | BM    | 110  | GLY  | 3.4  |
| 8   | AB    | 2308 | G    | 3.3  |
| 40  | BH    | 109  | VAL  | 3.3  |
| 45  | BM    | 83   | GLY  | 3.3  |
| 13  | CG    | 88   | LEU  | 3.3  |
| 15  | CI    | 43   | ALA  | 3.3  |
| 45  | DM    | 63   | VAL  | 3.3  |
| 51  | BS    | 43   | MET  | 3.3  |
| 46  | DN    | 42   | ASN  | 3.3  |
| 24  | CR    | 26   | ASP  | 3.3  |
| 8   | AB    | 1726 | C    | 3.3  |
| 8   | AB    | 1728 | C    | 3.3  |
| 20  | AN    | 122  | ALA  | 3.3  |
| 21  | CO    | 21   | LEU  | 3.3  |
| 15  | CI    | 12   | VAL  | 3.3  |
| 15  | CI    | 77   | VAL  | 3.3  |
| 45  | BM    | 93   | GLY  | 3.3  |
| 35  | DC    | 173  | PRO  | 3.3  |
| 20  | AN    | 123  | GLU  | 3.3  |
| 51  | BS    | 80   | ARG  | 3.3  |
| 8   | AB    | 613  | A    | 3.3  |
| 51  | DS    | 79   | TYR  | 3.3  |
| 11  | AE    | 125  | SER  | 3.2  |
| 14  | AH    | 82   | SER  | 3.2  |
| 14  | AH    | 142  | VAL  | 3.2  |
| 34  | BB    | 183  | PHE  | 3.2  |
| 16  | CJ    | 63   | ALA  | 3.2  |
| 42  | BJ    | 89   | ARG  | 3.2  |
| 27  | AU    | 30   | SER  | 3.2  |
| 41  | BI    | 62   | LEU  | 3.2  |
| 15  | AI    | 75   | ALA  | 3.2  |
| 42  | BJ    | 82   | LYS  | 3.2  |
| 15  | CI    | 109  | ALA  | 3.2  |
| 46  | DN    | 22   | LYS  | 3.2  |
| 31  | AY    | 1    | ALA  | 3.2  |
| 25  | CS    | 1    | MET  | 3.2  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 13  | AG    | 49   | LEU  | 3.2  |
| 14  | CH    | 20   | ASN  | 3.2  |
| 41  | DI    | 126  | PHE  | 3.2  |
| 26  | AT    | 72   | GLN  | 3.2  |
| 9   | AC    | 269  | ARG  | 3.2  |
| 34  | DB    | 93   | HIS  | 3.2  |
| 22  | CP    | 111  | GLU  | 3.2  |
| 28  | AV    | 34   | LYS  | 3.2  |
| 45  | BM    | 111  | PRO  | 3.2  |
| 11  | AE    | 124  | PHE  | 3.2  |
| 18  | CL    | 3    | LEU  | 3.2  |
| 39  | BG    | 3    | ARG  | 3.2  |
| 42  | BJ    | 40   | ILE  | 3.2  |
| 51  | BS    | 30   | LEU  | 3.2  |
| 45  | BM    | 107  | THR  | 3.2  |
| 38  | BF    | 35   | LYS  | 3.2  |
| 41  | BI    | 6    | TYR  | 3.2  |
| 45  | DM    | 62   | PHE  | 3.2  |
| 18  | AL    | 6    | LEU  | 3.2  |
| 41  | BI    | 27   | ILE  | 3.1  |
| 15  | AI    | 95   | ASP  | 3.1  |
| 41  | BI    | 18   | VAL  | 3.1  |
| 37  | BE    | 81   | GLN  | 3.1  |
| 7   | CA    | 88   | C    | 3.1  |
| 34  | DB    | 35   | ASN  | 3.1  |
| 14  | AH    | 84   | ALA  | 3.1  |
| 12  | AF    | 117  | SER  | 3.1  |
| 30  | CX    | 33   | ALA  | 3.1  |
| 33  | DA    | 1001 | C    | 3.1  |
| 45  | BM    | 94   | LEU  | 3.1  |
| 9   | AC    | 9    | SER  | 3.1  |
| 29  | CW    | 19   | ARG  | 3.1  |
| 39  | BG    | 4    | ARG  | 3.1  |
| 41  | BI    | 48   | ARG  | 3.1  |
| 39  | BG    | 78   | ARG  | 3.1  |
| 33  | BA    | 461  | A    | 3.1  |
| 32  | AZ    | 43   | PHE  | 3.1  |
| 2   | A1    | 35   | LEU  | 3.1  |
| 19  | AM    | 3    | GLN  | 3.1  |
| 14  | CH    | 93   | SER  | 3.1  |
| 29  | AW    | 81   | ILE  | 3.1  |
| 45  | BM    | 59   | VAL  | 3.1  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 13  | AG    | 50  | THR  | 3.1  |
| 31  | AY    | 11  | SER  | 3.1  |
| 15  | AI    | 96  | LYS  | 3.1  |
| 14  | CH    | 86  | ASP  | 3.1  |
| 43  | BK    | 87  | GLY  | 3.0  |
| 13  | CG    | 150 | TYR  | 3.0  |
| 15  | CI    | 138 | VAL  | 3.0  |
| 21  | CO    | 57  | ALA  | 3.0  |
| 19  | AM    | 2   | LEU  | 3.0  |
| 26  | CT    | 73  | ARG  | 3.0  |
| 13  | CG    | 59  | ASP  | 3.0  |
| 11  | AE    | 117 | ARG  | 3.0  |
| 15  | CI    | 13  | ALA  | 3.0  |
| 27  | AU    | 32  | LYS  | 3.0  |
| 51  | BS    | 8   | PRO  | 3.0  |
| 46  | BN    | 22  | LYS  | 3.0  |
| 15  | CI    | 10  | LEU  | 3.0  |
| 30  | CX    | 32  | ALA  | 3.0  |
| 46  | DN    | 45  | LEU  | 3.0  |
| 1   | C0    | 34  | GLY  | 3.0  |
| 12  | AF    | 73  | VAL  | 3.0  |
| 10  | AD    | 90  | PHE  | 3.0  |
| 45  | BM    | 1   | ALA  | 3.0  |
| 14  | AH    | 12  | LEU  | 3.0  |
| 19  | CM    | 10  | ARG  | 3.0  |
| 30  | CX    | 1   | MET  | 3.0  |
| 37  | DE    | 28  | ARG  | 3.0  |
| 33  | BA    | 80  | A    | 3.0  |
| 5   | C4    | 23  | ILE  | 2.9  |
| 27  | AU    | 89  | GLY  | 2.9  |
| 51  | DS    | 26  | ASP  | 2.9  |
| 51  | BS    | 42  | ASN  | 2.9  |
| 9   | CC    | 78  | GLU  | 2.9  |
| 39  | DG    | 154 | ARG  | 2.9  |
| 15  | AI    | 139 | VAL  | 2.9  |
| 14  | AH    | 140 | ALA  | 2.9  |
| 15  | AI    | 119 | ALA  | 2.9  |
| 11  | CE    | 19  | PHE  | 2.9  |
| 15  | CI    | 135 | MET  | 2.9  |
| 18  | CL    | 99  | ASN  | 2.9  |
| 15  | CI    | 102 | ARG  | 2.9  |
| 2   | C1    | 53  | ILE  | 2.9  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 8   | AB    | 1870 | C    | 2.9  |
| 24  | AR    | 41   | ILE  | 2.9  |
| 10  | AD    | 84   | LEU  | 2.9  |
| 15  | CI    | 87   | SER  | 2.9  |
| 16  | AJ    | 99   | ARG  | 2.9  |
| 15  | AI    | 68   | PHE  | 2.9  |
| 12  | CF    | 77   | LYS  | 2.9  |
| 51  | BS    | 10   | ILE  | 2.9  |
| 36  | DD    | 36   | ALA  | 2.9  |
| 2   | A1    | 41   | VAL  | 2.9  |
| 11  | AE    | 43   | THR  | 2.9  |
| 38  | BF    | 39   | LEU  | 2.9  |
| 15  | AI    | 73   | PRO  | 2.9  |
| 15  | AI    | 138  | VAL  | 2.8  |
| 51  | DS    | 13   | HIS  | 2.8  |
| 18  | CL    | 108  | ALA  | 2.8  |
| 45  | BM    | 61   | LYS  | 2.8  |
| 33  | BA    | 90   | C    | 2.8  |
| 51  | BS    | 38   | THR  | 2.8  |
| 9   | CC    | 268  | ARG  | 2.8  |
| 42  | BJ    | 71   | LEU  | 2.8  |
| 45  | BM    | 98   | GLY  | 2.8  |
| 11  | CE    | 199  | MET  | 2.8  |
| 15  | CI    | 71   | LYS  | 2.8  |
| 38  | BF    | 62   | MET  | 2.8  |
| 18  | CL    | 74   | THR  | 2.8  |
| 27  | CU    | 5    | ARG  | 2.8  |
| 21  | AO    | 29   | HIS  | 2.8  |
| 13  | AG    | 171  | LYS  | 2.8  |
| 51  | DS    | 29   | PRO  | 2.8  |
| 35  | BC    | 152  | VAL  | 2.8  |
| 34  | DB    | 123  | GLY  | 2.8  |
| 30  | CX    | 36   | GLN  | 2.8  |
| 35  | DC    | 205  | GLU  | 2.8  |
| 13  | AG    | 13   | GLY  | 2.8  |
| 44  | BL    | 69   | GLU  | 2.8  |
| 12  | AF    | 19   | PHE  | 2.8  |
| 13  | AG    | 100  | ASN  | 2.8  |
| 18  | AL    | 127  | VAL  | 2.8  |
| 15  | AI    | 80   | LYS  | 2.8  |
| 14  | AH    | 75   | LEU  | 2.8  |
| 18  | AL    | 82   | LEU  | 2.8  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 31  | AY    | 29   | ARG  | 2.8  |
| 42  | BJ    | 26   | VAL  | 2.8  |
| 45  | BM    | 91   | ARG  | 2.8  |
| 51  | DS    | 9    | PHE  | 2.8  |
| 21  | AO    | 28   | VAL  | 2.8  |
| 26  | CT    | 2    | ILE  | 2.8  |
| 14  | AH    | 86   | ASP  | 2.8  |
| 1   | A0    | 33   | SER  | 2.7  |
| 15  | CI    | 119  | ALA  | 2.8  |
| 45  | BM    | 103  | THR  | 2.7  |
| 2   | C1    | 12   | SER  | 2.7  |
| 16  | AJ    | 123  | LYS  | 2.7  |
| 19  | AM    | 6    | ARG  | 2.7  |
| 42  | DJ    | 29   | ALA  | 2.7  |
| 51  | DS    | 30   | LEU  | 2.7  |
| 35  | BC    | 110  | LEU  | 2.7  |
| 51  | DS    | 81   | GLY  | 2.7  |
| 13  | AG    | 176  | LYS  | 2.7  |
| 15  | AI    | 120  | ASP  | 2.7  |
| 13  | CG    | 49   | LEU  | 2.7  |
| 15  | AI    | 137  | LEU  | 2.7  |
| 14  | AH    | 114  | GLU  | 2.7  |
| 4   | A3    | 62   | PRO  | 2.7  |
| 18  | AL    | 56   | PRO  | 2.7  |
| 2   | A1    | 18   | HIS  | 2.7  |
| 11  | CE    | 151  | GLY  | 2.7  |
| 18  | AL    | 103  | ILE  | 2.7  |
| 1   | C0    | 33   | SER  | 2.7  |
| 16  | CJ    | 88   | THR  | 2.7  |
| 18  | CL    | 116  | VAL  | 2.7  |
| 1   | C0    | 56   | LYS  | 2.7  |
| 33  | BA    | 1265 | C    | 2.7  |
| 19  | AM    | 4    | PRO  | 2.7  |
| 33  | BA    | 1362 | A    | 2.7  |
| 27  | CU    | 28   | LEU  | 2.7  |
| 21  | CO    | 23   | ALA  | 2.7  |
| 14  | AH    | 91   | PHE  | 2.7  |
| 19  | AM    | 92   | TRP  | 2.7  |
| 29  | AW    | 63   | ASP  | 2.7  |
| 37  | DE    | 158  | LYS  | 2.7  |
| 11  | CE    | 165  | HIS  | 2.7  |
| 11  | CE    | 188  | MET  | 2.7  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 51  | DS    | 43   | MET  | 2.7  |
| 13  | CG    | 106  | LEU  | 2.7  |
| 15  | AI    | 78   | LEU  | 2.7  |
| 51  | BS    | 41   | PRO  | 2.7  |
| 15  | CI    | 35   | MET  | 2.7  |
| 20  | CN    | 120  | GLU  | 2.7  |
| 9   | AC    | 256  | THR  | 2.7  |
| 16  | CJ    | 120  | ARG  | 2.6  |
| 37  | BE    | 30   | PHE  | 2.7  |
| 48  | BP    | 19   | VAL  | 2.6  |
| 48  | BP    | 41   | PRO  | 2.6  |
| 46  | BN    | 57   | SER  | 2.6  |
| 21  | CO    | 35   | ILE  | 2.6  |
| 41  | BI    | 128  | LYS  | 2.6  |
| 35  | BC    | 203  | LYS  | 2.6  |
| 8   | AB    | 2138 | G    | 2.6  |
| 25  | CS    | 4    | ILE  | 2.6  |
| 35  | DC    | 180  | ASP  | 2.6  |
| 8   | AB    | 2211 | A    | 2.6  |
| 12  | AF    | 37   | MET  | 2.6  |
| 15  | AI    | 100  | ILE  | 2.6  |
| 35  | BC    | 156  | LEU  | 2.6  |
| 8   | AB    | 405  | U    | 2.6  |
| 53  | BU    | 35   | GLU  | 2.6  |
| 18  | AL    | 77   | ILE  | 2.6  |
| 33  | DA    | 461  | A    | 2.6  |
| 15  | AI    | 52   | LEU  | 2.6  |
| 27  | CU    | 80   | ASP  | 2.6  |
| 10  | AD    | 86   | GLU  | 2.6  |
| 5   | A4    | 1    | MET  | 2.6  |
| 15  | CI    | 6    | ALA  | 2.6  |
| 42  | DJ    | 6    | ILE  | 2.6  |
| 11  | CE    | 24   | ASN  | 2.6  |
| 32  | CZ    | 6    | HIS  | 2.6  |
| 40  | BH    | 26   | MET  | 2.6  |
| 52  | DT    | 46   | ALA  | 2.6  |
| 14  | AH    | 83   | LYS  | 2.6  |
| 12  | CF    | 84   | ILE  | 2.6  |
| 51  | DS    | 31   | ARG  | 2.6  |
| 35  | DC    | 204  | GLY  | 2.6  |
| 38  | BF    | 36   | ILE  | 2.6  |
| 49  | BQ    | 13   | SER  | 2.6  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 32  | CZ    | 50   | ASP  | 2.6  |
| 48  | DP    | 18   | GLN  | 2.6  |
| 3   | A2    | 35   | ARG  | 2.6  |
| 42  | BJ    | 79   | PRO  | 2.6  |
| 43  | BK    | 88   | PRO  | 2.6  |
| 8   | AB    | 2140 | G    | 2.6  |
| 21  | CO    | 117  | PHE  | 2.6  |
| 51  | BS    | 12   | LEU  | 2.6  |
| 5   | C4    | 32   | LYS  | 2.6  |
| 8   | AB    | 1173 | U    | 2.6  |
| 15  | AI    | 12   | VAL  | 2.6  |
| 45  | DM    | 43   | LYS  | 2.6  |
| 37  | BE    | 53   | ARG  | 2.6  |
| 27  | AU    | 57   | ILE  | 2.6  |
| 41  | BI    | 64   | ILE  | 2.6  |
| 44  | BL    | 24   | GLU  | 2.6  |
| 27  | CU    | 55   | GLY  | 2.6  |
| 35  | BC    | 204  | GLY  | 2.6  |
| 21  | CO    | 115  | LEU  | 2.6  |
| 41  | BI    | 51   | LEU  | 2.6  |
| 39  | DG    | 85   | GLN  | 2.6  |
| 14  | AH    | 74   | ALA  | 2.6  |
| 27  | AU    | 91   | LYS  | 2.5  |
| 9   | AC    | 3    | VAL  | 2.5  |
| 15  | AI    | 125  | THR  | 2.5  |
| 42  | DJ    | 28   | THR  | 2.5  |
| 8   | AB    | 2790 | U    | 2.5  |
| 8   | AB    | 2903 | U    | 2.5  |
| 32  | AZ    | 50   | ASP  | 2.5  |
| 5   | A4    | 17   | VAL  | 2.5  |
| 49  | BQ    | 62   | GLU  | 2.5  |
| 44  | BL    | 123  | ALA  | 2.5  |
| 2   | A1    | 47   | ILE  | 2.5  |
| 50  | BR    | 19   | GLU  | 2.5  |
| 51  | BS    | 18   | VAL  | 2.5  |
| 21  | CO    | 98   | GLN  | 2.5  |
| 29  | AW    | 45   | HIS  | 2.5  |
| 9   | AC    | 21   | PRO  | 2.5  |
| 18  | CL    | 75   | ALA  | 2.5  |
| 53  | BU    | 45   | LYS  | 2.5  |
| 46  | DN    | 50   | LEU  | 2.5  |
| 5   | A4    | 25   | VAL  | 2.5  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 27  | CU    | 7    | ASP  | 2.5  |
| 34  | DB    | 38   | HIS  | 2.5  |
| 14  | AH    | 87   | GLU  | 2.5  |
| 8   | CB    | 1067 | A    | 2.5  |
| 19  | CM    | 135  | VAL  | 2.5  |
| 27  | CU    | 23   | LYS  | 2.5  |
| 48  | BP    | 17   | TYR  | 2.5  |
| 13  | AG    | 9    | VAL  | 2.5  |
| 49  | BQ    | 12   | VAL  | 2.5  |
| 5   | C4    | 18   | LYS  | 2.5  |
| 13  | CG    | 57   | TYR  | 2.5  |
| 18  | CL    | 76   | GLU  | 2.5  |
| 33  | DA    | 999  | C    | 2.5  |
| 46  | DN    | 19   | TYR  | 2.5  |
| 51  | DS    | 73   | PHE  | 2.5  |
| 10  | CD    | 72   | GLY  | 2.5  |
| 12  | AF    | 74   | ALA  | 2.5  |
| 12  | CF    | 73   | VAL  | 2.5  |
| 11  | AE    | 155  | GLU  | 2.5  |
| 42  | BJ    | 100  | ILE  | 2.5  |
| 33  | BA    | 1159 | U    | 2.5  |
| 13  | AG    | 59   | ASP  | 2.5  |
| 14  | CH    | 28   | ASN  | 2.5  |
| 11  | CE    | 170  | ARG  | 2.5  |
| 8   | AB    | 846  | U    | 2.5  |
| 46  | BN    | 53   | ASP  | 2.5  |
| 11  | CE    | 189  | THR  | 2.5  |
| 3   | C2    | 35   | ARG  | 2.5  |
| 40  | BH    | 128  | VAL  | 2.5  |
| 8   | AB    | 645  | C    | 2.4  |
| 3   | C2    | 39   | ARG  | 2.4  |
| 10  | CD    | 75   | ALA  | 2.4  |
| 11  | CE    | 87   | ALA  | 2.4  |
| 18  | CL    | 28   | GLY  | 2.4  |
| 31  | AY    | 14   | GLY  | 2.4  |
| 34  | DB    | 33   | ALA  | 2.4  |
| 51  | BS    | 72   | GLU  | 2.4  |
| 15  | CI    | 96   | LYS  | 2.4  |
| 16  | AJ    | 54   | ILE  | 2.4  |
| 35  | BC    | 194  | VAL  | 2.4  |
| 48  | DP    | 37   | GLY  | 2.4  |
| 46  | DN    | 20   | PHE  | 2.4  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 34  | DB    | 94   | ARG  | 2.4  |
| 48  | DP    | 8    | ARG  | 2.4  |
| 42  | BJ    | 34   | ALA  | 2.4  |
| 53  | BU    | 18   | PHE  | 2.4  |
| 14  | AH    | 92   | GLY  | 2.4  |
| 24  | CR    | 87   | GLN  | 2.4  |
| 8   | AB    | 1508 | A    | 2.4  |
| 34  | BB    | 32   | GLY  | 2.4  |
| 37  | BE    | 33   | THR  | 2.4  |
| 10  | AD    | 111  | GLY  | 2.4  |
| 28  | AV    | 3    | THR  | 2.4  |
| 18  | AL    | 101  | ILE  | 2.4  |
| 51  | BS    | 9    | PHE  | 2.4  |
| 9   | CC    | 270  | ARG  | 2.4  |
| 45  | BM    | 92   | ARG  | 2.4  |
| 46  | BN    | 50   | LEU  | 2.4  |
| 15  | CI    | 122  | GLU  | 2.4  |
| 27  | AU    | 71   | ILE  | 2.4  |
| 33  | DA    | 1002 | G    | 2.4  |
| 14  | AH    | 141  | LYS  | 2.4  |
| 15  | CI    | 3    | LYS  | 2.4  |
| 31  | CY    | 37   | ARG  | 2.4  |
| 21  | AO    | 6    | ALA  | 2.4  |
| 15  | AI    | 37   | PHE  | 2.4  |
| 21  | AO    | 95   | SER  | 2.4  |
| 29  | CW    | 81   | ILE  | 2.4  |
| 35  | BC    | 145  | ALA  | 2.4  |
| 10  | AD    | 187  | LEU  | 2.4  |
| 31  | CY    | 28   | LEU  | 2.4  |
| 49  | BQ    | 5    | ARG  | 2.4  |
| 4   | C3    | 63   | TYR  | 2.4  |
| 14  | CH    | 80   | ILE  | 2.4  |
| 4   | C3    | 64   | ALA  | 2.4  |
| 20  | AN    | 124  | ALA  | 2.4  |
| 33  | BA    | 81   | A    | 2.4  |
| 34  | DB    | 126  | ASP  | 2.4  |
| 13  | CG    | 51   | PHE  | 2.4  |
| 39  | BG    | 8    | GLN  | 2.4  |
| 27  | AU    | 81   | ARG  | 2.4  |
| 34  | DB    | 146  | SER  | 2.4  |
| 40  | DH    | 129  | ALA  | 2.4  |
| 33  | BA    | 1240 | U    | 2.4  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 52  | DT    | 2    | ASN  | 2.4  |
| 12  | AF    | 166  | ARG  | 2.4  |
| 46  | DN    | 40   | ARG  | 2.4  |
| 35  | DC    | 33   | ASP  | 2.4  |
| 24  | CR    | 86   | GLN  | 2.3  |
| 30  | CX    | 20   | ASN  | 2.3  |
| 5   | C4    | 25   | VAL  | 2.3  |
| 13  | CG    | 3    | VAL  | 2.3  |
| 42  | BJ    | 10   | LEU  | 2.3  |
| 8   | AB    | 1537 | G    | 2.3  |
| 2   | A1    | 5    | ARG  | 2.3  |
| 53  | BU    | 34   | ARG  | 2.3  |
| 9   | AC    | 152  | GLN  | 2.3  |
| 11  | CE    | 41   | GLN  | 2.3  |
| 36  | DD    | 35   | GLN  | 2.3  |
| 17  | AK    | 11   | ALA  | 2.3  |
| 5   | A4    | 18   | LYS  | 2.3  |
| 46  | BN    | 55   | SER  | 2.3  |
| 35  | BC    | 1    | GLY  | 2.3  |
| 30  | AX    | 37   | LEU  | 2.3  |
| 39  | BG    | 39   | GLU  | 2.3  |
| 15  | CI    | 46   | ASP  | 2.3  |
| 34  | DB    | 68   | PHE  | 2.3  |
| 42  | BJ    | 8    | ILE  | 2.3  |
| 45  | BM    | 108  | ARG  | 2.3  |
| 8   | AB    | 1172 | C    | 2.3  |
| 14  | AH    | 99   | ILE  | 2.3  |
| 30  | CX    | 37   | LEU  | 2.3  |
| 34  | DB    | 36   | LYS  | 2.3  |
| 10  | CD    | 156  | PHE  | 2.3  |
| 18  | CL    | 9    | ALA  | 2.3  |
| 19  | CM    | 1    | MET  | 2.3  |
| 40  | BH    | 100  | ILE  | 2.3  |
| 41  | BI    | 91   | GLU  | 2.3  |
| 33  | BA    | 1319 | A    | 2.3  |
| 4   | A3    | 64   | ALA  | 2.3  |
| 21  | CO    | 63   | LYS  | 2.3  |
| 35  | BC    | 92   | ASP  | 2.3  |
| 40  | DH    | 102  | VAL  | 2.3  |
| 40  | BH    | 101  | ALA  | 2.3  |
| 42  | DJ    | 101  | SER  | 2.3  |
| 35  | DC    | 168  | ARG  | 2.3  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 48  | BP    | 7    | ALA  | 2.3  |
| 16  | AJ    | 23   | LYS  | 2.3  |
| 35  | BC    | 165  | GLU  | 2.3  |
| 4   | A3    | 44   | ARG  | 2.3  |
| 37  | BE    | 28   | ARG  | 2.3  |
| 1   | A0    | 37   | HIS  | 2.3  |
| 15  | AI    | 86   | LYS  | 2.3  |
| 31  | AY    | 24   | LEU  | 2.3  |
| 2   | A1    | 3    | GLY  | 2.3  |
| 12  | AF    | 72   | SER  | 2.3  |
| 27  | CU    | 3    | LYS  | 2.3  |
| 41  | BI    | 63   | TYR  | 2.3  |
| 8   | AB    | 2151 | U    | 2.2  |
| 18  | CL    | 8    | PRO  | 2.2  |
| 39  | BG    | 2    | ARG  | 2.2  |
| 29  | CW    | 41   | GLY  | 2.2  |
| 13  | CG    | 58   | ALA  | 2.2  |
| 14  | CH    | 147  | VAL  | 2.2  |
| 14  | CH    | 149  | GLU  | 2.2  |
| 34  | BB    | 161  | PHE  | 2.2  |
| 34  | DB    | 161  | PHE  | 2.2  |
| 19  | AM    | 133  | LYS  | 2.2  |
| 39  | BG    | 80   | GLY  | 2.2  |
| 42  | DJ    | 39   | PRO  | 2.2  |
| 28  | CV    | 92   | VAL  | 2.2  |
| 4   | A3    | 61   | LEU  | 2.2  |
| 19  | AM    | 135  | VAL  | 2.2  |
| 30  | AX    | 3    | ALA  | 2.2  |
| 38  | DF    | 88   | MET  | 2.2  |
| 48  | BP    | 36   | VAL  | 2.2  |
| 8   | AB    | 1044 | C    | 2.2  |
| 31  | AY    | 7    | THR  | 2.2  |
| 45  | DM    | 46   | GLU  | 2.2  |
| 32  | AZ    | 36   | VAL  | 2.2  |
| 51  | DS    | 39   | ILE  | 2.2  |
| 39  | BG    | 75   | LYS  | 2.2  |
| 41  | BI    | 99   | LYS  | 2.2  |
| 42  | BJ    | 24   | GLU  | 2.2  |
| 8   | CB    | 1088 | A    | 2.2  |
| 15  | CI    | 125  | THR  | 2.2  |
| 42  | DJ    | 102  | LEU  | 2.2  |
| 48  | DP    | 36   | VAL  | 2.2  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 8   | CB    | 140  | C    | 2.2  |
| 31  | CY    | 29   | ARG  | 2.2  |
| 8   | CB    | 1058 | U    | 2.2  |
| 12  | AF    | 18   | GLU  | 2.2  |
| 35  | BC    | 151  | GLU  | 2.2  |
| 1   | A0    | 54   | ILE  | 2.2  |
| 27  | AU    | 35   | VAL  | 2.2  |
| 27  | CU    | 68   | ASN  | 2.2  |
| 13  | AG    | 51   | PHE  | 2.2  |
| 37  | BE    | 158  | LYS  | 2.2  |
| 15  | AI    | 79   | LEU  | 2.2  |
| 34  | BB    | 41   | ASN  | 2.2  |
| 44  | DL    | 123  | ALA  | 2.2  |
| 15  | CI    | 120  | ASP  | 2.2  |
| 32  | CZ    | 45   | THR  | 2.2  |
| 46  | DN    | 49   | THR  | 2.2  |
| 48  | BP    | 9    | HIS  | 2.2  |
| 39  | BG    | 44   | SER  | 2.2  |
| 39  | BG    | 28   | ILE  | 2.2  |
| 13  | CG    | 54   | ARG  | 2.2  |
| 45  | BM    | 30   | LYS  | 2.2  |
| 51  | BS    | 29   | PRO  | 2.2  |
| 8   | AB    | 1174 | U    | 2.2  |
| 33  | BA    | 63   | C    | 2.2  |
| 51  | BS    | 40   | PHE  | 2.2  |
| 18  | CL    | 104  | GLN  | 2.2  |
| 14  | AH    | 104  | THR  | 2.2  |
| 51  | BS    | 32   | THR  | 2.2  |
| 18  | CL    | 100  | ILE  | 2.2  |
| 29  | AW    | 79   | ILE  | 2.2  |
| 37  | BE    | 34   | ALA  | 2.2  |
| 40  | BH    | 107  | LYS  | 2.2  |
| 13  | AG    | 57   | TYR  | 2.2  |
| 31  | AY    | 32   | GLY  | 2.2  |
| 16  | CJ    | 86   | GLN  | 2.2  |
| 12  | AF    | 17   | THR  | 2.2  |
| 37  | BE    | 13   | LYS  | 2.2  |
| 14  | AH    | 144  | VAL  | 2.2  |
| 19  | CM    | 92   | TRP  | 2.2  |
| 41  | BI    | 125  | GLN  | 2.2  |
| 45  | DM    | 18   | LEU  | 2.2  |
| 51  | BS    | 15   | LEU  | 2.2  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 31  | AY    | 6    | ILE  | 2.2  |
| 13  | AG    | 170  | THR  | 2.2  |
| 38  | BF    | 66   | ALA  | 2.2  |
| 35  | BC    | 192  | TYR  | 2.2  |
| 1   | A0    | 56   | LYS  | 2.2  |
| 45  | BM    | 46   | GLU  | 2.2  |
| 44  | DL    | 12   | ALA  | 2.2  |
| 24  | CR    | 59   | ILE  | 2.2  |
| 41  | BI    | 10   | ARG  | 2.2  |
| 48  | BP    | 20   | VAL  | 2.2  |
| 33  | BA    | 5    | U    | 2.2  |
| 42  | DJ    | 40   | ILE  | 2.2  |
| 48  | BP    | 39   | PHE  | 2.2  |
| 3   | A2    | 37   | LYS  | 2.1  |
| 11  | AE    | 200  | LEU  | 2.1  |
| 43  | DK    | 32   | THR  | 2.1  |
| 10  | AD    | 191  | GLY  | 2.1  |
| 18  | CL    | 2    | ARG  | 2.1  |
| 31  | AY    | 54   | VAL  | 2.1  |
| 2   | A1    | 39   | ASP  | 2.1  |
| 16  | AJ    | 55   | ILE  | 2.1  |
| 33  | BA    | 1322 | C    | 2.1  |
| 2   | C1    | 21   | THR  | 2.1  |
| 15  | AI    | 72   | THR  | 2.1  |
| 27  | AU    | 39   | ASN  | 2.1  |
| 29  | CW    | 34   | SER  | 2.1  |
| 51  | DS    | 32   | THR  | 2.1  |
| 35  | DC    | 78   | LYS  | 2.1  |
| 37  | BE    | 35   | LEU  | 2.1  |
| 41  | DI    | 8    | THR  | 2.1  |
| 46  | BN    | 34   | ASN  | 2.1  |
| 42  | DJ    | 76   | ILE  | 2.1  |
| 14  | CH    | 95   | GLY  | 2.1  |
| 29  | AW    | 9    | THR  | 2.1  |
| 52  | DT    | 51   | ASN  | 2.1  |
| 27  | CU    | 89   | GLY  | 2.1  |
| 33  | DA    | 106  | C    | 2.1  |
| 33  | DA    | 1286 | U    | 2.1  |
| 12  | AF    | 42   | ALA  | 2.1  |
| 19  | AM    | 10   | ARG  | 2.1  |
| 41  | BI    | 56   | MET  | 2.1  |
| 42  | BJ    | 91   | ASP  | 2.1  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 48  | BP    | 68   | SER  | 2.1  |
| 28  | CV    | 73   | LYS  | 2.1  |
| 12  | AF    | 111  | ARG  | 2.1  |
| 37  | DE    | 26   | GLY  | 2.1  |
| 8   | CB    | 1073 | A    | 2.1  |
| 10  | AD    | 150  | GLN  | 2.1  |
| 13  | CG    | 174  | LYS  | 2.1  |
| 20  | AN    | 120  | GLU  | 2.1  |
| 39  | BG    | 10   | LYS  | 2.1  |
| 38  | DF    | 62   | MET  | 2.1  |
| 41  | BI    | 19   | PHE  | 2.1  |
| 3   | C2    | 43   | THR  | 2.1  |
| 5   | C4    | 33   | HIS  | 2.1  |
| 5   | A4    | 20   | ASP  | 2.1  |
| 15  | AI    | 57   | VAL  | 2.1  |
| 31  | AY    | 57   | GLU  | 2.1  |
| 48  | BP    | 29   | ASN  | 2.1  |
| 24  | CR    | 92   | TRP  | 2.1  |
| 27  | CU    | 79   | ALA  | 2.1  |
| 34  | DB    | 147  | LEU  | 2.1  |
| 40  | BH    | 98   | LEU  | 2.1  |
| 33  | DA    | 1226 | C    | 2.1  |
| 39  | BG    | 83   | THR  | 2.1  |
| 10  | CD    | 104  | VAL  | 2.1  |
| 43  | DK    | 128  | VAL  | 2.1  |
| 47  | BO    | 16   | ARG  | 2.1  |
| 29  | CW    | 71   | LYS  | 2.1  |
| 34  | DB    | 67   | LEU  | 2.1  |
| 42  | BJ    | 69   | THR  | 2.1  |
| 46  | BN    | 44   | VAL  | 2.1  |
| 8   | AB    | 1730 | C    | 2.1  |
| 20  | AN    | 125  | ALA  | 2.1  |
| 51  | BS    | 28   | LYS  | 2.1  |
| 42  | BJ    | 5    | ARG  | 2.1  |
| 27  | CU    | 24   | VAL  | 2.1  |
| 46  | BN    | 54   | SER  | 2.1  |
| 24  | CR    | 1    | MET  | 2.1  |
| 27  | AU    | 42   | LYS  | 2.1  |
| 8   | AB    | 2153 | C    | 2.1  |
| 26  | CT    | 5    | GLU  | 2.1  |
| 37  | BE    | 31   | SER  | 2.1  |
| 39  | BG    | 152  | HIS  | 2.1  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 11  | CE    | 91   | ASP  | 2.1  |
| 27  | AU    | 93   | ARG  | 2.1  |
| 9   | CC    | 114  | GLN  | 2.1  |
| 15  | AI    | 5    | GLN  | 2.1  |
| 33  | BA    | 1025 | U    | 2.1  |
| 38  | DF    | 61   | LEU  | 2.1  |
| 14  | AH    | 112  | LYS  | 2.0  |
| 14  | CH    | 85   | GLY  | 2.1  |
| 35  | DC    | 108  | PRO  | 2.0  |
| 12  | AF    | 155  | ILE  | 2.0  |
| 13  | AG    | 12   | ALA  | 2.0  |
| 24  | CR    | 19   | THR  | 2.0  |
| 45  | DM    | 31   | ALA  | 2.0  |
| 26  | AT    | 6    | ARG  | 2.0  |
| 27  | CU    | 93   | ARG  | 2.0  |
| 11  | AE    | 41   | GLN  | 2.0  |
| 30  | CX    | 58   | ASN  | 2.0  |
| 2   | A1    | 36   | LYS  | 2.0  |
| 34  | BB    | 29   | PHE  | 2.0  |
| 45  | BM    | 65   | GLU  | 2.0  |
| 14  | AH    | 77   | THR  | 2.0  |
| 39  | DG    | 3    | ARG  | 2.0  |
| 34  | DB    | 69   | VAL  | 2.0  |
| 14  | AH    | 139  | PHE  | 2.0  |
| 10  | AD    | 192  | ALA  | 2.0  |
| 8   | AB    | 2146 | C    | 2.0  |
| 19  | AM    | 63   | ILE  | 2.0  |
| 45  | BM    | 3    | ILE  | 2.0  |
| 46  | DN    | 21   | ALA  | 2.0  |
| 37  | BE    | 119  | VAL  | 2.0  |
| 42  | BJ    | 87   | LEU  | 2.0  |
| 33  | BA    | 1030 | U    | 2.0  |
| 44  | BL    | 122  | LYS  | 2.0  |
| 1   | C0    | 55   | ALA  | 2.0  |
| 32  | AZ    | 5    | ILE  | 2.0  |
| 8   | AB    | 1420 | A    | 2.0  |
| 22  | AP    | 96   | LEU  | 2.0  |
| 41  | DI    | 66   | VAL  | 2.0  |
| 25  | CS    | 70   | LYS  | 2.0  |
| 52  | DT    | 47   | GLN  | 2.0  |
| 37  | BE    | 15   | ILE  | 2.0  |
| 46  | DN    | 29   | ILE  | 2.0  |

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| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 15  | AI    | 19   | PRO  | 2.0  |
| 15  | CI    | 9    | LYS  | 2.0  |
| 35  | DC    | 150  | VAL  | 2.0  |
| 18  | CL    | 107  | PHE  | 2.0  |
| 45  | BM    | 29   | SER  | 2.0  |
| 3   | A2    | 14   | ARG  | 2.0  |
| 27  | CU    | 17   | ASP  | 2.0  |
| 27  | AU    | 79   | ALA  | 2.0  |
| 4   | A3    | 63   | TYR  | 2.0  |
| 9   | AC    | 7    | PRO  | 2.0  |
| 8   | AB    | 2104 | C    | 2.0  |
| 31  | AY    | 33   | HIS  | 2.0  |
| 33  | DA    | 1119 | C    | 2.0  |
| 2   | C1    | 20   | TYR  | 2.0  |
| 35  | BC    | 133  | MET  | 2.0  |
| 37  | DE    | 116  | VAL  | 2.0  |
| 48  | BP    | 82   | ALA  | 2.0  |
| 3   | C2    | 41   | ARG  | 2.0  |
| 45  | DM    | 40   | GLU  | 2.0  |

## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | BA    | 4056 | 1/1   | 0.70 | 0.28 | 81,81,81,81                 | 0     |
| 54  | MG   | BA    | 4023 | 1/1   | 0.75 | 0.13 | 63,63,63,63                 | 1     |
| 54  | MG   | BA    | 4053 | 1/1   | 0.76 | 0.48 | 109,109,109,109             | 0     |
| 54  | MG   | DA    | 1612 | 1/1   | 0.76 | 0.44 | 81,81,81,81                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | BA    | 4054 | 1/1   | 0.79 | 1.05 | 90,90,90,90                 | 0     |
| 54  | MG   | CB    | 3108 | 1/1   | 0.81 | 0.55 | 53,53,53,53                 | 1     |
| 54  | MG   | DA    | 1610 | 1/1   | 0.82 | 0.17 | 48,48,48,48                 | 0     |
| 54  | MG   | CB    | 3080 | 1/1   | 0.82 | 0.36 | 55,55,55,55                 | 1     |
| 54  | MG   | CB    | 3038 | 1/1   | 0.83 | 0.15 | 58,58,58,58                 | 0     |
| 54  | MG   | DA    | 1608 | 1/1   | 0.84 | 0.30 | 41,41,41,41                 | 0     |
| 54  | MG   | AB    | 4050 | 1/1   | 0.85 | 0.33 | 49,49,49,49                 | 0     |
| 54  | MG   | DA    | 1626 | 1/1   | 0.85 | 0.24 | 11,11,11,11                 | 1     |
| 54  | MG   | BA    | 4028 | 1/1   | 0.86 | 0.20 | 61,61,61,61                 | 0     |
| 54  | MG   | BA    | 4002 | 1/1   | 0.88 | 0.46 | 86,86,86,86                 | 0     |
| 54  | MG   | CB    | 3094 | 1/1   | 0.89 | 0.14 | 16,16,16,16                 | 0     |
| 54  | MG   | BT    | 101  | 1/1   | 0.89 | 0.19 | 27,27,27,27                 | 0     |
| 54  | MG   | BA    | 4037 | 1/1   | 0.90 | 0.11 | 58,58,58,58                 | 0     |
| 54  | MG   | AB    | 4096 | 1/1   | 0.90 | 0.31 | 46,46,46,46                 | 0     |
| 54  | MG   | CB    | 3107 | 1/1   | 0.90 | 0.19 | 22,22,22,22                 | 0     |
| 54  | MG   | AB    | 4013 | 1/1   | 0.90 | 0.15 | 46,46,46,46                 | 0     |
| 54  | MG   | DA    | 1619 | 1/1   | 0.91 | 0.47 | 64,64,64,64                 | 0     |
| 54  | MG   | BA    | 4013 | 1/1   | 0.91 | 0.25 | 73,73,73,73                 | 0     |
| 54  | MG   | DA    | 1651 | 1/1   | 0.91 | 0.19 | 56,56,56,56                 | 0     |
| 54  | MG   | AB    | 4069 | 1/1   | 0.92 | 0.16 | 51,51,51,51                 | 0     |
| 54  | MG   | BA    | 4025 | 1/1   | 0.92 | 0.15 | 37,37,37,37                 | 0     |
| 54  | MG   | AB    | 4047 | 1/1   | 0.92 | 0.19 | 48,48,48,48                 | 0     |
| 54  | MG   | AB    | 4098 | 1/1   | 0.92 | 0.54 | 37,37,37,37                 | 0     |
| 54  | MG   | AB    | 4042 | 1/1   | 0.92 | 0.10 | 90,90,90,90                 | 0     |
| 54  | MG   | AB    | 4062 | 1/1   | 0.92 | 0.10 | 30,30,30,30                 | 0     |
| 54  | MG   | BA    | 4014 | 1/1   | 0.92 | 0.11 | 44,44,44,44                 | 0     |
| 54  | MG   | BA    | 4017 | 1/1   | 0.92 | 0.15 | 42,42,42,42                 | 0     |
| 54  | MG   | BA    | 4021 | 1/1   | 0.92 | 0.28 | 28,28,28,28                 | 1     |
| 54  | MG   | DA    | 1632 | 1/1   | 0.92 | 0.45 | 90,90,90,90                 | 0     |
| 54  | MG   | DA    | 1634 | 1/1   | 0.92 | 0.32 | 110,110,110,110             | 0     |
| 54  | MG   | DA    | 1636 | 1/1   | 0.92 | 0.07 | 43,43,43,43                 | 0     |
| 54  | MG   | CB    | 3050 | 1/1   | 0.92 | 0.08 | 45,45,45,45                 | 0     |
| 54  | MG   | DA    | 1659 | 1/1   | 0.92 | 0.25 | 85,85,85,85                 | 0     |
| 54  | MG   | CB    | 3076 | 1/1   | 0.93 | 0.28 | 15,15,15,15                 | 0     |
| 54  | MG   | BA    | 4027 | 1/1   | 0.93 | 0.29 | 68,68,68,68                 | 0     |
| 54  | MG   | DA    | 1624 | 1/1   | 0.93 | 0.38 | 57,57,57,57                 | 0     |
| 54  | MG   | AB    | 4023 | 1/1   | 0.93 | 0.20 | 66,66,66,66                 | 0     |
| 54  | MG   | DA    | 1628 | 1/1   | 0.93 | 0.27 | 33,33,33,33                 | 1     |
| 54  | MG   | BA    | 4057 | 1/1   | 0.93 | 0.08 | 29,29,29,29                 | 0     |
| 54  | MG   | AB    | 4036 | 1/1   | 0.93 | 0.09 | 12,12,12,12                 | 0     |
| 54  | MG   | DA    | 1607 | 1/1   | 0.93 | 0.20 | 54,54,54,54                 | 0     |
| 54  | MG   | BA    | 4043 | 1/1   | 0.93 | 0.59 | 25,25,25,25                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | BA    | 4011 | 1/1   | 0.93 | 0.07 | 56,56,56,56                 | 0     |
| 54  | MG   | BA    | 4036 | 1/1   | 0.94 | 0.09 | 5,5,5,5                     | 0     |
| 54  | MG   | CB    | 3010 | 1/1   | 0.94 | 0.16 | 30,30,30,30                 | 0     |
| 54  | MG   | CB    | 3029 | 1/1   | 0.94 | 0.15 | 39,39,39,39                 | 0     |
| 54  | MG   | AB    | 4078 | 1/1   | 0.94 | 0.10 | 35,35,35,35                 | 0     |
| 54  | MG   | DA    | 1613 | 1/1   | 0.94 | 0.20 | 62,62,62,62                 | 0     |
| 54  | MG   | AB    | 4088 | 1/1   | 0.94 | 0.12 | 24,24,24,24                 | 0     |
| 54  | MG   | BA    | 4046 | 1/1   | 0.94 | 0.26 | 62,62,62,62                 | 0     |
| 54  | MG   | DA    | 1625 | 1/1   | 0.94 | 0.17 | 37,37,37,37                 | 1     |
| 54  | MG   | CB    | 3079 | 1/1   | 0.94 | 0.16 | 54,54,54,54                 | 0     |
| 54  | MG   | BA    | 4020 | 1/1   | 0.94 | 0.37 | 77,77,77,77                 | 0     |
| 54  | MG   | AB    | 4109 | 1/1   | 0.94 | 0.16 | 34,34,34,34                 | 0     |
| 54  | MG   | CB    | 3099 | 1/1   | 0.94 | 0.36 | 43,43,43,43                 | 0     |
| 54  | MG   | BA    | 4029 | 1/1   | 0.94 | 0.10 | 44,44,44,44                 | 0     |
| 54  | MG   | DA    | 1640 | 1/1   | 0.94 | 0.19 | 17,17,17,17                 | 0     |
| 54  | MG   | DA    | 1644 | 1/1   | 0.94 | 0.34 | 53,53,53,53                 | 0     |
| 54  | MG   | BA    | 4034 | 1/1   | 0.94 | 0.18 | 48,48,48,48                 | 0     |
| 54  | MG   | CL    | 201  | 1/1   | 0.94 | 0.08 | 43,43,43,43                 | 0     |
| 54  | MG   | CB    | 3100 | 1/1   | 0.95 | 0.12 | 43,43,43,43                 | 0     |
| 54  | MG   | CB    | 3106 | 1/1   | 0.95 | 0.19 | 20,20,20,20                 | 0     |
| 54  | MG   | AB    | 4092 | 1/1   | 0.95 | 0.64 | 27,27,27,27                 | 1     |
| 54  | MG   | AB    | 4095 | 1/1   | 0.95 | 0.15 | 47,47,47,47                 | 0     |
| 54  | MG   | AB    | 4045 | 1/1   | 0.95 | 0.08 | 51,51,51,51                 | 0     |
| 54  | MG   | BA    | 4024 | 1/1   | 0.95 | 0.21 | 32,32,32,32                 | 1     |
| 54  | MG   | AB    | 4022 | 1/1   | 0.95 | 0.27 | 11,11,11,11                 | 0     |
| 54  | MG   | DA    | 1609 | 1/1   | 0.95 | 0.15 | 56,56,56,56                 | 0     |
| 54  | MG   | CB    | 3009 | 1/1   | 0.95 | 0.11 | 13,13,13,13                 | 0     |
| 54  | MG   | DA    | 1611 | 1/1   | 0.95 | 0.18 | 51,51,51,51                 | 0     |
| 54  | MG   | BA    | 4026 | 1/1   | 0.95 | 0.15 | 75,75,75,75                 | 0     |
| 54  | MG   | CB    | 3026 | 1/1   | 0.95 | 0.11 | 10,10,10,10                 | 0     |
| 54  | MG   | AB    | 4107 | 1/1   | 0.95 | 0.10 | 6,6,6,6                     | 0     |
| 54  | MG   | CB    | 3037 | 1/1   | 0.95 | 0.14 | 10,10,10,10                 | 0     |
| 54  | MG   | AB    | 4007 | 1/1   | 0.95 | 0.11 | 37,37,37,37                 | 0     |
| 54  | MG   | CB    | 3043 | 1/1   | 0.95 | 0.06 | 69,69,69,69                 | 0     |
| 54  | MG   | CB    | 3049 | 1/1   | 0.95 | 0.17 | 30,30,30,30                 | 1     |
| 54  | MG   | DA    | 1630 | 1/1   | 0.95 | 0.07 | 29,29,29,29                 | 0     |
| 54  | MG   | AB    | 4031 | 1/1   | 0.95 | 0.19 | 56,56,56,56                 | 0     |
| 54  | MG   | BA    | 4008 | 1/1   | 0.95 | 0.12 | 21,21,21,21                 | 0     |
| 54  | MG   | AB    | 4034 | 1/1   | 0.95 | 0.25 | 51,51,51,51                 | 0     |
| 54  | MG   | AB    | 4012 | 1/1   | 0.95 | 0.09 | 44,44,44,44                 | 0     |
| 54  | MG   | CB    | 3092 | 1/1   | 0.95 | 0.12 | 7,7,7,7                     | 0     |
| 54  | MG   | AB    | 4003 | 1/1   | 0.95 | 0.14 | 26,26,26,26                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | DA    | 1653 | 1/1   | 0.95 | 0.15 | 21,21,21,21                 | 0     |
| 54  | MG   | AB    | 4090 | 1/1   | 0.95 | 0.20 | 37,37,37,37                 | 0     |
| 54  | MG   | CB    | 3095 | 1/1   | 0.96 | 0.15 | 22,22,22,22                 | 0     |
| 54  | MG   | AB    | 4009 | 1/1   | 0.96 | 0.11 | 58,58,58,58                 | 0     |
| 54  | MG   | AB    | 4061 | 1/1   | 0.96 | 0.15 | 35,35,35,35                 | 0     |
| 54  | MG   | CB    | 3103 | 1/1   | 0.96 | 0.28 | 10,10,10,10                 | 0     |
| 54  | MG   | AB    | 4046 | 1/1   | 0.96 | 0.07 | 26,26,26,26                 | 0     |
| 54  | MG   | CB    | 3005 | 1/1   | 0.96 | 0.12 | 26,26,26,26                 | 0     |
| 54  | MG   | CB    | 3006 | 1/1   | 0.96 | 0.09 | 19,19,19,19                 | 0     |
| 54  | MG   | AB    | 4093 | 1/1   | 0.96 | 0.08 | 4,4,4,4                     | 0     |
| 54  | MG   | BA    | 4012 | 1/1   | 0.96 | 0.20 | 54,54,54,54                 | 0     |
| 54  | MG   | CB    | 3014 | 1/1   | 0.96 | 0.20 | 33,33,33,33                 | 0     |
| 54  | MG   | BA    | 4033 | 1/1   | 0.96 | 0.22 | 90,90,90,90                 | 0     |
| 54  | MG   | AB    | 4064 | 1/1   | 0.96 | 0.12 | 43,43,43,43                 | 0     |
| 54  | MG   | BA    | 4035 | 1/1   | 0.96 | 0.45 | 30,30,30,30                 | 0     |
| 54  | MG   | AB    | 4025 | 1/1   | 0.96 | 0.22 | 129,129,129,129             | 0     |
| 54  | MG   | CB    | 3040 | 1/1   | 0.96 | 0.27 | 46,46,46,46                 | 0     |
| 54  | MG   | DA    | 1618 | 1/1   | 0.96 | 0.12 | 30,30,30,30                 | 0     |
| 54  | MG   | AB    | 4097 | 1/1   | 0.96 | 0.21 | 17,17,17,17                 | 0     |
| 54  | MG   | BA    | 4038 | 1/1   | 0.96 | 0.10 | 50,50,50,50                 | 0     |
| 54  | MG   | BA    | 4039 | 1/1   | 0.96 | 0.23 | 31,31,31,31                 | 0     |
| 54  | MG   | CB    | 3070 | 1/1   | 0.96 | 0.36 | 33,33,33,33                 | 0     |
| 54  | MG   | CB    | 3071 | 1/1   | 0.96 | 0.23 | 52,52,52,52                 | 0     |
| 54  | MG   | CB    | 3074 | 1/1   | 0.96 | 0.10 | 33,33,33,33                 | 0     |
| 54  | MG   | AB    | 4077 | 1/1   | 0.96 | 0.28 | 28,28,28,28                 | 0     |
| 54  | MG   | CB    | 3077 | 1/1   | 0.96 | 0.13 | 76,76,76,76                 | 0     |
| 54  | MG   | CB    | 3078 | 1/1   | 0.96 | 0.12 | 57,57,57,57                 | 0     |
| 54  | MG   | BA    | 4044 | 1/1   | 0.96 | 0.16 | 86,86,86,86                 | 0     |
| 54  | MG   | DA    | 1641 | 1/1   | 0.96 | 0.06 | 63,63,63,63                 | 0     |
| 54  | MG   | AB    | 4101 | 1/1   | 0.96 | 0.12 | 25,25,25,25                 | 0     |
| 54  | MG   | CB    | 3087 | 1/1   | 0.96 | 0.28 | 25,25,25,25                 | 0     |
| 54  | MG   | AB    | 4103 | 1/1   | 0.96 | 0.20 | 13,13,13,13                 | 0     |
| 54  | MG   | AB    | 4048 | 1/1   | 0.96 | 0.19 | 22,22,22,22                 | 0     |
| 54  | MG   | DN    | 201  | 1/1   | 0.96 | 0.12 | 48,48,48,48                 | 0     |
| 54  | MG   | CB    | 3066 | 1/1   | 0.97 | 0.14 | 45,45,45,45                 | 0     |
| 54  | MG   | CB    | 3068 | 1/1   | 0.97 | 0.11 | 59,59,59,59                 | 0     |
| 54  | MG   | BA    | 4042 | 1/1   | 0.97 | 0.19 | 69,69,69,69                 | 0     |
| 54  | MG   | AB    | 4057 | 1/1   | 0.97 | 0.23 | 49,49,49,49                 | 0     |
| 54  | MG   | CB    | 3072 | 1/1   | 0.97 | 0.19 | 42,42,42,42                 | 0     |
| 54  | MG   | AB    | 4021 | 1/1   | 0.97 | 0.12 | 33,33,33,33                 | 0     |
| 54  | MG   | AB    | 4094 | 1/1   | 0.97 | 0.06 | 15,15,15,15                 | 0     |
| 54  | MG   | BA    | 4048 | 1/1   | 0.97 | 0.05 | 73,73,73,73                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | BA    | 4049 | 1/1   | 0.97 | 0.17 | 100,100,100,100             | 0     |
| 54  | MG   | BA    | 4050 | 1/1   | 0.97 | 0.11 | 51,51,51,51                 | 0     |
| 54  | MG   | BA    | 4052 | 1/1   | 0.97 | 0.11 | 33,33,33,33                 | 0     |
| 54  | MG   | CB    | 3081 | 1/1   | 0.97 | 0.15 | 10,10,10,10                 | 0     |
| 54  | MG   | CB    | 3082 | 1/1   | 0.97 | 0.20 | 17,17,17,17                 | 0     |
| 54  | MG   | BA    | 4018 | 1/1   | 0.97 | 0.09 | 64,64,64,64                 | 0     |
| 54  | MG   | CB    | 3089 | 1/1   | 0.97 | 0.14 | 38,38,38,38                 | 0     |
| 54  | MG   | AB    | 4027 | 1/1   | 0.97 | 0.15 | 22,22,22,22                 | 0     |
| 54  | MG   | CB    | 3093 | 1/1   | 0.97 | 0.17 | 3,3,3,3                     | 0     |
| 54  | MG   | AB    | 4029 | 1/1   | 0.97 | 0.19 | 55,55,55,55                 | 0     |
| 54  | MG   | AB    | 4067 | 1/1   | 0.97 | 0.07 | 31,31,31,31                 | 0     |
| 54  | MG   | BN    | 201  | 1/1   | 0.97 | 0.20 | 61,61,61,61                 | 0     |
| 54  | MG   | AB    | 4008 | 1/1   | 0.97 | 0.08 | 38,38,38,38                 | 0     |
| 54  | MG   | AB    | 4099 | 1/1   | 0.97 | 0.21 | 12,12,12,12                 | 1     |
| 54  | MG   | CB    | 3104 | 1/1   | 0.97 | 0.39 | 6,6,6,6                     | 0     |
| 54  | MG   | AB    | 4075 | 1/1   | 0.97 | 0.17 | 41,41,41,41                 | 0     |
| 54  | MG   | AB    | 4001 | 1/1   | 0.97 | 0.07 | 5,5,5,5                     | 0     |
| 54  | MG   | AB    | 4024 | 1/1   | 0.97 | 0.13 | 54,54,54,54                 | 0     |
| 54  | MG   | AB    | 4108 | 1/1   | 0.97 | 0.14 | 9,9,9,9                     | 0     |
| 54  | MG   | DA    | 1602 | 1/1   | 0.97 | 0.09 | 13,13,13,13                 | 0     |
| 54  | MG   | DA    | 1605 | 1/1   | 0.97 | 0.13 | 76,76,76,76                 | 0     |
| 54  | MG   | DA    | 1606 | 1/1   | 0.97 | 0.09 | 18,18,18,18                 | 0     |
| 54  | MG   | CB    | 3020 | 1/1   | 0.97 | 0.16 | 8,8,8,8                     | 0     |
| 54  | MG   | CB    | 3021 | 1/1   | 0.97 | 0.05 | 22,22,22,22                 | 0     |
| 54  | MG   | CB    | 3022 | 1/1   | 0.97 | 0.07 | 21,21,21,21                 | 0     |
| 54  | MG   | CB    | 3025 | 1/1   | 0.97 | 0.12 | 27,27,27,27                 | 0     |
| 54  | MG   | BA    | 4030 | 1/1   | 0.97 | 0.41 | 34,34,34,34                 | 0     |
| 54  | MG   | AB    | 4083 | 1/1   | 0.97 | 0.14 | 29,29,29,29                 | 0     |
| 54  | MG   | CB    | 3030 | 1/1   | 0.97 | 0.19 | 17,17,17,17                 | 0     |
| 54  | MG   | CB    | 3032 | 1/1   | 0.97 | 0.25 | 52,52,52,52                 | 0     |
| 54  | MG   | CB    | 3033 | 1/1   | 0.97 | 0.12 | 33,33,33,33                 | 0     |
| 54  | MG   | CB    | 3034 | 1/1   | 0.97 | 0.09 | 7,7,7,7                     | 0     |
| 54  | MG   | BA    | 4001 | 1/1   | 0.97 | 0.14 | 69,69,69,69                 | 0     |
| 54  | MG   | AB    | 4084 | 1/1   | 0.97 | 0.08 | 21,21,21,21                 | 0     |
| 54  | MG   | DA    | 1627 | 1/1   | 0.97 | 0.16 | 51,51,51,51                 | 0     |
| 54  | MG   | BA    | 4004 | 1/1   | 0.97 | 0.12 | 34,34,34,34                 | 0     |
| 54  | MG   | DA    | 1629 | 1/1   | 0.97 | 0.29 | 52,52,52,52                 | 0     |
| 54  | MG   | CB    | 3041 | 1/1   | 0.97 | 0.18 | 19,19,19,19                 | 0     |
| 54  | MG   | AB    | 4053 | 1/1   | 0.97 | 0.11 | 14,14,14,14                 | 0     |
| 54  | MG   | AB    | 4055 | 1/1   | 0.97 | 0.08 | 68,68,68,68                 | 0     |
| 54  | MG   | AB    | 4091 | 1/1   | 0.97 | 0.31 | 34,34,34,34                 | 0     |
| 54  | MG   | DA    | 1637 | 1/1   | 0.97 | 0.20 | 109,109,109,109             | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | CB    | 3052 | 1/1   | 0.97 | 0.22 | 43,43,43,43                 | 0     |
| 54  | MG   | CB    | 3053 | 1/1   | 0.97 | 0.11 | 5,5,5,5                     | 0     |
| 54  | MG   | CB    | 3059 | 1/1   | 0.97 | 0.10 | 12,12,12,12                 | 0     |
| 54  | MG   | DA    | 1645 | 1/1   | 0.97 | 0.13 | 56,56,56,56                 | 0     |
| 54  | MG   | DA    | 1647 | 1/1   | 0.97 | 0.15 | 30,30,30,30                 | 0     |
| 54  | MG   | CB    | 3060 | 1/1   | 0.97 | 0.16 | 78,78,78,78                 | 0     |
| 54  | MG   | CB    | 3061 | 1/1   | 0.97 | 0.09 | 31,31,31,31                 | 0     |
| 54  | MG   | CB    | 3063 | 1/1   | 0.97 | 0.12 | 11,11,11,11                 | 0     |
| 54  | MG   | DA    | 1660 | 1/1   | 0.97 | 0.23 | 14,14,14,14                 | 0     |
| 54  | MG   | DA    | 1661 | 1/1   | 0.97 | 0.10 | 13,13,13,13                 | 0     |
| 54  | MG   | CB    | 3065 | 1/1   | 0.97 | 0.08 | 26,26,26,26                 | 0     |
| 54  | MG   | CB    | 3011 | 1/1   | 0.98 | 0.11 | 33,33,33,33                 | 0     |
| 54  | MG   | CB    | 3012 | 1/1   | 0.98 | 0.08 | 10,10,10,10                 | 0     |
| 54  | MG   | AB    | 4018 | 1/1   | 0.98 | 0.06 | 32,32,32,32                 | 0     |
| 54  | MG   | CB    | 3015 | 1/1   | 0.98 | 0.17 | 9,9,9,9                     | 0     |
| 54  | MG   | CB    | 3084 | 1/1   | 0.98 | 0.12 | 24,24,24,24                 | 0     |
| 54  | MG   | CB    | 3018 | 1/1   | 0.98 | 0.16 | 25,25,25,25                 | 0     |
| 54  | MG   | CB    | 3019 | 1/1   | 0.98 | 0.15 | 11,11,11,11                 | 0     |
| 54  | MG   | CB    | 3090 | 1/1   | 0.98 | 0.09 | 67,67,67,67                 | 0     |
| 54  | MG   | CB    | 3091 | 1/1   | 0.98 | 0.12 | 42,42,42,42                 | 0     |
| 54  | MG   | BA    | 4032 | 1/1   | 0.98 | 0.13 | 27,27,27,27                 | 0     |
| 54  | MG   | AB    | 4080 | 1/1   | 0.98 | 0.11 | 17,17,17,17                 | 0     |
| 54  | MG   | AE    | 301  | 1/1   | 0.98 | 0.20 | 10,10,10,10                 | 0     |
| 54  | MG   | CB    | 3023 | 1/1   | 0.98 | 0.14 | 7,7,7,7                     | 0     |
| 54  | MG   | CB    | 3096 | 1/1   | 0.98 | 0.24 | 38,38,38,38                 | 0     |
| 54  | MG   | CB    | 3097 | 1/1   | 0.98 | 0.06 | 9,9,9,9                     | 0     |
| 54  | MG   | CB    | 3098 | 1/1   | 0.98 | 0.06 | 7,7,7,7                     | 0     |
| 54  | MG   | CB    | 3024 | 1/1   | 0.98 | 0.07 | 21,21,21,21                 | 0     |
| 54  | MG   | AB    | 4037 | 1/1   | 0.98 | 0.09 | 25,25,25,25                 | 0     |
| 54  | MG   | CB    | 3102 | 1/1   | 0.98 | 0.12 | 17,17,17,17                 | 0     |
| 54  | MG   | AB    | 4038 | 1/1   | 0.98 | 0.09 | 30,30,30,30                 | 0     |
| 54  | MG   | AB    | 4085 | 1/1   | 0.98 | 0.24 | 53,53,53,53                 | 0     |
| 54  | MG   | BA    | 4006 | 1/1   | 0.98 | 0.14 | 42,42,42,42                 | 0     |
| 54  | MG   | BA    | 4007 | 1/1   | 0.98 | 0.52 | 81,81,81,81                 | 0     |
| 54  | MG   | BA    | 4040 | 1/1   | 0.98 | 0.08 | 49,49,49,49                 | 0     |
| 54  | MG   | CB    | 3109 | 1/1   | 0.98 | 0.08 | 16,16,16,16                 | 0     |
| 54  | MG   | BA    | 4041 | 1/1   | 0.98 | 0.09 | 54,54,54,54                 | 0     |
| 54  | MG   | DA    | 1601 | 1/1   | 0.98 | 0.07 | 28,28,28,28                 | 0     |
| 54  | MG   | CB    | 3035 | 1/1   | 0.98 | 0.11 | 20,20,20,20                 | 0     |
| 54  | MG   | DA    | 1604 | 1/1   | 0.98 | 0.15 | 35,35,35,35                 | 0     |
| 54  | MG   | CB    | 3036 | 1/1   | 0.98 | 0.30 | 19,19,19,19                 | 0     |
| 54  | MG   | AB    | 4087 | 1/1   | 0.98 | 0.14 | 38,38,38,38                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | AB    | 4058 | 1/1   | 0.98 | 0.12 | 20,20,20,20                 | 0     |
| 54  | MG   | CB    | 3039 | 1/1   | 0.98 | 0.13 | 27,27,27,27                 | 0     |
| 54  | MG   | AB    | 4059 | 1/1   | 0.98 | 0.11 | 55,55,55,55                 | 0     |
| 54  | MG   | AB    | 4005 | 1/1   | 0.98 | 0.16 | 11,11,11,11                 | 0     |
| 54  | MG   | CB    | 3042 | 1/1   | 0.98 | 0.12 | 18,18,18,18                 | 0     |
| 54  | MG   | BA    | 4047 | 1/1   | 0.98 | 0.09 | 29,29,29,29                 | 0     |
| 54  | MG   | CB    | 3045 | 1/1   | 0.98 | 0.25 | 67,67,67,67                 | 0     |
| 54  | MG   | DA    | 1614 | 1/1   | 0.98 | 0.13 | 25,25,25,25                 | 0     |
| 54  | MG   | DA    | 1616 | 1/1   | 0.98 | 0.12 | 21,21,21,21                 | 0     |
| 54  | MG   | AB    | 4044 | 1/1   | 0.98 | 0.04 | 17,17,17,17                 | 0     |
| 54  | MG   | BA    | 4015 | 1/1   | 0.98 | 0.08 | 59,59,59,59                 | 0     |
| 54  | MG   | DA    | 1620 | 1/1   | 0.98 | 0.10 | 19,19,19,19                 | 0     |
| 54  | MG   | DA    | 1621 | 1/1   | 0.98 | 0.11 | 18,18,18,18                 | 0     |
| 54  | MG   | CB    | 3051 | 1/1   | 0.98 | 0.23 | 12,12,12,12                 | 0     |
| 54  | MG   | AB    | 4002 | 1/1   | 0.98 | 0.13 | 27,27,27,27                 | 0     |
| 54  | MG   | AB    | 4032 | 1/1   | 0.98 | 0.09 | 35,35,35,35                 | 0     |
| 54  | MG   | CB    | 3056 | 1/1   | 0.98 | 0.15 | 8,8,8,8                     | 0     |
| 54  | MG   | CB    | 3057 | 1/1   | 0.98 | 0.14 | 7,7,7,7                     | 0     |
| 54  | MG   | CB    | 3058 | 1/1   | 0.98 | 0.07 | 31,31,31,31                 | 0     |
| 54  | MG   | BA    | 4019 | 1/1   | 0.98 | 0.26 | 11,11,11,11                 | 0     |
| 54  | MG   | AB    | 4068 | 1/1   | 0.98 | 0.06 | 21,21,21,21                 | 0     |
| 54  | MG   | AB    | 4033 | 1/1   | 0.98 | 0.12 | 52,52,52,52                 | 0     |
| 54  | MG   | DA    | 1635 | 1/1   | 0.98 | 0.16 | 41,41,41,41                 | 0     |
| 54  | MG   | AB    | 4071 | 1/1   | 0.98 | 0.18 | 29,29,29,29                 | 0     |
| 54  | MG   | CB    | 3064 | 1/1   | 0.98 | 0.13 | 63,63,63,63                 | 0     |
| 54  | MG   | DA    | 1639 | 1/1   | 0.98 | 0.08 | 79,79,79,79                 | 0     |
| 54  | MG   | BA    | 4058 | 1/1   | 0.98 | 0.10 | 78,78,78,78                 | 0     |
| 54  | MG   | AB    | 4072 | 1/1   | 0.98 | 0.10 | 44,44,44,44                 | 0     |
| 54  | MG   | AB    | 4073 | 1/1   | 0.98 | 0.18 | 21,21,21,21                 | 0     |
| 54  | MG   | CB    | 3001 | 1/1   | 0.98 | 0.05 | 9,9,9,9                     | 0     |
| 54  | MG   | CB    | 3004 | 1/1   | 0.98 | 0.12 | 9,9,9,9                     | 0     |
| 54  | MG   | DA    | 1648 | 1/1   | 0.98 | 0.09 | 43,43,43,43                 | 0     |
| 54  | MG   | DA    | 1649 | 1/1   | 0.98 | 0.11 | 45,45,45,45                 | 0     |
| 54  | MG   | DA    | 1650 | 1/1   | 0.98 | 0.09 | 48,48,48,48                 | 0     |
| 54  | MG   | AB    | 4074 | 1/1   | 0.98 | 0.17 | 50,50,50,50                 | 0     |
| 54  | MG   | AB    | 4026 | 1/1   | 0.98 | 0.12 | 78,78,78,78                 | 0     |
| 54  | MG   | DA    | 1654 | 1/1   | 0.98 | 0.05 | 13,13,13,13                 | 0     |
| 54  | MG   | DA    | 1657 | 1/1   | 0.98 | 0.52 | 63,63,63,63                 | 0     |
| 54  | MG   | DA    | 1658 | 1/1   | 0.98 | 0.44 | 47,47,47,47                 | 0     |
| 54  | MG   | CB    | 3075 | 1/1   | 0.98 | 0.12 | 61,61,61,61                 | 0     |
| 54  | MG   | CB    | 3008 | 1/1   | 0.98 | 0.14 | 16,16,16,16                 | 0     |
| 54  | MG   | AB    | 4105 | 1/1   | 0.98 | 0.11 | 33,33,33,33                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | AB    | 4035 | 1/1   | 0.98 | 0.07 | 39,39,39,39                 | 0     |
| 54  | MG   | BA    | 4031 | 1/1   | 0.99 | 0.26 | 40,40,40,40                 | 0     |
| 54  | MG   | AB    | 4100 | 1/1   | 0.99 | 0.12 | 25,25,25,25                 | 0     |
| 54  | MG   | AB    | 4028 | 1/1   | 0.99 | 0.13 | 16,16,16,16                 | 0     |
| 54  | MG   | AB    | 4102 | 1/1   | 0.99 | 0.10 | 63,63,63,63                 | 0     |
| 54  | MG   | AB    | 4070 | 1/1   | 0.99 | 0.09 | 20,20,20,20                 | 0     |
| 54  | MG   | CB    | 3027 | 1/1   | 0.99 | 0.15 | 40,40,40,40                 | 0     |
| 54  | MG   | CB    | 3028 | 1/1   | 0.99 | 0.27 | 46,46,46,46                 | 0     |
| 54  | MG   | AB    | 4104 | 1/1   | 0.99 | 0.12 | 26,26,26,26                 | 0     |
| 54  | MG   | AB    | 4010 | 1/1   | 0.99 | 0.11 | 32,32,32,32                 | 0     |
| 54  | MG   | CB    | 3031 | 1/1   | 0.99 | 0.11 | 55,55,55,55                 | 0     |
| 54  | MG   | AB    | 4106 | 1/1   | 0.99 | 0.06 | 9,9,9,9                     | 0     |
| 54  | MG   | CB    | 3101 | 1/1   | 0.99 | 0.25 | 8,8,8,8                     | 0     |
| 54  | MG   | AB    | 4030 | 1/1   | 0.99 | 0.04 | 34,34,34,34                 | 0     |
| 54  | MG   | AB    | 4019 | 1/1   | 0.99 | 0.07 | 29,29,29,29                 | 0     |
| 54  | MG   | AB    | 4020 | 1/1   | 0.99 | 0.47 | 67,67,67,67                 | 0     |
| 54  | MG   | CB    | 3105 | 1/1   | 0.99 | 0.11 | 20,20,20,20                 | 0     |
| 54  | MG   | AB    | 4049 | 1/1   | 0.99 | 0.21 | 21,21,21,21                 | 0     |
| 54  | MG   | AB    | 4076 | 1/1   | 0.99 | 0.26 | 23,23,23,23                 | 0     |
| 54  | MG   | AB    | 4011 | 1/1   | 0.99 | 0.20 | 45,45,45,45                 | 0     |
| 54  | MG   | BA    | 4045 | 1/1   | 0.99 | 0.11 | 59,59,59,59                 | 0     |
| 54  | MG   | CC    | 301  | 1/1   | 0.99 | 0.12 | 89,89,89,89                 | 0     |
| 54  | MG   | BA    | 4003 | 1/1   | 0.99 | 0.21 | 29,29,29,29                 | 0     |
| 54  | MG   | AB    | 4051 | 1/1   | 0.99 | 0.06 | 7,7,7,7                     | 0     |
| 54  | MG   | BA    | 4005 | 1/1   | 0.99 | 0.23 | 59,59,59,59                 | 0     |
| 54  | MG   | DA    | 1603 | 1/1   | 0.99 | 0.07 | 22,22,22,22                 | 0     |
| 54  | MG   | AB    | 4079 | 1/1   | 0.99 | 0.18 | 43,43,43,43                 | 0     |
| 54  | MG   | AB    | 4052 | 1/1   | 0.99 | 0.06 | 25,25,25,25                 | 0     |
| 54  | MG   | CB    | 3046 | 1/1   | 0.99 | 0.11 | 29,29,29,29                 | 0     |
| 54  | MG   | CB    | 3047 | 1/1   | 0.99 | 0.07 | 10,10,10,10                 | 0     |
| 54  | MG   | CB    | 3048 | 1/1   | 0.99 | 0.13 | 4,4,4,4                     | 0     |
| 54  | MG   | BA    | 4051 | 1/1   | 0.99 | 0.15 | 79,79,79,79                 | 0     |
| 54  | MG   | AB    | 4081 | 1/1   | 0.99 | 0.11 | 60,60,60,60                 | 0     |
| 54  | MG   | BA    | 4009 | 1/1   | 0.99 | 0.11 | 34,34,34,34                 | 0     |
| 54  | MG   | BA    | 4010 | 1/1   | 0.99 | 0.04 | 17,17,17,17                 | 0     |
| 54  | MG   | BA    | 4055 | 1/1   | 0.99 | 0.16 | 27,27,27,27                 | 0     |
| 54  | MG   | CB    | 3054 | 1/1   | 0.99 | 0.21 | 13,13,13,13                 | 0     |
| 54  | MG   | DA    | 1615 | 1/1   | 0.99 | 0.12 | 95,95,95,95                 | 0     |
| 54  | MG   | CB    | 3055 | 1/1   | 0.99 | 0.10 | 5,5,5,5                     | 0     |
| 54  | MG   | DA    | 1617 | 1/1   | 0.99 | 0.07 | 10,10,10,10                 | 0     |
| 54  | MG   | AB    | 4082 | 1/1   | 0.99 | 0.25 | 50,50,50,50                 | 0     |
| 54  | MG   | AB    | 4006 | 1/1   | 0.99 | 0.13 | 12,12,12,12                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | AB    | 4004 | 1/1   | 0.99 | 0.07 | 41,41,41,41                 | 0     |
| 54  | MG   | AB    | 4056 | 1/1   | 0.99 | 0.26 | 9,9,9,9                     | 0     |
| 54  | MG   | DA    | 1622 | 1/1   | 0.99 | 0.25 | 27,27,27,27                 | 0     |
| 54  | MG   | DA    | 1623 | 1/1   | 0.99 | 0.24 | 20,20,20,20                 | 0     |
| 54  | MG   | AB    | 4086 | 1/1   | 0.99 | 0.12 | 39,39,39,39                 | 0     |
| 54  | MG   | BA    | 4016 | 1/1   | 0.99 | 0.07 | 47,47,47,47                 | 0     |
| 54  | MG   | CB    | 3062 | 1/1   | 0.99 | 0.07 | 7,7,7,7                     | 0     |
| 54  | MG   | CB    | 3002 | 1/1   | 0.99 | 0.08 | 54,54,54,54                 | 0     |
| 54  | MG   | CB    | 3003 | 1/1   | 0.99 | 0.07 | 8,8,8,8                     | 0     |
| 54  | MG   | AB    | 4014 | 1/1   | 0.99 | 0.17 | 18,18,18,18                 | 0     |
| 54  | MG   | AB    | 4015 | 1/1   | 0.99 | 0.06 | 3,3,3,3                     | 0     |
| 54  | MG   | DA    | 1631 | 1/1   | 0.99 | 0.07 | 22,22,22,22                 | 0     |
| 54  | MG   | CB    | 3067 | 1/1   | 0.99 | 0.21 | 9,9,9,9                     | 0     |
| 54  | MG   | DA    | 1633 | 1/1   | 0.99 | 0.09 | 3,3,3,3                     | 0     |
| 54  | MG   | AB    | 4089 | 1/1   | 0.99 | 0.08 | 31,31,31,31                 | 0     |
| 54  | MG   | CB    | 3069 | 1/1   | 0.99 | 0.14 | 10,10,10,10                 | 0     |
| 54  | MG   | CB    | 3007 | 1/1   | 0.99 | 0.13 | 25,25,25,25                 | 0     |
| 54  | MG   | AB    | 4016 | 1/1   | 0.99 | 0.18 | 68,68,68,68                 | 0     |
| 54  | MG   | DA    | 1638 | 1/1   | 0.99 | 0.16 | 12,12,12,12                 | 0     |
| 54  | MG   | AB    | 4060 | 1/1   | 0.99 | 0.18 | 36,36,36,36                 | 0     |
| 54  | MG   | CB    | 3073 | 1/1   | 0.99 | 0.17 | 14,14,14,14                 | 0     |
| 54  | MG   | BA    | 4022 | 1/1   | 0.99 | 0.16 | 14,14,14,14                 | 0     |
| 54  | MG   | DA    | 1643 | 1/1   | 0.99 | 0.09 | 70,70,70,70                 | 0     |
| 54  | MG   | AB    | 4039 | 1/1   | 0.99 | 0.06 | 25,25,25,25                 | 0     |
| 54  | MG   | AB    | 4040 | 1/1   | 0.99 | 0.13 | 77,77,77,77                 | 0     |
| 54  | MG   | DA    | 1646 | 1/1   | 0.99 | 0.11 | 50,50,50,50                 | 0     |
| 54  | MG   | CB    | 3013 | 1/1   | 0.99 | 0.07 | 14,14,14,14                 | 0     |
| 54  | MG   | AB    | 4063 | 1/1   | 0.99 | 0.20 | 16,16,16,16                 | 0     |
| 54  | MG   | AB    | 4041 | 1/1   | 0.99 | 0.07 | 11,11,11,11                 | 0     |
| 54  | MG   | CB    | 3016 | 1/1   | 0.99 | 0.04 | 18,18,18,18                 | 0     |
| 54  | MG   | CB    | 3017 | 1/1   | 0.99 | 0.07 | 13,13,13,13                 | 0     |
| 54  | MG   | DA    | 1652 | 1/1   | 0.99 | 0.06 | 21,21,21,21                 | 0     |
| 54  | MG   | AB    | 4065 | 1/1   | 0.99 | 0.15 | 20,20,20,20                 | 0     |
| 54  | MG   | CB    | 3083 | 1/1   | 0.99 | 0.10 | 9,9,9,9                     | 0     |
| 54  | MG   | DA    | 1655 | 1/1   | 0.99 | 0.04 | 12,12,12,12                 | 0     |
| 54  | MG   | DA    | 1656 | 1/1   | 0.99 | 0.04 | 15,15,15,15                 | 0     |
| 54  | MG   | AB    | 4066 | 1/1   | 0.99 | 0.14 | 33,33,33,33                 | 0     |
| 54  | MG   | CB    | 3085 | 1/1   | 0.99 | 0.26 | 16,16,16,16                 | 0     |
| 54  | MG   | CB    | 3086 | 1/1   | 0.99 | 0.13 | 17,17,17,17                 | 0     |
| 54  | MG   | AB    | 4017 | 1/1   | 0.99 | 0.36 | 10,10,10,10                 | 0     |
| 54  | MG   | CB    | 3088 | 1/1   | 0.99 | 0.07 | 52,52,52,52                 | 0     |
| 54  | MG   | AB    | 4043 | 1/1   | 0.99 | 0.40 | 16,16,16,16                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 54  | MG   | DA    | 1642 | 1/1   | 1.00 | 0.04 | 31,31,31,31                 | 0     |
| 54  | MG   | AB    | 4054 | 1/1   | 1.00 | 0.12 | 10,10,10,10                 | 0     |
| 54  | MG   | CB    | 3044 | 1/1   | 1.00 | 0.31 | 83,83,83,83                 | 0     |

## 6.5 Other polymers [i](#)

There are no such residues in this entry.