



# Full wwPDB X-ray Structure Validation Report

Jun 16, 2014 – 05:21 PM BST

PDB ID : 4V5U  
Title : Structure of the spliceosomal U4 snRNP core domain  
Authors : Leung, A.K.W.; Nagai, K.; Li, J.  
Deposited on : 2011-02-13  
Resolution : 3.60 Å(reported)

This is a full wwPDB 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 <http://wwpdb.org/ValidationPDFNotes.html>

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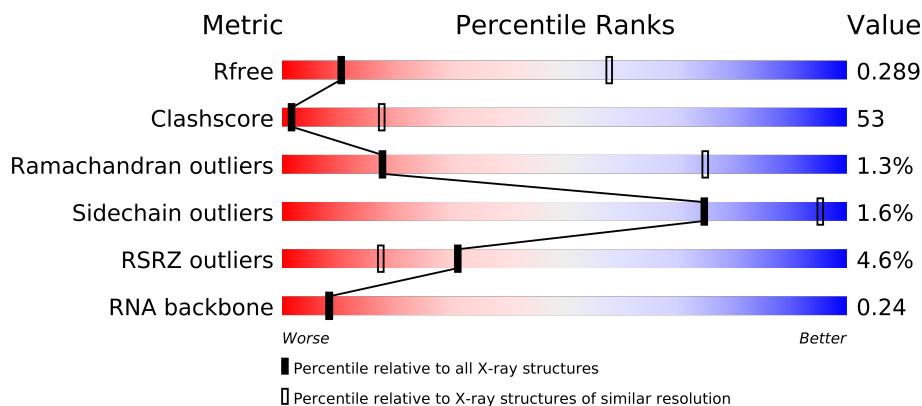
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.16 November 2013  
Xtriage (Phenix) : dev-1323  
EDS : stable23397  
Percentile statistics : 21963  
Refmac : 5.8.0049  
CCP4 : 6.3.0 (Settle)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)  
Validation Pipeline (wwPDB-VP) : stable23397

# 1 Overall quality at a glance

The reported resolution of this entry is 3.60 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)) |
|-----------------------|-----------------------------|---|
| $R_{free}$            | 66092                       | 1020 (3.86-3.34)                                      |
| Clashscore            | 79885                       | 1155 (3.80-3.40)                                      |
| Ramachandran outliers | 78287                       | 1109 (3.80-3.40)                                      |
| Sidechain outliers    | 78261                       | 1108 (3.80-3.40)                                      |
| RSRZ outliers         | 66119                       | 1000 (3.84-3.36)                                      |
| RNA backbone          | 1838                        | 1012 (4.40-2.76)                                      |

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | AA    | 95     |                  |
| 1   | AH    | 95     |                  |
| 1   | AO    | 95     |                  |
| 1   | BA    | 95     |                  |
| 1   | BH    | 95     |                  |
| 1   | BO    | 95     |                  |
| 1   | CA    | 95     |                  |
| 1   | CH    | 95     |                  |
| 1   | CO    | 95     |                  |
| 1   | DA    | 95     |                  |
| 1   | DH    | 95     |                  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | DO    | 95     |                  |
| 2   | AB    | 119    |                  |
| 2   | AI    | 119    |                  |
| 2   | AP    | 119    |                  |
| 2   | BB    | 119    |                  |
| 2   | BI    | 119    |                  |
| 2   | BP    | 119    |                  |
| 2   | CB    | 119    |                  |
| 2   | CI    | 119    |                  |
| 2   | CP    | 119    |                  |
| 2   | DB    | 119    |                  |
| 2   | DI    | 119    |                  |
| 2   | DP    | 119    |                  |
| 3   | AC    | 118    |                  |
| 3   | AJ    | 118    |                  |
| 3   | AQ    | 118    |                  |
| 3   | BC    | 118    |                  |
| 3   | BJ    | 118    |                  |
| 3   | BQ    | 118    |                  |
| 3   | CC    | 118    |                  |
| 3   | CJ    | 118    |                  |
| 3   | CQ    | 118    |                  |
| 3   | DC    | 118    |                  |
| 3   | DJ    | 118    |                  |
| 3   | DQ    | 118    |                  |
| 4   | AD    | 126    |                  |
| 4   | AK    | 126    |                  |
| 4   | AR    | 126    |                  |
| 4   | BD    | 126    |                  |
| 4   | BK    | 126    |                  |
| 4   | BR    | 126    |                  |
| 4   | CD    | 126    |                  |
| 4   | CK    | 126    |                  |
| 4   | CR    | 126    |                  |
| 4   | DD    | 126    |                  |
| 4   | DK    | 126    |                  |
| 4   | DR    | 126    |                  |
| 5   | AE    | 92     |                  |
| 5   | AL    | 92     |                  |
| 5   | AS    | 92     |                  |
| 5   | BE    | 92     |                  |
| 5   | BL    | 92     |                  |

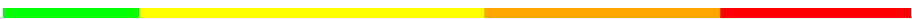
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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 5   | BS    | 92     |                  |
| 5   | CE    | 92     |                  |
| 5   | CL    | 92     |                  |
| 5   | CS    | 92     |                  |
| 5   | DE    | 92     |                  |
| 5   | DL    | 92     |                  |
| 5   | DS    | 92     |                  |
| 6   | AF    | 86     |                  |
| 6   | AM    | 86     |                  |
| 6   | AT    | 86     |                  |
| 6   | BF    | 86     |                  |
| 6   | BM    | 86     |                  |
| 6   | BT    | 86     |                  |
| 6   | CF    | 86     |                  |
| 6   | CM    | 86     |                  |
| 6   | CT    | 86     |                  |
| 6   | DF    | 86     |                  |
| 6   | DM    | 86     |                  |
| 6   | DT    | 86     |                  |
| 7   | AG    | 76     |                  |
| 7   | AN    | 76     |                  |
| 7   | AU    | 76     |                  |
| 7   | BG    | 76     |                  |
| 7   | BN    | 76     |                  |
| 7   | BU    | 76     |                  |
| 7   | CG    | 76     |                  |
| 7   | CN    | 76     |                  |
| 7   | CU    | 76     |                  |
| 7   | DG    | 76     |                  |
| 7   | DN    | 76     |                  |
| 7   | DU    | 76     |                  |
| 8   | AV    | 68     |                  |
| 8   | AX    | 68     |                  |
| 8   | AY    | 68     |                  |
| 8   | BV    | 68     |                  |
| 8   | BX    | 68     |                  |
| 8   | BY    | 68     |                  |
| 8   | CV    | 68     |                  |
| 8   | CX    | 68     |                  |
| 8   | CY    | 68     |                  |
| 8   | DV    | 68     |                  |
| 8   | DX    | 68     |                  |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 8   | DY    | 68     |  A horizontal bar chart representing the quality of chain 8 (DY). The bar is divided into four segments: green (approx. 15%), yellow (approx. 45%), orange (approx. 30%), and red (approx. 10%). |

## 2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 75557 atoms, of which 0 are hydrogen and 0 are deuterium.

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 SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATE DPROTEINS B AND B'.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 1   | AA    | 90       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 724   | 455 | 133 | 129 | 7 |         |         |       |
| 1   | AH    | 91       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 733   | 461 | 135 | 130 | 7 |         |         |       |
| 1   | AO    | 89       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 718   | 452 | 132 | 127 | 7 |         |         |       |
| 1   | BA    | 91       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 733   | 461 | 135 | 130 | 7 |         |         |       |
| 1   | BH    | 95       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 759   | 477 | 139 | 135 | 8 |         |         |       |
| 1   | BO    | 90       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 724   | 455 | 133 | 129 | 7 |         |         |       |
| 1   | CA    | 90       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 724   | 455 | 133 | 129 | 7 |         |         |       |
| 1   | CH    | 91       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 733   | 461 | 135 | 130 | 7 |         |         |       |
| 1   | CO    | 91       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 733   | 461 | 135 | 130 | 7 |         |         |       |
| 1   | DA    | 90       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 724   | 455 | 133 | 129 | 7 |         |         |       |
| 1   | DH    | 95       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 759   | 477 | 139 | 135 | 8 |         |         |       |
| 1   | DO    | 91       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 733   | 461 | 135 | 130 | 7 |         |         |       |

- Molecule 2 is a protein called SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 2   | AB    | 97       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 759   | 482 | 135 | 138 | 4 |         |         |       |
| 2   | AI    | 96       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 751   | 477 | 134 | 137 | 3 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 2   | AP    | 95       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 746   | 474 | 133 | 136 | 3 |         |         |       |
| 2   | BB    | 96       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 751   | 477 | 134 | 137 | 3 |         |         |       |
| 2   | BI    | 96       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 751   | 477 | 134 | 137 | 3 |         |         |       |
| 2   | BP    | 96       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 754   | 479 | 134 | 137 | 4 |         |         |       |
| 2   | CB    | 97       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 759   | 482 | 135 | 138 | 4 |         |         |       |
| 2   | CI    | 96       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 751   | 477 | 134 | 137 | 3 |         |         |       |
| 2   | CP    | 95       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 746   | 474 | 133 | 136 | 3 |         |         |       |
| 2   | DB    | 96       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 754   | 479 | 134 | 137 | 4 |         |         |       |
| 2   | DI    | 94       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 737   | 468 | 131 | 135 | 3 |         |         |       |
| 2   | DP    | 95       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 746   | 474 | 133 | 136 | 3 |         |         |       |

- Molecule 3 is a protein called SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 3   | AC    | 105      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 845   | 529 | 157 | 154 | 5 |         |         |       |
| 3   | AJ    | 107      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 859   | 538 | 159 | 157 | 5 |         |         |       |
| 3   | AQ    | 90       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 709   | 446 | 135 | 123 | 5 |         |         |       |
| 3   | BC    | 105      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 845   | 529 | 157 | 154 | 5 |         |         |       |
| 3   | BJ    | 106      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 852   | 534 | 158 | 155 | 5 |         |         |       |
| 3   | BQ    | 90       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 709   | 446 | 135 | 123 | 5 |         |         |       |
| 3   | CC    | 105      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 845   | 529 | 157 | 154 | 5 |         |         |       |
| 3   | CJ    | 107      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 859   | 538 | 159 | 157 | 5 |         |         |       |
| 3   | CQ    | 92       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 728   | 459 | 138 | 126 | 5 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 3   | DC    | 105      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 845   | 529 | 157 | 154 | 5 |         |         |       |
| 3   | DJ    | 106      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 852   | 534 | 158 | 155 | 5 |         |         |       |
| 3   | DQ    | 90       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 709   | 446 | 135 | 123 | 5 |         |         |       |

- Molecule 4 is a protein called SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 4   | AD    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | AK    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | AR    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | BD    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | BK    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | BR    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | CD    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | CK    | 90       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 700   | 435 | 127 | 131 | 7 |         |         |       |
| 4   | CR    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | DD    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | DK    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |
| 4   | DR    | 89       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 696   | 433 | 126 | 130 | 7 |         |         |       |

- Molecule 5 is a protein called SMALL NUCLEAR RIBONUCLEOPROTEIN E.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 5   | AE    | 86       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 707   | 446 | 127 | 129 | 5 |         |         |       |
| 5   | AL    | 76       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 629   | 397 | 112 | 116 | 4 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 5   | AS    | 78       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 645   | 407 | 115 | 119 | 4 |         |         |       |
| 5   | BE    | 75       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 622   | 392 | 111 | 115 | 4 |         |         |       |
| 5   | BL    | 75       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 622   | 392 | 111 | 115 | 4 |         |         |       |
| 5   | BS    | 82       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 678   | 428 | 121 | 124 | 5 |         |         |       |
| 5   | CE    | 84       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 694   | 439 | 124 | 126 | 5 |         |         |       |
| 5   | CL    | 75       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 622   | 392 | 111 | 115 | 4 |         |         |       |
| 5   | CS    | 78       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 645   | 407 | 115 | 119 | 4 |         |         |       |
| 5   | DE    | 76       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 629   | 397 | 112 | 116 | 4 |         |         |       |
| 5   | DL    | 75       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 622   | 392 | 111 | 115 | 4 |         |         |       |
| 5   | DS    | 78       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 645   | 407 | 115 | 119 | 4 |         |         |       |

- Molecule 6 is a protein called SMALL NUCLEAR RIBONUCLEOPROTEIN F.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 6   | AF    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | AM    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | AT    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | BF    | 83       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 648   | 411 | 107 | 124 | 6 |         |         |       |
| 6   | BM    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | BT    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | CF    | 82       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 637   | 405 | 103 | 123 | 6 |         |         |       |
| 6   | CM    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | CT    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 6   | DF    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | DM    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |
| 6   | DT    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 657   | 416 | 107 | 128 | 6 |         |         |       |

- Molecule 7 is a protein called SMALL NUCLEAR RIBONUCLEOPROTEIN G.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 7   | AG    | 73       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 568   | 358 | 102 | 102 | 6 |         |         |       |
| 7   | AN    | 71       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 541   | 342 | 97  | 96  | 6 |         |         |       |
| 7   | AU    | 73       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 568   | 358 | 102 | 102 | 6 |         |         |       |
| 7   | BG    | 73       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 568   | 358 | 102 | 102 | 6 |         |         |       |
| 7   | BN    | 74       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 577   | 364 | 104 | 103 | 6 |         |         |       |
| 7   | BU    | 70       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 533   | 336 | 96  | 95  | 6 |         |         |       |
| 7   | CG    | 73       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 568   | 358 | 102 | 102 | 6 |         |         |       |
| 7   | CN    | 70       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 533   | 336 | 96  | 95  | 6 |         |         |       |
| 7   | CU    | 73       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 568   | 358 | 102 | 102 | 6 |         |         |       |
| 7   | DG    | 73       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 566   | 356 | 102 | 102 | 6 |         |         |       |
| 7   | DN    | 73       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 568   | 358 | 102 | 102 | 6 |         |         |       |
| 7   | DU    | 70       | Total | C   | N   | O   | S | 0       | 0       | 1     |
|     |       |          | 533   | 336 | 96  | 95  | 6 |         |         |       |

- Molecule 8 is a RNA chain called HOMO SAPIENS U4A SNRNA.

| Mol | Chain | Residues | Atoms |     |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|---------|-------|
| 8   | AV    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | AX    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|---------|-------|
| 8   | AY    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | BV    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | BX    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | BY    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | CV    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | CX    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | CY    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | DV    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | DX    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |
| 8   | DY    | 68       | Total | C   | N   | O   | P  | 0       | 0       | 0     |
|     |       |          | 1453  | 650 | 263 | 473 | 67 |         |         |       |

There are 372 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| AV    | ?       | -        | U      | DELETION  | GB 36174  |
| AV    | ?       | -        | G      | DELETION  | GB 36174  |
| AV    | ?       | -        | C      | DELETION  | GB 36174  |
| AV    | ?       | -        | A      | DELETION  | GB 36174  |
| AV    | ?       | -        | A      | DELETION  | GB 36174  |
| AV    | ?       | -        | U      | DELETION  | GB 36174  |
| AV    | ?       | -        | A      | DELETION  | GB 36174  |
| AV    | ?       | -        | U      | DELETION  | GB 36174  |
| AV    | 813     | G        | -      | INSERTION | GB 36174  |
| AV    | 814     | A        | -      | INSERTION | GB 36174  |
| AV    | 815     | A        | -      | INSERTION | GB 36174  |
| AV    | 816     | A        | -      | INSERTION | GB 36174  |
| AV    | ?       | -        | U      | DELETION  | GB 36174  |
| AV    | ?       | -        | A      | DELETION  | GB 36174  |
| AV    | ?       | -        | C      | DELETION  | GB 36174  |
| AV    | ?       | -        | G      | DELETION  | GB 36174  |
| AV    | 846     | U        | -      | INSERTION | GB 36174  |
| AV    | 847     | A        | -      | INSERTION | GB 36174  |
| AV    | 848     | U        | -      | INSERTION | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| AV    | 849     | G        | -      | INSERTION | GB 36174  |
| AV    | 850     | G        | -      | INSERTION | GB 36174  |
| AV    | 851     | G        | -      | INSERTION | GB 36174  |
| AV    | 852     | U        | -      | INSERTION | GB 36174  |
| AV    | 853     | A        | -      | INSERTION | GB 36174  |
| AV    | 854     | A        | -      | INSERTION | GB 36174  |
| AV    | 855     | C        | -      | INSERTION | GB 36174  |
| AV    | 856     | C        | -      | INSERTION | GB 36174  |
| AV    | 857     | U        | -      | INSERTION | GB 36174  |
| AV    | 858     | A        | -      | INSERTION | GB 36174  |
| AV    | 859     | A        | -      | INSERTION | GB 36174  |
| AV    | 860     | G        | -      | INSERTION | GB 36174  |
| AX    | ?       | -        | U      | DELETION  | GB 36174  |
| AX    | ?       | -        | G      | DELETION  | GB 36174  |
| AX    | ?       | -        | C      | DELETION  | GB 36174  |
| AX    | ?       | -        | A      | DELETION  | GB 36174  |
| AX    | ?       | -        | A      | DELETION  | GB 36174  |
| AX    | ?       | -        | U      | DELETION  | GB 36174  |
| AX    | ?       | -        | A      | DELETION  | GB 36174  |
| AX    | ?       | -        | U      | DELETION  | GB 36174  |
| AX    | 813     | G        | -      | INSERTION | GB 36174  |
| AX    | 814     | A        | -      | INSERTION | GB 36174  |
| AX    | 815     | A        | -      | INSERTION | GB 36174  |
| AX    | 816     | A        | -      | INSERTION | GB 36174  |
| AX    | ?       | -        | U      | DELETION  | GB 36174  |
| AX    | ?       | -        | A      | DELETION  | GB 36174  |
| AX    | ?       | -        | C      | DELETION  | GB 36174  |
| AX    | ?       | -        | G      | DELETION  | GB 36174  |
| AX    | 846     | U        | -      | INSERTION | GB 36174  |
| AX    | 847     | A        | -      | INSERTION | GB 36174  |
| AX    | 848     | U        | -      | INSERTION | GB 36174  |
| AX    | 849     | G        | -      | INSERTION | GB 36174  |
| AX    | 850     | G        | -      | INSERTION | GB 36174  |
| AX    | 851     | G        | -      | INSERTION | GB 36174  |
| AX    | 852     | U        | -      | INSERTION | GB 36174  |
| AX    | 853     | A        | -      | INSERTION | GB 36174  |
| AX    | 854     | A        | -      | INSERTION | GB 36174  |
| AX    | 855     | C        | -      | INSERTION | GB 36174  |
| AX    | 856     | C        | -      | INSERTION | GB 36174  |
| AX    | 857     | U        | -      | INSERTION | GB 36174  |
| AX    | 858     | A        | -      | INSERTION | GB 36174  |
| AX    | 859     | A        | -      | INSERTION | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| AX    | 860     | G        | -      | INSERTION | GB 36174  |
| AY    | ?       | -        | U      | DELETION  | GB 36174  |
| AY    | ?       | -        | G      | DELETION  | GB 36174  |
| AY    | ?       | -        | C      | DELETION  | GB 36174  |
| AY    | ?       | -        | A      | DELETION  | GB 36174  |
| AY    | ?       | -        | A      | DELETION  | GB 36174  |
| AY    | ?       | -        | U      | DELETION  | GB 36174  |
| AY    | ?       | -        | A      | DELETION  | GB 36174  |
| AY    | ?       | -        | U      | DELETION  | GB 36174  |
| AY    | 813     | G        | -      | INSERTION | GB 36174  |
| AY    | 814     | A        | -      | INSERTION | GB 36174  |
| AY    | 815     | A        | -      | INSERTION | GB 36174  |
| AY    | 816     | A        | -      | INSERTION | GB 36174  |
| AY    | ?       | -        | U      | DELETION  | GB 36174  |
| AY    | ?       | -        | A      | DELETION  | GB 36174  |
| AY    | ?       | -        | C      | DELETION  | GB 36174  |
| AY    | ?       | -        | G      | DELETION  | GB 36174  |
| AY    | 846     | U        | -      | INSERTION | GB 36174  |
| AY    | 847     | A        | -      | INSERTION | GB 36174  |
| AY    | 848     | U        | -      | INSERTION | GB 36174  |
| AY    | 849     | G        | -      | INSERTION | GB 36174  |
| AY    | 850     | G        | -      | INSERTION | GB 36174  |
| AY    | 851     | G        | -      | INSERTION | GB 36174  |
| AY    | 852     | U        | -      | INSERTION | GB 36174  |
| AY    | 853     | A        | -      | INSERTION | GB 36174  |
| AY    | 854     | A        | -      | INSERTION | GB 36174  |
| AY    | 855     | C        | -      | INSERTION | GB 36174  |
| AY    | 856     | C        | -      | INSERTION | GB 36174  |
| AY    | 857     | U        | -      | INSERTION | GB 36174  |
| AY    | 858     | A        | -      | INSERTION | GB 36174  |
| AY    | 859     | A        | -      | INSERTION | GB 36174  |
| AY    | 860     | G        | -      | INSERTION | GB 36174  |
| BV    | ?       | -        | U      | DELETION  | GB 36174  |
| BV    | ?       | -        | G      | DELETION  | GB 36174  |
| BV    | ?       | -        | C      | DELETION  | GB 36174  |
| BV    | ?       | -        | A      | DELETION  | GB 36174  |
| BV    | ?       | -        | A      | DELETION  | GB 36174  |
| BV    | ?       | -        | U      | DELETION  | GB 36174  |
| BV    | ?       | -        | A      | DELETION  | GB 36174  |
| BV    | ?       | -        | U      | DELETION  | GB 36174  |
| BV    | 813     | G        | -      | INSERTION | GB 36174  |
| BV    | 814     | A        | -      | INSERTION | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| BV    | 815     | A        | -      | INSERTION | GB 36174  |
| BV    | 816     | A        | -      | INSERTION | GB 36174  |
| BV    | ?       | -        | U      | DELETION  | GB 36174  |
| BV    | ?       | -        | A      | DELETION  | GB 36174  |
| BV    | ?       | -        | C      | DELETION  | GB 36174  |
| BV    | ?       | -        | G      | DELETION  | GB 36174  |
| BV    | 846     | U        | -      | INSERTION | GB 36174  |
| BV    | 847     | A        | -      | INSERTION | GB 36174  |
| BV    | 848     | U        | -      | INSERTION | GB 36174  |
| BV    | 849     | G        | -      | INSERTION | GB 36174  |
| BV    | 850     | G        | -      | INSERTION | GB 36174  |
| BV    | 851     | G        | -      | INSERTION | GB 36174  |
| BV    | 852     | U        | -      | INSERTION | GB 36174  |
| BV    | 853     | A        | -      | INSERTION | GB 36174  |
| BV    | 854     | A        | -      | INSERTION | GB 36174  |
| BV    | 855     | C        | -      | INSERTION | GB 36174  |
| BV    | 856     | C        | -      | INSERTION | GB 36174  |
| BV    | 857     | U        | -      | INSERTION | GB 36174  |
| BV    | 858     | A        | -      | INSERTION | GB 36174  |
| BV    | 859     | A        | -      | INSERTION | GB 36174  |
| BV    | 860     | G        | -      | INSERTION | GB 36174  |
| BX    | ?       | -        | U      | DELETION  | GB 36174  |
| BX    | ?       | -        | G      | DELETION  | GB 36174  |
| BX    | ?       | -        | C      | DELETION  | GB 36174  |
| BX    | ?       | -        | A      | DELETION  | GB 36174  |
| BX    | ?       | -        | A      | DELETION  | GB 36174  |
| BX    | ?       | -        | U      | DELETION  | GB 36174  |
| BX    | ?       | -        | A      | DELETION  | GB 36174  |
| BX    | ?       | -        | U      | DELETION  | GB 36174  |
| BX    | 813     | G        | -      | INSERTION | GB 36174  |
| BX    | 814     | A        | -      | INSERTION | GB 36174  |
| BX    | 815     | A        | -      | INSERTION | GB 36174  |
| BX    | 816     | A        | -      | INSERTION | GB 36174  |
| BX    | ?       | -        | U      | DELETION  | GB 36174  |
| BX    | ?       | -        | A      | DELETION  | GB 36174  |
| BX    | ?       | -        | C      | DELETION  | GB 36174  |
| BX    | ?       | -        | G      | DELETION  | GB 36174  |
| BX    | 846     | U        | -      | INSERTION | GB 36174  |
| BX    | 847     | A        | -      | INSERTION | GB 36174  |
| BX    | 848     | U        | -      | INSERTION | GB 36174  |
| BX    | 849     | G        | -      | INSERTION | GB 36174  |
| BX    | 850     | G        | -      | INSERTION | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| BX    | 851     | G        | -      | INSERTION | GB 36174  |
| BX    | 852     | U        | -      | INSERTION | GB 36174  |
| BX    | 853     | A        | -      | INSERTION | GB 36174  |
| BX    | 854     | A        | -      | INSERTION | GB 36174  |
| BX    | 855     | C        | -      | INSERTION | GB 36174  |
| BX    | 856     | C        | -      | INSERTION | GB 36174  |
| BX    | 857     | U        | -      | INSERTION | GB 36174  |
| BX    | 858     | A        | -      | INSERTION | GB 36174  |
| BX    | 859     | A        | -      | INSERTION | GB 36174  |
| BX    | 860     | G        | -      | INSERTION | GB 36174  |
| BY    | ?       | -        | U      | DELETION  | GB 36174  |
| BY    | ?       | -        | G      | DELETION  | GB 36174  |
| BY    | ?       | -        | C      | DELETION  | GB 36174  |
| BY    | ?       | -        | A      | DELETION  | GB 36174  |
| BY    | ?       | -        | A      | DELETION  | GB 36174  |
| BY    | ?       | -        | U      | DELETION  | GB 36174  |
| BY    | ?       | -        | A      | DELETION  | GB 36174  |
| BY    | ?       | -        | U      | DELETION  | GB 36174  |
| BY    | 813     | G        | -      | INSERTION | GB 36174  |
| BY    | 814     | A        | -      | INSERTION | GB 36174  |
| BY    | 815     | A        | -      | INSERTION | GB 36174  |
| BY    | 816     | A        | -      | INSERTION | GB 36174  |
| BY    | ?       | -        | U      | DELETION  | GB 36174  |
| BY    | ?       | -        | A      | DELETION  | GB 36174  |
| BY    | ?       | -        | C      | DELETION  | GB 36174  |
| BY    | ?       | -        | G      | DELETION  | GB 36174  |
| BY    | 846     | U        | -      | INSERTION | GB 36174  |
| BY    | 847     | A        | -      | INSERTION | GB 36174  |
| BY    | 848     | U        | -      | INSERTION | GB 36174  |
| BY    | 849     | G        | -      | INSERTION | GB 36174  |
| BY    | 850     | G        | -      | INSERTION | GB 36174  |
| BY    | 851     | G        | -      | INSERTION | GB 36174  |
| BY    | 852     | U        | -      | INSERTION | GB 36174  |
| BY    | 853     | A        | -      | INSERTION | GB 36174  |
| BY    | 854     | A        | -      | INSERTION | GB 36174  |
| BY    | 855     | C        | -      | INSERTION | GB 36174  |
| BY    | 856     | C        | -      | INSERTION | GB 36174  |
| BY    | 857     | U        | -      | INSERTION | GB 36174  |
| BY    | 858     | A        | -      | INSERTION | GB 36174  |
| BY    | 859     | A        | -      | INSERTION | GB 36174  |
| BY    | 860     | G        | -      | INSERTION | GB 36174  |
| CV    | ?       | -        | U      | DELETION  | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| CV    | ?       | -        | G      | DELETION  | GB 36174  |
| CV    | ?       | -        | C      | DELETION  | GB 36174  |
| CV    | ?       | -        | A      | DELETION  | GB 36174  |
| CV    | ?       | -        | A      | DELETION  | GB 36174  |
| CV    | ?       | -        | U      | DELETION  | GB 36174  |
| CV    | ?       | -        | A      | DELETION  | GB 36174  |
| CV    | ?       | -        | U      | DELETION  | GB 36174  |
| CV    | 813     | G        | -      | INSERTION | GB 36174  |
| CV    | 814     | A        | -      | INSERTION | GB 36174  |
| CV    | 815     | A        | -      | INSERTION | GB 36174  |
| CV    | 816     | A        | -      | INSERTION | GB 36174  |
| CV    | ?       | -        | U      | DELETION  | GB 36174  |
| CV    | ?       | -        | A      | DELETION  | GB 36174  |
| CV    | ?       | -        | C      | DELETION  | GB 36174  |
| CV    | ?       | -        | G      | DELETION  | GB 36174  |
| CV    | 846     | U        | -      | INSERTION | GB 36174  |
| CV    | 847     | A        | -      | INSERTION | GB 36174  |
| CV    | 848     | U        | -      | INSERTION | GB 36174  |
| CV    | 849     | G        | -      | INSERTION | GB 36174  |
| CV    | 850     | G        | -      | INSERTION | GB 36174  |
| CV    | 851     | G        | -      | INSERTION | GB 36174  |
| CV    | 852     | U        | -      | INSERTION | GB 36174  |
| CV    | 853     | A        | -      | INSERTION | GB 36174  |
| CV    | 854     | A        | -      | INSERTION | GB 36174  |
| CV    | 855     | C        | -      | INSERTION | GB 36174  |
| CV    | 856     | C        | -      | INSERTION | GB 36174  |
| CV    | 857     | U        | -      | INSERTION | GB 36174  |
| CV    | 858     | A        | -      | INSERTION | GB 36174  |
| CV    | 859     | A        | -      | INSERTION | GB 36174  |
| CV    | 860     | G        | -      | INSERTION | GB 36174  |
| CX    | ?       | -        | U      | DELETION  | GB 36174  |
| CX    | ?       | -        | G      | DELETION  | GB 36174  |
| CX    | ?       | -        | C      | DELETION  | GB 36174  |
| CX    | ?       | -        | A      | DELETION  | GB 36174  |
| CX    | ?       | -        | A      | DELETION  | GB 36174  |
| CX    | ?       | -        | U      | DELETION  | GB 36174  |
| CX    | ?       | -        | A      | DELETION  | GB 36174  |
| CX    | ?       | -        | U      | DELETION  | GB 36174  |
| CX    | 813     | G        | -      | INSERTION | GB 36174  |
| CX    | 814     | A        | -      | INSERTION | GB 36174  |
| CX    | 815     | A        | -      | INSERTION | GB 36174  |
| CX    | 816     | A        | -      | INSERTION | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| CX    | ?       | -        | U      | DELETION  | GB 36174  |
| CX    | ?       | -        | A      | DELETION  | GB 36174  |
| CX    | ?       | -        | C      | DELETION  | GB 36174  |
| CX    | ?       | -        | G      | DELETION  | GB 36174  |
| CX    | 846     | U        | -      | INSERTION | GB 36174  |
| CX    | 847     | A        | -      | INSERTION | GB 36174  |
| CX    | 848     | U        | -      | INSERTION | GB 36174  |
| CX    | 849     | G        | -      | INSERTION | GB 36174  |
| CX    | 850     | G        | -      | INSERTION | GB 36174  |
| CX    | 851     | G        | -      | INSERTION | GB 36174  |
| CX    | 852     | U        | -      | INSERTION | GB 36174  |
| CX    | 853     | A        | -      | INSERTION | GB 36174  |
| CX    | 854     | A        | -      | INSERTION | GB 36174  |
| CX    | 855     | C        | -      | INSERTION | GB 36174  |
| CX    | 856     | C        | -      | INSERTION | GB 36174  |
| CX    | 857     | U        | -      | INSERTION | GB 36174  |
| CX    | 858     | A        | -      | INSERTION | GB 36174  |
| CX    | 859     | A        | -      | INSERTION | GB 36174  |
| CX    | 860     | G        | -      | INSERTION | GB 36174  |
| CY    | ?       | -        | U      | DELETION  | GB 36174  |
| CY    | ?       | -        | G      | DELETION  | GB 36174  |
| CY    | ?       | -        | C      | DELETION  | GB 36174  |
| CY    | ?       | -        | A      | DELETION  | GB 36174  |
| CY    | ?       | -        | A      | DELETION  | GB 36174  |
| CY    | ?       | -        | U      | DELETION  | GB 36174  |
| CY    | ?       | -        | A      | DELETION  | GB 36174  |
| CY    | ?       | -        | U      | DELETION  | GB 36174  |
| CY    | 813     | G        | -      | INSERTION | GB 36174  |
| CY    | 814     | A        | -      | INSERTION | GB 36174  |
| CY    | 815     | A        | -      | INSERTION | GB 36174  |
| CY    | 816     | A        | -      | INSERTION | GB 36174  |
| CY    | ?       | -        | U      | DELETION  | GB 36174  |
| CY    | ?       | -        | A      | DELETION  | GB 36174  |
| CY    | ?       | -        | C      | DELETION  | GB 36174  |
| CY    | ?       | -        | G      | DELETION  | GB 36174  |
| CY    | 846     | U        | -      | INSERTION | GB 36174  |
| CY    | 847     | A        | -      | INSERTION | GB 36174  |
| CY    | 848     | U        | -      | INSERTION | GB 36174  |
| CY    | 849     | G        | -      | INSERTION | GB 36174  |
| CY    | 850     | G        | -      | INSERTION | GB 36174  |
| CY    | 851     | G        | -      | INSERTION | GB 36174  |
| CY    | 852     | U        | -      | INSERTION | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| CY    | 853     | A        | -      | INSERTION | GB 36174  |
| CY    | 854     | A        | -      | INSERTION | GB 36174  |
| CY    | 855     | C        | -      | INSERTION | GB 36174  |
| CY    | 856     | C        | -      | INSERTION | GB 36174  |
| CY    | 857     | U        | -      | INSERTION | GB 36174  |
| CY    | 858     | A        | -      | INSERTION | GB 36174  |
| CY    | 859     | A        | -      | INSERTION | GB 36174  |
| CY    | 860     | G        | -      | INSERTION | GB 36174  |
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| DV    | ?       | -        | G      | DELETION  | GB 36174  |
| DV    | ?       | -        | C      | DELETION  | GB 36174  |
| DV    | ?       | -        | A      | DELETION  | GB 36174  |
| DV    | ?       | -        | A      | DELETION  | GB 36174  |
| DV    | ?       | -        | U      | DELETION  | GB 36174  |
| DV    | ?       | -        | A      | DELETION  | GB 36174  |
| DV    | ?       | -        | U      | DELETION  | GB 36174  |
| DV    | 813     | G        | -      | INSERTION | GB 36174  |
| DV    | 814     | A        | -      | INSERTION | GB 36174  |
| DV    | 815     | A        | -      | INSERTION | GB 36174  |
| DV    | 816     | A        | -      | INSERTION | GB 36174  |
| DV    | ?       | -        | U      | DELETION  | GB 36174  |
| DV    | ?       | -        | A      | DELETION  | GB 36174  |
| DV    | ?       | -        | C      | DELETION  | GB 36174  |
| DV    | ?       | -        | G      | DELETION  | GB 36174  |
| DV    | 846     | U        | -      | INSERTION | GB 36174  |
| DV    | 847     | A        | -      | INSERTION | GB 36174  |
| DV    | 848     | U        | -      | INSERTION | GB 36174  |
| DV    | 849     | G        | -      | INSERTION | GB 36174  |
| DV    | 850     | G        | -      | INSERTION | GB 36174  |
| DV    | 851     | G        | -      | INSERTION | GB 36174  |
| DV    | 852     | U        | -      | INSERTION | GB 36174  |
| DV    | 853     | A        | -      | INSERTION | GB 36174  |
| DV    | 854     | A        | -      | INSERTION | GB 36174  |
| DV    | 855     | C        | -      | INSERTION | GB 36174  |
| DV    | 856     | C        | -      | INSERTION | GB 36174  |
| DV    | 857     | U        | -      | INSERTION | GB 36174  |
| DV    | 858     | A        | -      | INSERTION | GB 36174  |
| DV    | 859     | A        | -      | INSERTION | GB 36174  |
| DV    | 860     | G        | -      | INSERTION | GB 36174  |
| DX    | ?       | -        | U      | DELETION  | GB 36174  |
| DX    | ?       | -        | G      | DELETION  | GB 36174  |
| DX    | ?       | -        | C      | DELETION  | GB 36174  |

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| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| DX    | ?       | -        | A      | DELETION  | GB 36174  |
| DX    | ?       | -        | A      | DELETION  | GB 36174  |
| DX    | ?       | -        | U      | DELETION  | GB 36174  |
| DX    | ?       | -        | A      | DELETION  | GB 36174  |
| DX    | ?       | -        | U      | DELETION  | GB 36174  |
| DX    | 813     | G        | -      | INSERTION | GB 36174  |
| DX    | 814     | A        | -      | INSERTION | GB 36174  |
| DX    | 815     | A        | -      | INSERTION | GB 36174  |
| DX    | 816     | A        | -      | INSERTION | GB 36174  |
| DX    | ?       | -        | U      | DELETION  | GB 36174  |
| DX    | ?       | -        | A      | DELETION  | GB 36174  |
| DX    | ?       | -        | C      | DELETION  | GB 36174  |
| DX    | ?       | -        | G      | DELETION  | GB 36174  |
| DX    | 846     | U        | -      | INSERTION | GB 36174  |
| DX    | 847     | A        | -      | INSERTION | GB 36174  |
| DX    | 848     | U        | -      | INSERTION | GB 36174  |
| DX    | 849     | G        | -      | INSERTION | GB 36174  |
| DX    | 850     | G        | -      | INSERTION | GB 36174  |
| DX    | 851     | G        | -      | INSERTION | GB 36174  |
| DX    | 852     | U        | -      | INSERTION | GB 36174  |
| DX    | 853     | A        | -      | INSERTION | GB 36174  |
| DX    | 854     | A        | -      | INSERTION | GB 36174  |
| DX    | 855     | C        | -      | INSERTION | GB 36174  |
| DX    | 856     | C        | -      | INSERTION | GB 36174  |
| DX    | 857     | U        | -      | INSERTION | GB 36174  |
| DX    | 858     | A        | -      | INSERTION | GB 36174  |
| DX    | 859     | A        | -      | INSERTION | GB 36174  |
| DX    | 860     | G        | -      | INSERTION | GB 36174  |
| DY    | ?       | -        | U      | DELETION  | GB 36174  |
| DY    | ?       | -        | G      | DELETION  | GB 36174  |
| DY    | ?       | -        | C      | DELETION  | GB 36174  |
| DY    | ?       | -        | A      | DELETION  | GB 36174  |
| DY    | ?       | -        | A      | DELETION  | GB 36174  |
| DY    | ?       | -        | U      | DELETION  | GB 36174  |
| DY    | ?       | -        | A      | DELETION  | GB 36174  |
| DY    | ?       | -        | U      | DELETION  | GB 36174  |
| DY    | 813     | G        | -      | INSERTION | GB 36174  |
| DY    | 814     | A        | -      | INSERTION | GB 36174  |
| DY    | 815     | A        | -      | INSERTION | GB 36174  |
| DY    | 816     | A        | -      | INSERTION | GB 36174  |
| DY    | ?       | -        | U      | DELETION  | GB 36174  |
| DY    | ?       | -        | A      | DELETION  | GB 36174  |

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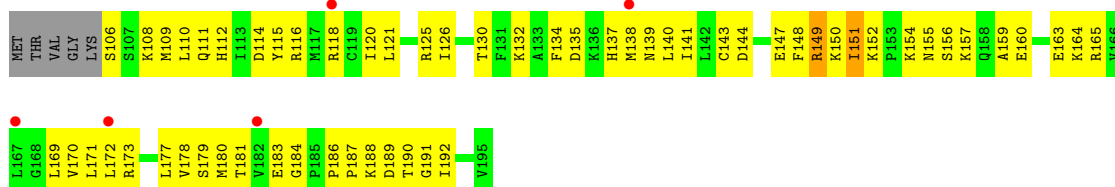
| Chain | Residue | Modelled | Actual | Comment   | Reference |
|-------|---------|----------|--------|-----------|-----------|
| DY    | ?       | -        | C      | DELETION  | GB 36174  |
| DY    | ?       | -        | G      | DELETION  | GB 36174  |
| DY    | 846     | U        | -      | INSERTION | GB 36174  |
| DY    | 847     | A        | -      | INSERTION | GB 36174  |
| DY    | 848     | U        | -      | INSERTION | GB 36174  |
| DY    | 849     | G        | -      | INSERTION | GB 36174  |
| DY    | 850     | G        | -      | INSERTION | GB 36174  |
| DY    | 851     | G        | -      | INSERTION | GB 36174  |
| DY    | 852     | U        | -      | INSERTION | GB 36174  |
| DY    | 853     | A        | -      | INSERTION | GB 36174  |
| DY    | 854     | A        | -      | INSERTION | GB 36174  |
| DY    | 855     | C        | -      | INSERTION | GB 36174  |
| DY    | 856     | C        | -      | INSERTION | GB 36174  |
| DY    | 857     | U        | -      | INSERTION | GB 36174  |
| DY    | 858     | A        | -      | INSERTION | GB 36174  |
| DY    | 859     | A        | -      | INSERTION | GB 36174  |
| DY    | 860     | G        | -      | INSERTION | GB 36174  |

### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

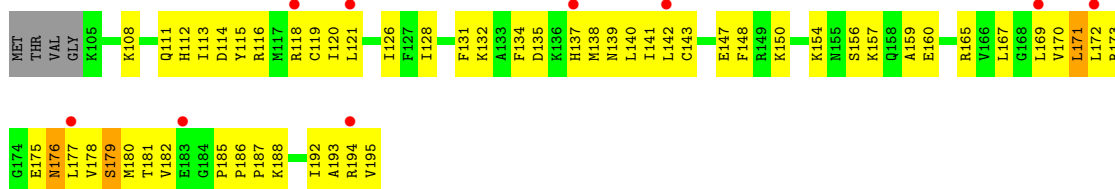
- Molecule 1: SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATED PROTEINS B AND B'

Chain AA:



- Molecule 1: SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATED PROTEINS B AND B'

Chain AH:



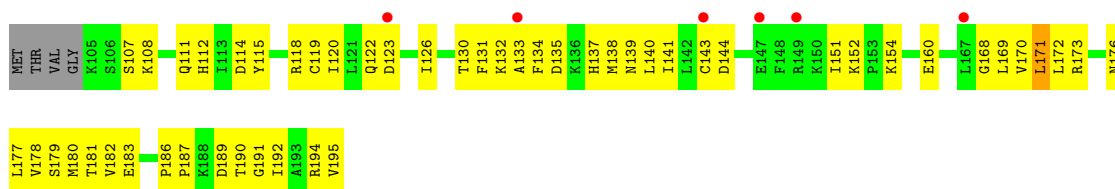
- Molecule 1: SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATED PROTEINS B AND B'

Chain AO:



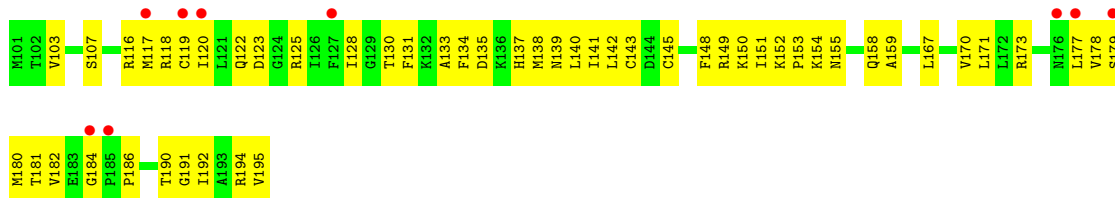
- Molecule 1: SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATED PROTEINS B AND B'

Chain BA:



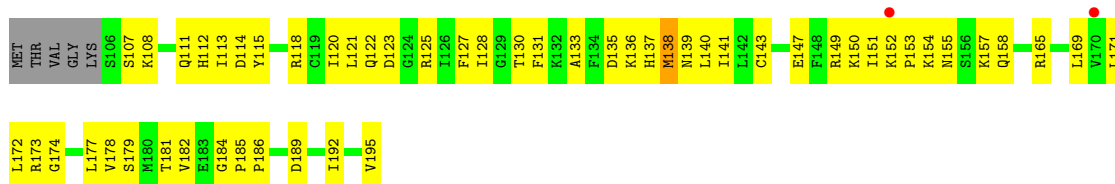
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Chain BH:



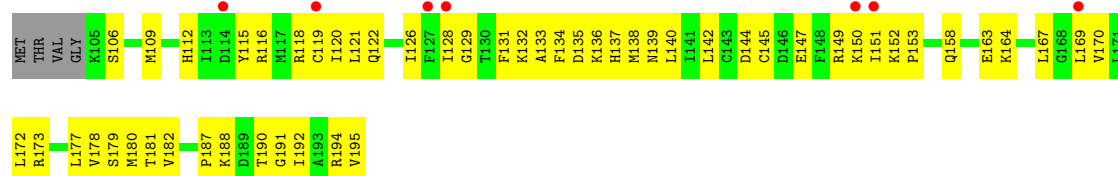
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Chain BO:



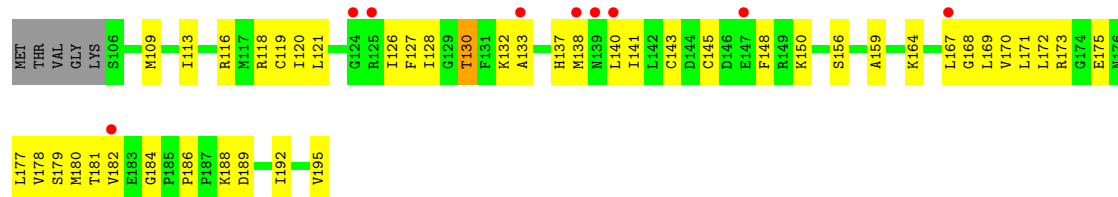
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Chain CO:



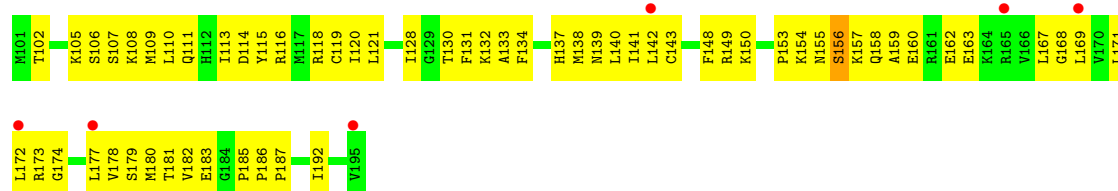
- Molecule 1: SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATED PROTEINS B AND B'

Chain DA:



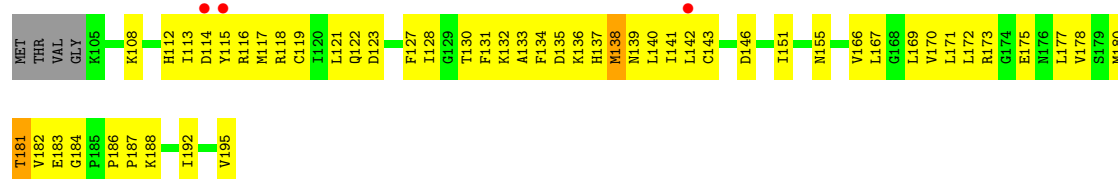
- Molecule 1: SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATED PROTEINS B AND B'

Chain DH:



- Molecule 1: SMALL NUCLEAR RIBONUCLEOPROTEIN-ASSOCIATED PROTEINS B AND B'

Chain DO:



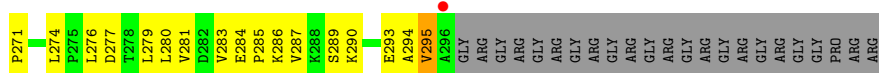
- Molecule 2: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1

Chain AB:



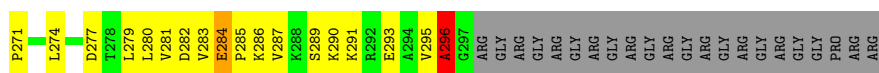






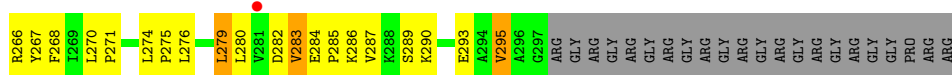
• Molecule 2: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1

Chain CB:



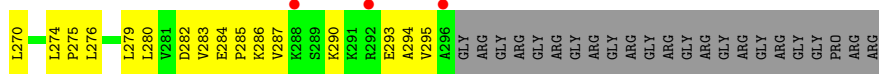
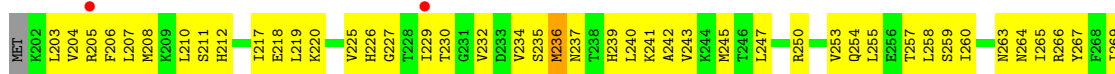
• Molecule 2: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1

Chain CI:



• Molecule 2: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1

Chain CP:



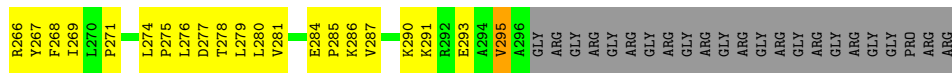
• Molecule 2: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1

Chain DB:



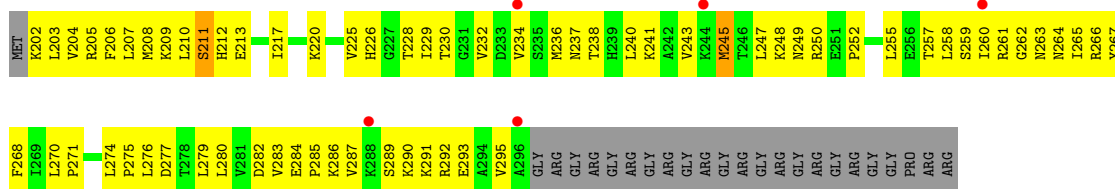
• Molecule 2: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1

Chain DI:



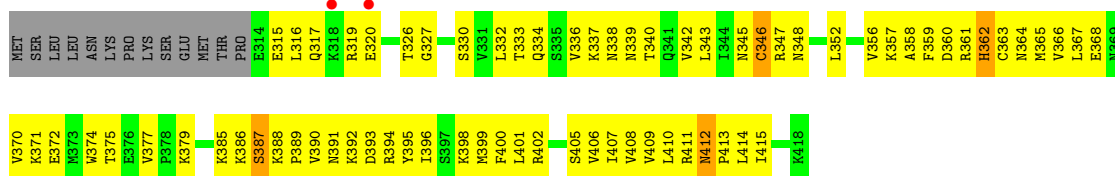
- Molecule 2: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D1

Chain DP:



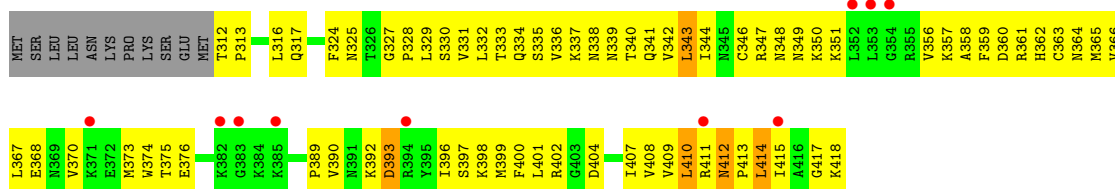
- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain AC:



- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain AJ:



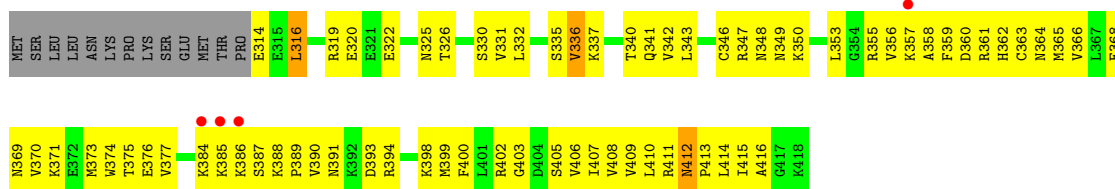
- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain AQ:



- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain BC:



- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain BJ:



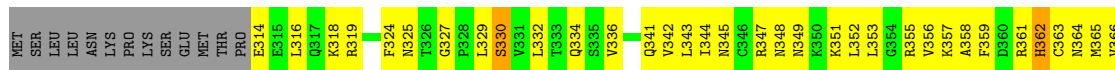
- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

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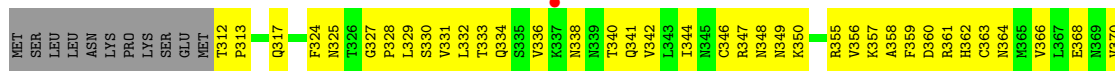
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Chain CC:



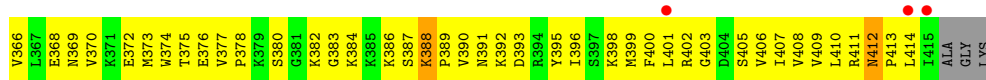
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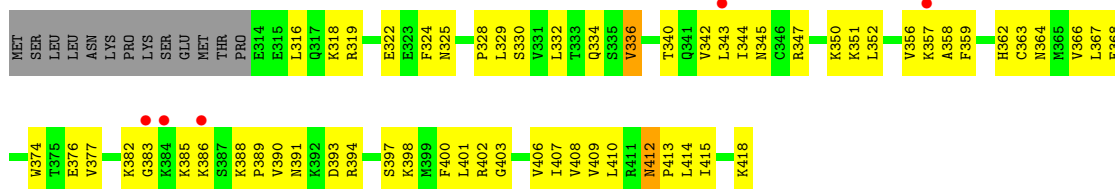
- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain CQ:



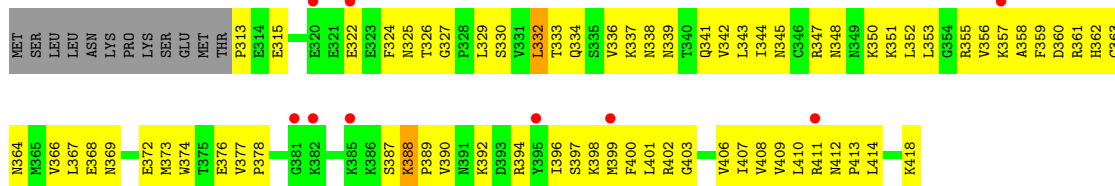
- Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain DC:



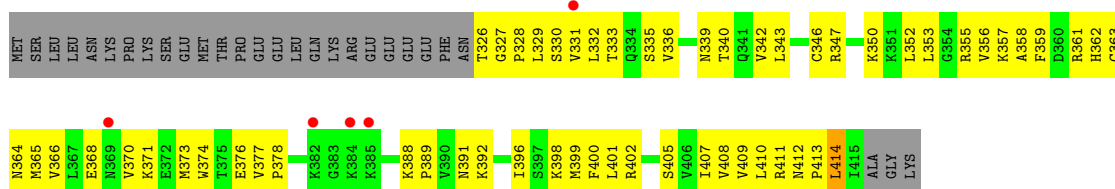
• Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain DJ:



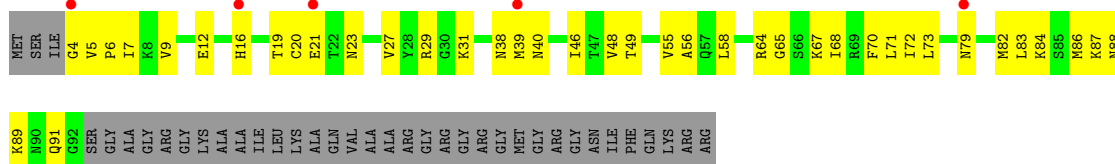
• Molecule 3: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D2

Chain DQ:



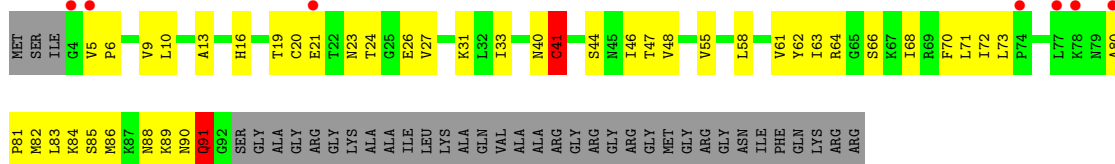
• Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

Chain AD:



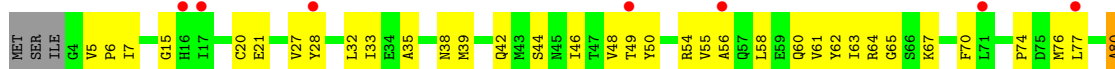
• Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

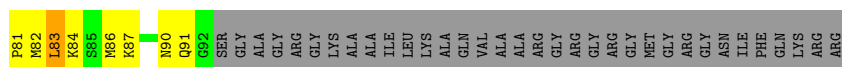
Chain AK:



• Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

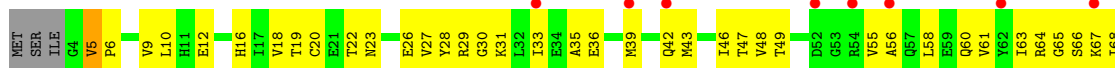
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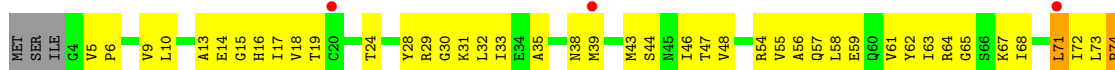
• Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

Chain BD:



• Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

Chain BK:



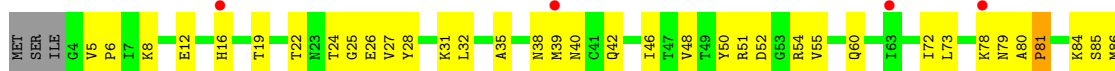
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Chain BR:



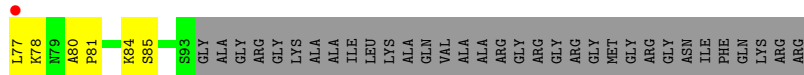
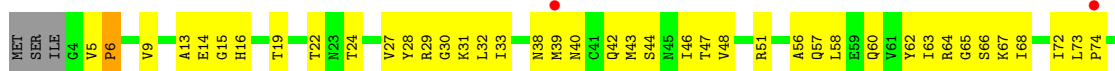
• Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

Chain CD:



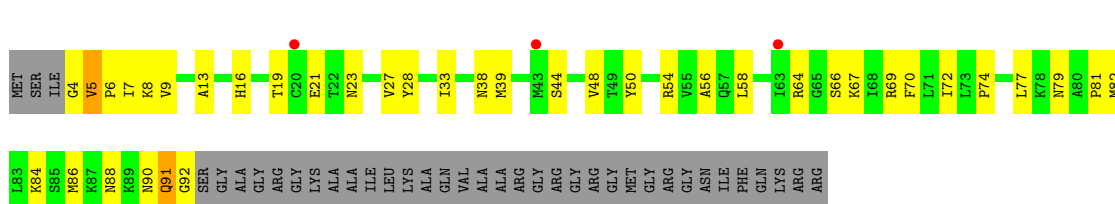
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Chain CK:



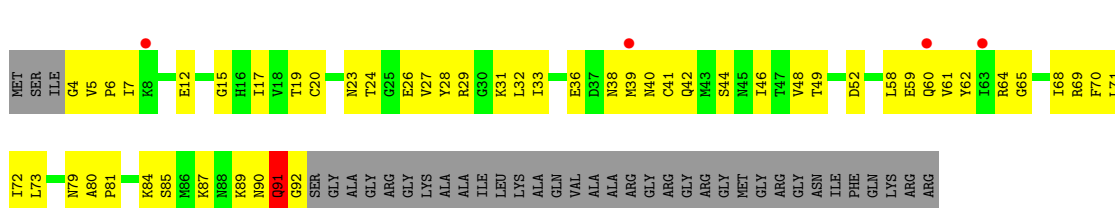
## • Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

Chain CR:



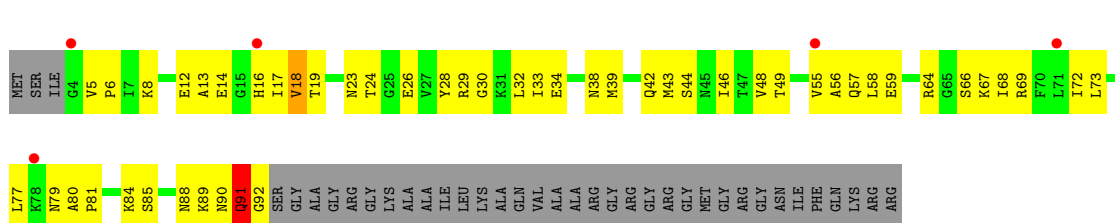
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Chain DD:



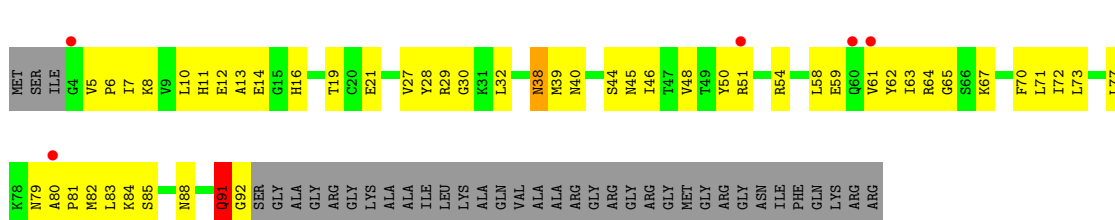
## • Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

Chain DK:



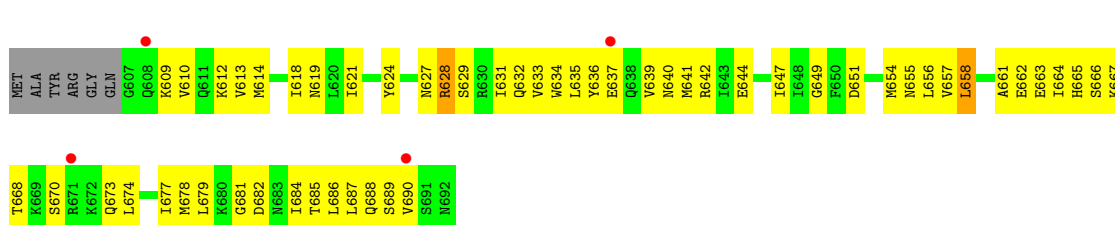
## • Molecule 4: SMALL NUCLEAR RIBONUCLEOPROTEIN SM D3

Chain DR:



## • Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain AE:



## • Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

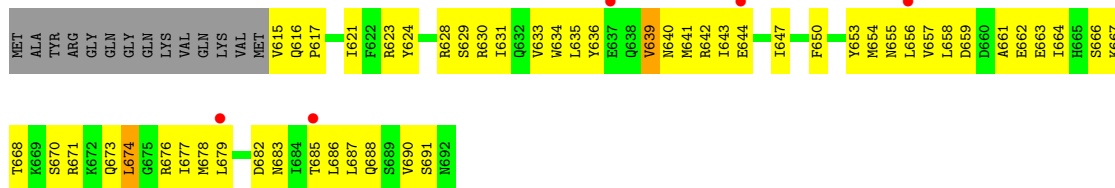
Chain AL:





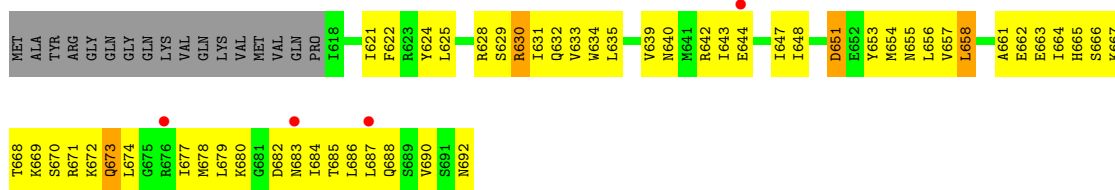
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain AS:



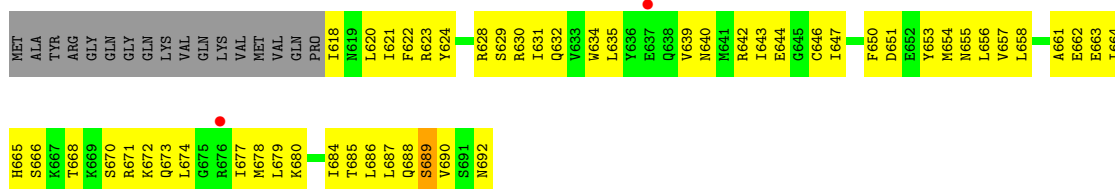
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain BE:



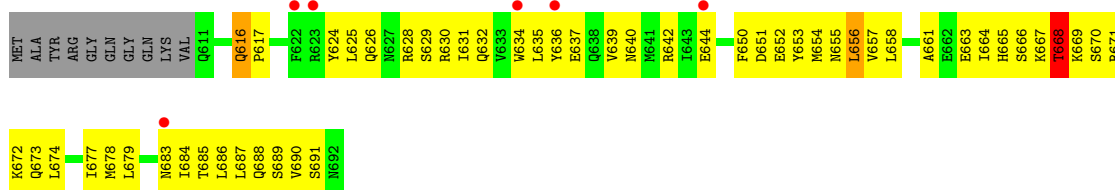
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain BL:



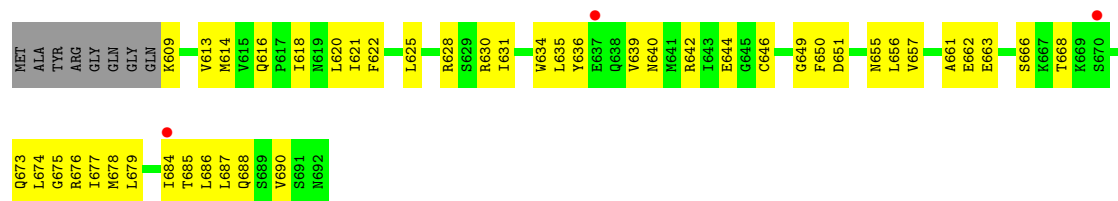
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain BS:



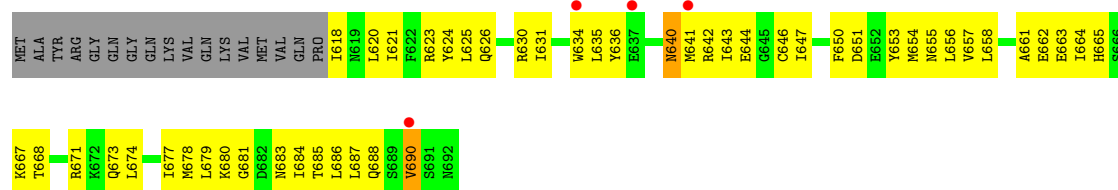
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain CE:



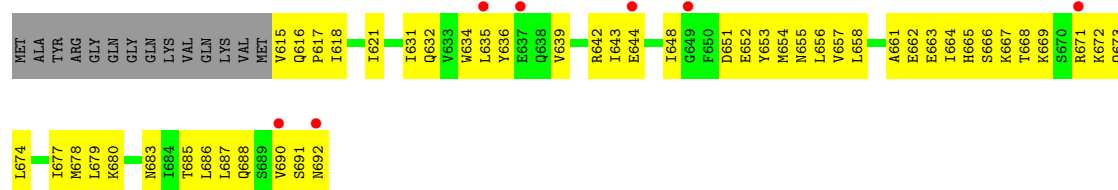
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain CL:



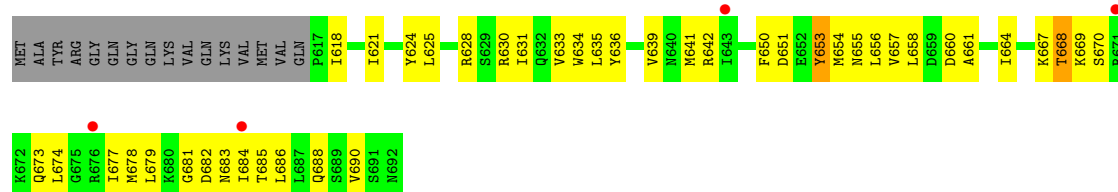
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain CS:



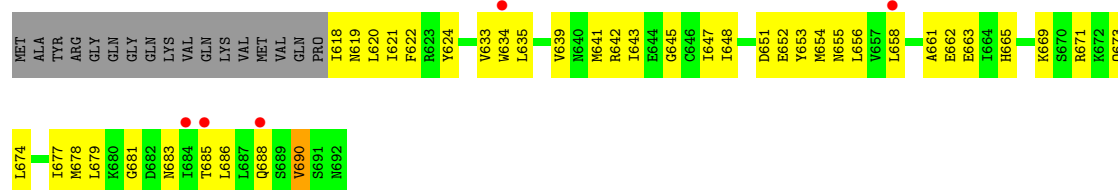
• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

Chain DE:



• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

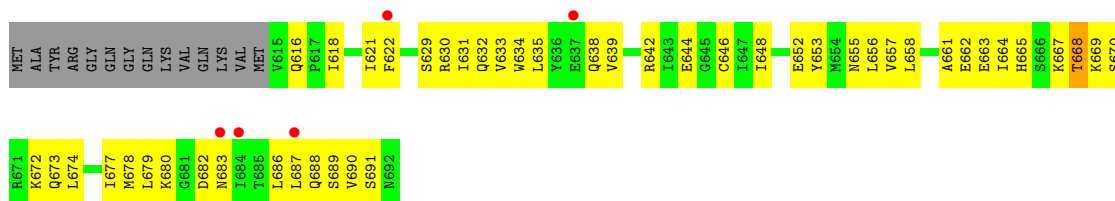
Chain DL:



• Molecule 5: SMALL NUCLEAR RIBONUCLEOPROTEIN E

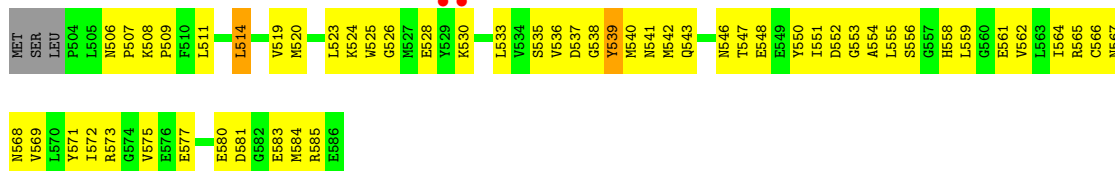
Chain DS:





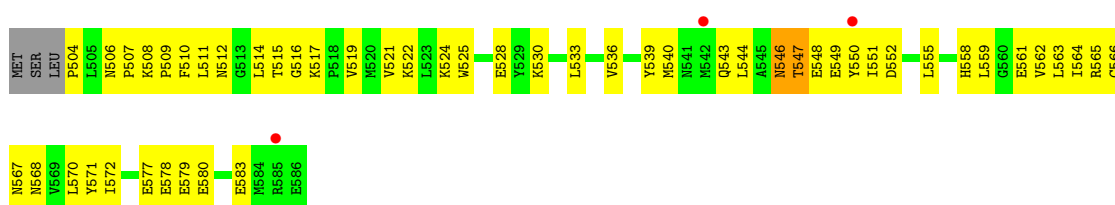
• Molecule 6: SMALL NUCLEAR RIBONUCLEOPROTEIN F

Chain AF:



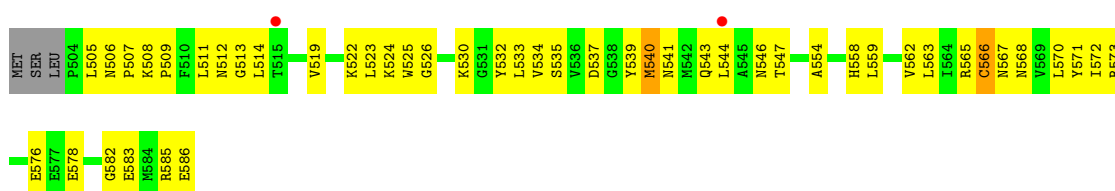
• Molecule 6: SMALL NUCLEAR RIBONUCLEOPROTEIN F

Chain AM:



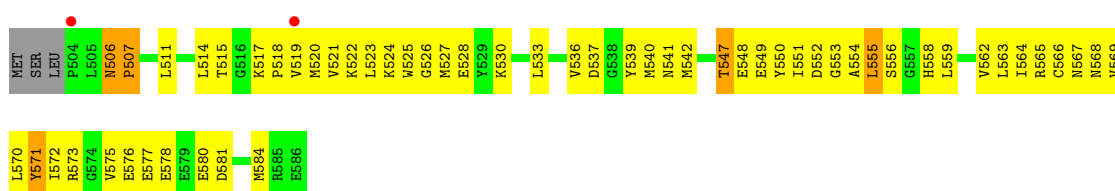
• Molecule 6: SMALL NUCLEAR RIBONUCLEOPROTEIN F

Chain AT:



• Molecule 6: SMALL NUCLEAR RIBONUCLEOPROTEIN F

Chain BF:



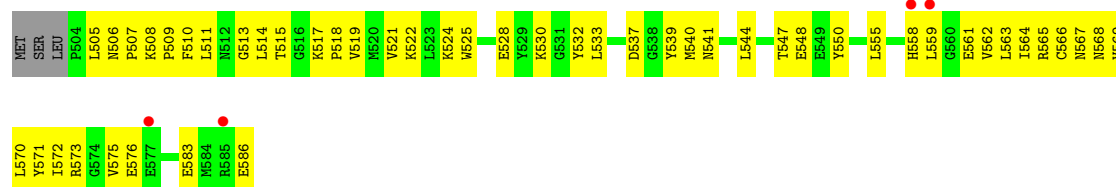
• Molecule 6: SMALL NUCLEAR RIBONUCLEOPROTEIN F

Chain BM:



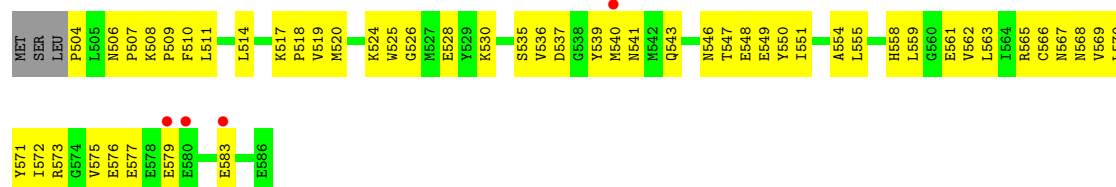
- Molecule 6: SMALL NUCLEAR RIBONUCLEOPROTEIN F

Chain DM:



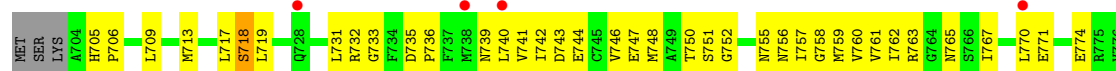
- Molecule 6: SMALL NUCLEAR RIBONUCLEOPROTEIN F

Chain DT:



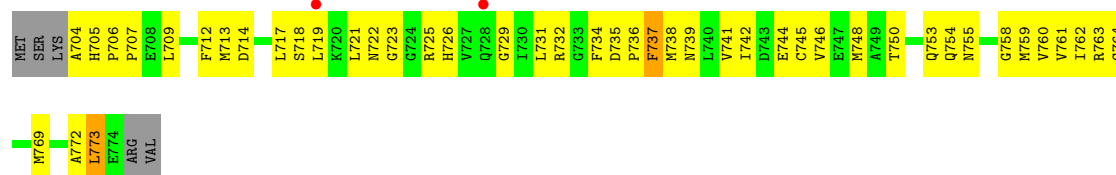
- Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain AG:



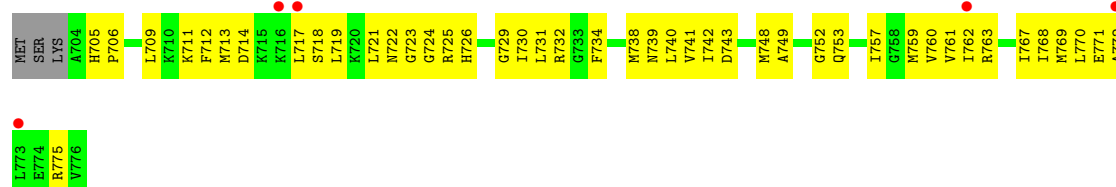
- Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain AN:



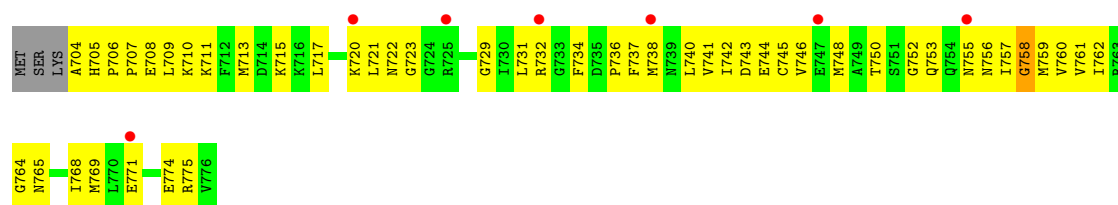
- Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain AU:



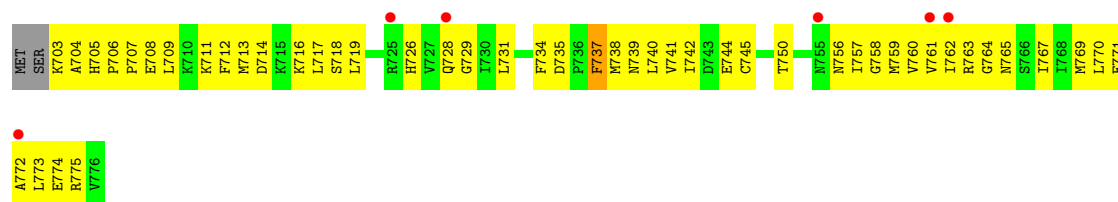
- Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain BG:



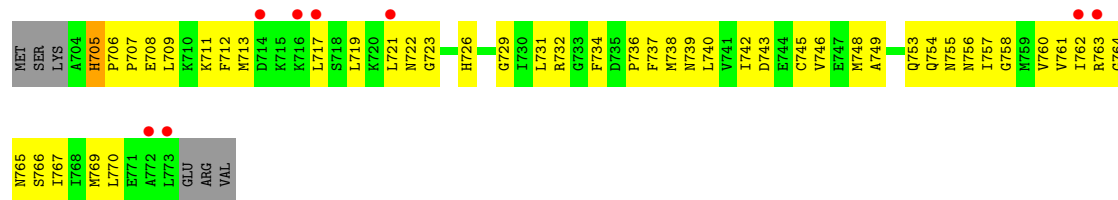
• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain BN:



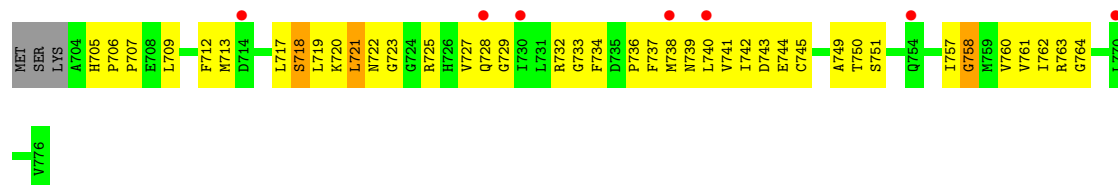
• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain BU:



• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain CG:



• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

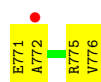
Chain CN:



• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

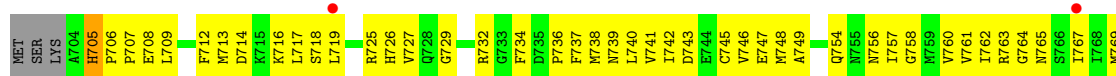
Chain CU:





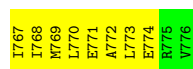
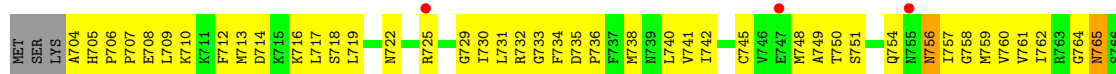
• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain DG:



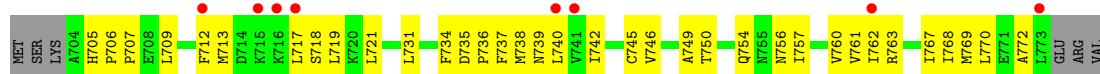
• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain DN:



• Molecule 7: SMALL NUCLEAR RIBONUCLEOPROTEIN G

Chain DU:



• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain AV:



• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain AX:



• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain AY:

G801 G802 G803 G804 G805 G806 G807 G808 G809 G810 G811 G812 G813 G814 G815 G816 G817 G818 G819 G820 G821 G822 G823 G824 G825 G826 G827 G828 G829 G830 G831 G832 G833 G834 G835 G836 G837 G838 G839 G840 G841 G842 G843 G844 G845 G846 G847 G848 G849 G850 G851 G852 G853 G854 G855 G856 G857 G858 G859 G860

G861 G862 G863 G864 G865 G866 G867 G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain BV:

G801 G802 G803 G804 G805 G806 G807 G808 G809 G810 G811 G812 G813 G814 G815 G816 G817 G818 G819 G820 G821 G822 G823 G824 G825 G826 G827 G828 G829 G830 G831 G832 G833 G834 G835 G836 G837 G838 G839 G840 G841 G842 G843 G844 G845 G846 G847 G848 G849 G850 G851 G852 G853 G854 G855 G856 G857 G858 G859 G860

G861 G862 G863 G864 G865 G866 G867 G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain BX:

G801 G802 G803 G804 G805 G806 G807 G808 G809 G810 G811 G812 G813 G814 G815 G816 G817 G818 G819 G820 G821 G822 G823 G824 G825 G826 G827 G828 G829 G830 G831 G832 G833 G834 G835 G836 G837 G838 G839 G840 G841 G842 G843 G844 G845 G846 G847 G848 G849 G850 G851 G852 G853 G854 G855 G856 G857 G858 G859 G860

G862 G863 G864 G865 G866 G867 G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain BY:

G801 G802 G803 G804 G805 G806 G807 G808 G809 G810 G811 G812 G813 G814 G815 G816 G817 G818 G819 G820 G821 G822 G823 G824 G825 G826 G827 G828 G829 G830 G831 G832 G833 G834 G835 G836 G837 G838 G839 G840 G841 G842 G843 G844 G845 G846 G847 G848 G849 G850 G851 G852 G853 G854 G855 G856 G857 G858 G859 G860

G861 G862 G863 G864 G865 G866 G867 G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain CV:

G801 G802 G803 G804 G805 G806 G807 G808 G809 G810 G811 G812 G813 G814 G815 G816 G817 G818 G819 G820 G821 G822 G823 G824 G825 G826 G827 G828 G829 G830 G831 G832 G833 G834 G835 G836 G837 G838 G839 G840 G841 G842 G843 G844 G845 G846 G847 G848 G849 G850 G851 G852 G853 G854 G855 G856 G857 G858 G859 G860 G861

G863 G864 G865 G866 G867 G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain CX:

G801 G802 G803 G804 G805 G806 G807 G808 G809 G810 G811 G812 G813 G814 G815 G816 G817 G818 G819 G820 G821 G822 G823 G824 G825 G826 G827 G828 G829 G830 G831 G832 G833 G834 G835 G836 G837 G838 G839 G840 G841 G842 G843 G844 G845 G846 G847 G848 G849 G850 G851 G852 G853 G854 G855 G856 G857 G858 G859 G860 G861

G861  
A862  
G863  
A864  
C865  
G866  
G867  
G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain CY: 

G801  
C802  
G803  
C804  
G805  
G806  
A807  
C808  
G809  
A810  
C811  
U812  
G813  
A814  
A815  
A816  
A817  
G818  
U819  
C820  
G821  
C822  
C823  
A824  
U825  
G826  
G827  
G828  
C829  
A830  
U831  
U832  
U833  
U834  
U835  
U836  
G837  
A838  
C839  
A840  
G841  
U842  
C843  
U846  
A847  
U848  
G849  
G850  
G851  
U852  
A853  
C854  
C855  
C856  
U857  
A858  
G859  
A860  
G861

G863  
A864  
C865  
U866  
G867  
G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain DV: 

G801  
C802  
G803  
C804  
G805  
G806  
A807  
C808  
C811  
U812  
G813  
A814  
A815  
A816  
U819  
C820  
G821  
C822  
C823  
A824  
U825  
G826  
G827  
G828  
C829  
A830  
A831  
U832  
U833  
U834  
U835  
U836  
G837  
A838  
C839  
U842  
C843  
U844  
U846  
A847  
U848  
G849  
G850  
G851  
U852  
A853  
A854  
C855  
C856  
U857  
A858  
A859  
G860  
A861  
G862  
G863

A864  
C865  
U866  
G867  
G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain DX: 

G801  
C802  
G803  
C804  
U805  
G806  
A807  
C808  
G809  
A810  
C811  
U812  
G813  
A814  
A815  
A816  
A817  
G818  
C819  
C820  
G821  
G822  
U825  
U826  
G827  
G828  
C829  
A830  
A831  
U832  
U833  
U834  
U835  
U836  
G837  
A838  
C839  
A840  
G841  
U842  
C843  
U844  
C845  
U846  
U847  
U848  
G849  
U848  
G849  
G850  
G851  
U852  
A853  
U854  
A855  
C856  
U857  
A858  
A859  
G860  
A861  
G862  
G863

A862  
G863  
A864  
C865  
U866  
G867  
G868

• Molecule 8: HOMO SAPIENS U4A SNRNA

Chain DY: 

G801  
C802  
G803  
C804  
U805  
G806  
A807  
C808  
G809  
A810  
C811  
U812  
G813  
A814  
A815  
A816  
A817  
G818  
C819  
C820  
G821  
G822  
C823  
A824  
U825  
U826  
G827  
G828  
C829  
A830  
A831  
U832  
U833  
U834  
U835  
U836  
G837  
A838  
C839  
A840  
G841  
U842  
U846  
A847  
U848  
G849  
G850  
G851  
U852  
A853  
A854  
U857  
A858  
A859  
G860  
A861  
G862  
G863

A864  
C865  
U866  
G867  
G868

## 4 Data and refinement statistics

| Property  | Value   | Source           |
|---|---|------------------|
| Space group   | P 31  | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 248.01Å 248.01Å 251.94Å<br>90.00° 90.00° 120.00°  | Depositor        |
| Resolution (Å)  | 66.17 – 3.60<br>66.15 – 3.48  | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 82.9 (66.17-3.60)<br>42.3 (66.15-3.48)  | Depositor<br>EDS |
| $R_{merge}$   | 0.21  | Depositor        |
| $R_{sym}$   | (Not available)   | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 2.22 (at 3.49Å)   | Xtriage          |
| Refinement program  | REFMAC 5.5.0109   | Depositor        |
| R, $R_{free}$   | 0.277 , 0.321<br>0.290 , 0.289  | Depositor<br>DCC |
| $R_{free}$ test set   | 4696 reflections (5.24%)  | DCC              |
| Wilson B-factor (Å <sup>2</sup> )                                       | 85.4  | Xtriage          |
| Anisotropy  | 0.027   | Xtriage          |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.25 , -20.0  | EDS              |
| Estimated twinning fraction   | 0.250 for H, K, L<br>0.252 for -H, H+K, -L<br>0.253 for K, H, -L<br>0.246 for -H, -K, L<br>0.428 for -h,-k,l<br>0.408 for h,-h-k,-l<br>0.298 for -k,-h,-l | Xtriage          |
| Reported twinning fraction  | 0.250 for H, K, L<br>0.252 for -H, H+K, -L<br>0.253 for K, H, -L<br>0.246 for -H, -K, L   | Depositor        |
| L-test for twinning   | $\langle  L  \rangle = 0.33$ , $\langle L^2 \rangle = 0.16$   | Xtriage          |
| Outliers  | 0 of 94197 reflections  | Xtriage          |
| $F_o, F_c$ correlation  | 0.79  | EDS              |
| Total number of atoms   | 75557   | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 91.0  | wwPDB-VP         |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 10.49% of the height of the origin peak. No significant pseudotranslation is detected.*

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



## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

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   | AA    | 0.65         | 0/734        | 0.75        | 0/978         |
| 1   | AH    | 0.65         | 0/743        | 0.72        | 0/989         |
| 1   | AO    | 0.61         | 0/728        | 0.72        | 0/970         |
| 1   | BA    | 0.61         | 0/743        | 0.72        | 0/989         |
| 1   | BH    | 0.66         | 0/769        | 0.79        | 0/1024        |
| 1   | BO    | 0.67         | 0/734        | 0.70        | 0/978         |
| 1   | CA    | 0.60         | 0/734        | 0.75        | 0/978         |
| 1   | CH    | 0.64         | 0/743        | 0.72        | 0/989         |
| 1   | CO    | 0.52         | 0/743        | 0.68        | 0/989         |
| 1   | DA    | 0.63         | 0/734        | 0.69        | 0/978         |
| 1   | DH    | 0.64         | 0/769        | 0.76        | 0/1024        |
| 1   | DO    | 0.63         | 0/743        | 0.76        | 0/989         |
| 2   | AB    | 0.63         | 1/768 (0.1%) | 0.77        | 0/1036        |
| 2   | AI    | 0.64         | 0/760        | 0.76        | 0/1026        |
| 2   | AP    | 0.69         | 1/755 (0.1%) | 0.81        | 1/1019 (0.1%) |
| 2   | BB    | 0.67         | 0/760        | 0.83        | 0/1026        |
| 2   | BI    | 0.65         | 1/760 (0.1%) | 0.77        | 0/1026        |
| 2   | BP    | 0.62         | 0/763        | 0.74        | 0/1029        |
| 2   | CB    | 0.63         | 1/768 (0.1%) | 0.73        | 0/1036        |
| 2   | CI    | 0.67         | 0/760        | 0.78        | 0/1026        |
| 2   | CP    | 0.59         | 0/755        | 0.74        | 0/1019        |
| 2   | DB    | 0.67         | 0/763        | 0.77        | 0/1029        |
| 2   | DI    | 0.64         | 0/746        | 0.77        | 0/1008        |
| 2   | DP    | 0.67         | 0/755        | 0.78        | 0/1019        |
| 3   | AC    | 0.66         | 0/855        | 0.80        | 1/1141 (0.1%) |
| 3   | AJ    | 0.70         | 0/870        | 0.77        | 0/1163        |
| 3   | AQ    | 0.69         | 0/718        | 0.77        | 0/962         |
| 3   | BC    | 0.70         | 0/855        | 0.75        | 0/1141        |
| 3   | BJ    | 0.64         | 0/863        | 0.76        | 0/1152        |
| 3   | BQ    | 0.64         | 0/718        | 0.77        | 0/962         |
| 3   | CC    | 0.65         | 0/855        | 0.76        | 0/1141        |
| 3   | CJ    | 0.66         | 0/870        | 0.78        | 0/1163        |
| 3   | CQ    | 0.70         | 0/738        | 0.77        | 0/989         |
| 3   | DC    | 0.66         | 0/855        | 0.75        | 0/1141        |

| Mol | Chain | Bond lengths |              | Bond angles |              |
|-----|-------|--------------|--------------|-------------|--------------|
|     |       | RMSZ         | # Z  >5      | RMSZ        | # Z  >5      |
| 3   | DJ    | 0.68         | 0/863        | 0.77        | 0/1152       |
| 3   | DQ    | 0.65         | 0/718        | 0.85        | 1/962 (0.1%) |
| 4   | AD    | 0.63         | 0/704        | 0.72        | 0/946        |
| 4   | AK    | 0.68         | 2/704 (0.3%) | 0.67        | 0/946        |
| 4   | AR    | 0.64         | 1/704 (0.1%) | 0.70        | 0/946        |
| 4   | BD    | 0.70         | 1/704 (0.1%) | 0.70        | 0/946        |
| 4   | BK    | 0.70         | 0/704        | 0.70        | 0/946        |
| 4   | BR    | 0.67         | 1/704 (0.1%) | 0.70        | 0/946        |
| 4   | CD    | 0.67         | 0/704        | 0.70        | 0/946        |
| 4   | CK    | 0.65         | 0/708        | 0.67        | 0/951        |
| 4   | CR    | 0.65         | 0/704        | 0.69        | 0/946        |
| 4   | DD    | 0.68         | 1/704 (0.1%) | 0.73        | 0/946        |
| 4   | DK    | 0.67         | 1/704 (0.1%) | 0.73        | 0/946        |
| 4   | DR    | 0.64         | 1/704 (0.1%) | 0.71        | 0/946        |
| 5   | AE    | 0.60         | 0/715        | 0.75        | 0/957        |
| 5   | AL    | 0.59         | 0/637        | 0.74        | 0/853        |
| 5   | AS    | 0.68         | 0/653        | 0.77        | 1/876 (0.1%) |
| 5   | BE    | 0.63         | 0/629        | 0.77        | 1/842 (0.1%) |
| 5   | BL    | 0.64         | 0/629        | 0.75        | 0/842        |
| 5   | BS    | 0.63         | 0/686        | 0.73        | 0/919        |
| 5   | CE    | 0.59         | 0/702        | 0.70        | 0/940        |
| 5   | CL    | 0.63         | 0/629        | 0.72        | 0/842        |
| 5   | CS    | 0.65         | 0/653        | 0.73        | 0/876        |
| 5   | DE    | 0.64         | 0/637        | 0.75        | 0/853        |
| 5   | DL    | 0.58         | 0/629        | 0.71        | 0/842        |
| 5   | DS    | 0.59         | 0/653        | 0.63        | 0/876        |
| 6   | AF    | 0.68         | 0/669        | 0.69        | 0/899        |
| 6   | AM    | 0.71         | 0/669        | 0.68        | 0/899        |
| 6   | AT    | 0.65         | 0/669        | 0.72        | 0/899        |
| 6   | BF    | 0.64         | 0/660        | 0.71        | 0/889        |
| 6   | BM    | 0.69         | 0/669        | 0.72        | 0/899        |
| 6   | BT    | 0.65         | 0/669        | 0.66        | 0/899        |
| 6   | CF    | 0.68         | 0/649        | 0.74        | 0/875        |
| 6   | CM    | 0.70         | 0/669        | 0.68        | 0/899        |
| 6   | CT    | 0.70         | 1/669 (0.1%) | 0.69        | 0/899        |
| 6   | DF    | 0.69         | 0/669        | 0.71        | 0/899        |
| 6   | DM    | 0.65         | 0/669        | 0.75        | 0/899        |
| 6   | DT    | 0.62         | 0/669        | 0.71        | 0/899        |
| 7   | AG    | 0.63         | 0/575        | 0.66        | 0/768        |
| 7   | AN    | 0.66         | 0/548        | 0.70        | 0/734        |
| 7   | AU    | 0.60         | 0/575        | 0.74        | 0/768        |
| 7   | BG    | 0.58         | 0/575        | 0.73        | 0/768        |
| 7   | BN    | 0.63         | 0/584        | 0.76        | 0/779        |

| Mol | Chain | Bond lengths |                 | Bond angles |                   |
|-----|-------|--------------|-----------------|-------------|-------------------|
|     |       | RMSZ         | # Z  >5         | RMSZ        | # Z  >5           |
| 7   | BU    | 0.65         | 0/540           | 0.69        | 0/723             |
| 7   | CG    | 0.67         | 0/575           | 0.72        | 0/768             |
| 7   | CN    | 0.63         | 0/540           | 0.71        | 0/723             |
| 7   | CU    | 0.59         | 0/575           | 0.72        | 0/768             |
| 7   | DG    | 0.60         | 0/573           | 0.74        | 0/765             |
| 7   | DN    | 0.58         | 0/575           | 0.74        | 0/768             |
| 7   | DU    | 0.68         | 0/540           | 0.74        | 0/723             |
| 8   | AV    | 1.27         | 4/1626 (0.2%)   | 1.88        | 55/2534 (2.2%)    |
| 8   | AX    | 1.40         | 6/1626 (0.4%)   | 1.93        | 52/2534 (2.1%)    |
| 8   | AY    | 1.32         | 8/1626 (0.5%)   | 1.91        | 52/2534 (2.1%)    |
| 8   | BV    | 1.41         | 4/1626 (0.2%)   | 2.08        | 77/2534 (3.0%)    |
| 8   | BX    | 1.37         | 3/1626 (0.2%)   | 1.92        | 48/2534 (1.9%)    |
| 8   | BY    | 1.42         | 5/1626 (0.3%)   | 2.01        | 72/2534 (2.8%)    |
| 8   | CV    | 1.41         | 9/1626 (0.6%)   | 1.98        | 63/2534 (2.5%)    |
| 8   | CX    | 1.30         | 5/1626 (0.3%)   | 1.91        | 56/2534 (2.2%)    |
| 8   | CY    | 1.39         | 7/1626 (0.4%)   | 1.90        | 55/2534 (2.2%)    |
| 8   | DV    | 1.45         | 9/1626 (0.6%)   | 1.86        | 48/2534 (1.9%)    |
| 8   | DX    | 1.35         | 6/1626 (0.4%)   | 2.03        | 75/2534 (3.0%)    |
| 8   | DY    | 1.40         | 7/1626 (0.4%)   | 1.99        | 64/2534 (2.5%)    |
| All | All   | 0.89         | 86/78398 (0.1%) | 1.20        | 722/109335 (0.7%) |

All (86) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 8   | DX    | 839 | C    | C3'-O3' | 7.55 | 1.52        | 1.42     |
| 8   | DY    | 832 | U    | C1'-N1  | 7.51 | 1.60        | 1.48     |
| 8   | AY    | 822 | G    | C3'-O3' | 7.17 | 1.52        | 1.42     |
| 8   | AY    | 865 | C    | C1'-N1  | 7.03 | 1.59        | 1.48     |
| 8   | BV    | 826 | U    | C1'-N1  | 7.01 | 1.59        | 1.48     |
| 8   | CV    | 811 | C    | C3'-O3' | 6.96 | 1.51        | 1.42     |
| 8   | CV    | 823 | C    | C1'-N1  | 6.70 | 1.58        | 1.48     |
| 8   | DV    | 832 | U    | C1'-N1  | 6.67 | 1.58        | 1.48     |
| 8   | CY    | 806 | G    | C6-N1   | 6.66 | 1.44        | 1.39     |
| 8   | AX    | 832 | U    | C1'-N1  | 6.37 | 1.58        | 1.48     |
| 8   | DV    | 827 | G    | C3'-O3' | 6.27 | 1.50        | 1.42     |
| 8   | CV    | 833 | U    | P-O5'   | 6.19 | 1.66        | 1.59     |
| 8   | AV    | 809 | G    | P-O5'   | 6.17 | 1.66        | 1.59     |
| 8   | BV    | 816 | A    | C3'-O3' | 6.13 | 1.50        | 1.42     |
| 8   | BY    | 831 | A    | C3'-O3' | 6.12 | 1.50        | 1.42     |
| 8   | DV    | 844 | U    | C3'-O3' | 6.07 | 1.50        | 1.42     |
| 8   | DY    | 803 | C    | C1'-N1  | 6.04 | 1.57        | 1.48     |
| 8   | CV    | 837 | G    | C5-C4   | 6.04 | 1.42        | 1.38     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 8   | DV    | 866 | U    | C3'-O3' | 5.92  | 1.50        | 1.42     |
| 8   | CY    | 817 | A    | C3'-O3' | 5.91  | 1.50        | 1.42     |
| 8   | AY    | 863 | G    | N1-C2   | 5.91  | 1.42        | 1.37     |
| 4   | BR    | 91  | GLN  | C-N     | -5.84 | 1.22        | 1.33     |
| 4   | AK    | 41  | CYS  | CB-SG   | -5.81 | 1.72        | 1.81     |
| 8   | AY    | 848 | U    | C3'-O3' | 5.79  | 1.50        | 1.42     |
| 8   | AY    | 865 | C    | N1-C2   | 5.79  | 1.46        | 1.40     |
| 8   | CV    | 837 | G    | C5-C6   | 5.77  | 1.48        | 1.42     |
| 8   | DX    | 806 | G    | C3'-O3' | 5.76  | 1.50        | 1.42     |
| 4   | AR    | 91  | GLN  | C-N     | -5.73 | 1.22        | 1.33     |
| 8   | DX    | 825 | U    | N1-C2   | 5.71  | 1.43        | 1.38     |
| 8   | AX    | 862 | A    | C3'-O3' | 5.66  | 1.50        | 1.42     |
| 8   | BY    | 827 | G    | N1-C2   | 5.62  | 1.42        | 1.37     |
| 8   | CX    | 804 | G    | N9-C4   | 5.62  | 1.42        | 1.38     |
| 8   | CV    | 805 | U    | C3'-O3' | 5.62  | 1.50        | 1.42     |
| 8   | CV    | 832 | U    | C3'-O3' | 5.60  | 1.50        | 1.42     |
| 8   | DX    | 808 | C    | C1'-N1  | 5.60  | 1.57        | 1.48     |
| 4   | DR    | 91  | GLN  | C-N     | -5.59 | 1.23        | 1.33     |
| 8   | DV    | 813 | G    | C3'-O3' | 5.58  | 1.50        | 1.42     |
| 8   | BY    | 825 | U    | C3'-O3' | 5.51  | 1.49        | 1.42     |
| 8   | DV    | 812 | U    | C1'-N1  | 5.51  | 1.57        | 1.48     |
| 8   | BX    | 837 | G    | N1-C2   | 5.50  | 1.42        | 1.37     |
| 8   | CY    | 825 | U    | C1'-N1  | 5.50  | 1.56        | 1.48     |
| 8   | CY    | 816 | A    | C3'-O3' | 5.47  | 1.49        | 1.42     |
| 8   | BY    | 826 | U    | C1'-N1  | 5.46  | 1.56        | 1.48     |
| 8   | AY    | 813 | G    | C3'-O3' | 5.45  | 1.49        | 1.42     |
| 4   | DD    | 91  | GLN  | C-N     | -5.42 | 1.23        | 1.33     |
| 8   | CX    | 828 | G    | P-O5'   | 5.35  | 1.65        | 1.59     |
| 2   | CB    | 296 | ALA  | C-N     | -5.35 | 1.23        | 1.33     |
| 8   | DY    | 850 | G    | C3'-O3' | 5.35  | 1.49        | 1.42     |
| 2   | AP    | 293 | GLU  | CB-CG   | -5.35 | 1.42        | 1.52     |
| 8   | AY    | 826 | U    | C1'-N1  | 5.33  | 1.56        | 1.48     |
| 8   | CV    | 856 | C    | O3'-P   | -5.32 | 1.54        | 1.61     |
| 8   | DV    | 849 | G    | C3'-O3' | 5.29  | 1.49        | 1.42     |
| 2   | AB    | 296 | ALA  | C-N     | -5.27 | 1.23        | 1.33     |
| 8   | AX    | 848 | U    | C3'-O3' | 5.25  | 1.49        | 1.42     |
| 8   | DX    | 815 | A    | C3'-O3' | 5.24  | 1.49        | 1.42     |
| 8   | CX    | 865 | C    | C3'-O3' | 5.24  | 1.49        | 1.42     |
| 6   | CT    | 566 | CYS  | CB-SG   | -5.24 | 1.73        | 1.81     |
| 8   | CV    | 837 | G    | C3'-O3' | 5.24  | 1.49        | 1.42     |
| 8   | DV    | 801 | G    | N3-C4   | 5.22  | 1.39        | 1.35     |
| 8   | CX    | 841 | G    | C3'-O3' | 5.22  | 1.49        | 1.42     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 8   | BX    | 805 | U    | C3'-O3' | 5.22  | 1.49        | 1.42     |
| 8   | DY    | 803 | C    | N1-C2   | 5.21  | 1.45        | 1.40     |
| 8   | AV    | 842 | U    | C3'-O3' | 5.21  | 1.49        | 1.42     |
| 8   | BV    | 821 | G    | C3'-O3' | 5.21  | 1.49        | 1.42     |
| 8   | BX    | 848 | U    | C3'-O3' | 5.20  | 1.49        | 1.42     |
| 8   | AV    | 832 | U    | C3'-O3' | 5.17  | 1.49        | 1.42     |
| 8   | CX    | 828 | G    | N3-C4   | 5.16  | 1.39        | 1.35     |
| 4   | DK    | 91  | GLN  | C-N     | -5.16 | 1.23        | 1.33     |
| 4   | BD    | 91  | GLN  | C-N     | -5.16 | 1.23        | 1.33     |
| 8   | AV    | 867 | G    | N3-C4   | 5.15  | 1.39        | 1.35     |
| 2   | BI    | 296 | ALA  | C-N     | -5.15 | 1.23        | 1.33     |
| 8   | DY    | 824 | A    | P-O5'   | 5.15  | 1.64        | 1.59     |
| 8   | CY    | 838 | A    | N3-C4   | 5.15  | 1.38        | 1.34     |
| 4   | AK    | 91  | GLN  | C-N     | -5.14 | 1.23        | 1.33     |
| 8   | AX    | 808 | C    | C1'-N1  | 5.13  | 1.56        | 1.48     |
| 8   | CY    | 818 | G    | C3'-O3' | 5.13  | 1.49        | 1.42     |
| 8   | DY    | 807 | A    | C6-N1   | 5.12  | 1.39        | 1.35     |
| 8   | DX    | 829 | C    | C1'-N1  | 5.08  | 1.56        | 1.48     |
| 8   | BY    | 826 | U    | P-O5'   | 5.06  | 1.64        | 1.59     |
| 8   | AY    | 805 | U    | C3'-O3' | 5.04  | 1.49        | 1.42     |
| 8   | BV    | 801 | G    | N7-C5   | 5.04  | 1.42        | 1.39     |
| 8   | DV    | 857 | U    | C4-O4   | 5.03  | 1.27        | 1.23     |
| 8   | AX    | 815 | A    | P-O5'   | 5.01  | 1.64        | 1.59     |
| 8   | DY    | 832 | U    | N1-C2   | 5.01  | 1.43        | 1.38     |
| 8   | AX    | 856 | C    | N3-C4   | 5.01  | 1.37        | 1.33     |
| 8   | CY    | 826 | U    | P-O5'   | 5.00  | 1.64        | 1.59     |

All (722) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms       | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|--------|-------------|----------|
| 8   | BV    | 826 | U    | O4'-C1'-N1  | 12.31  | 118.05      | 108.20   |
| 8   | DV    | 850 | G    | N3-C2-N2    | 10.99  | 127.59      | 119.90   |
| 8   | AX    | 804 | G    | C5-C6-O6    | -10.74 | 122.16      | 128.60   |
| 8   | AY    | 864 | A    | N1-C6-N6    | 10.30  | 124.78      | 118.60   |
| 8   | BY    | 848 | U    | O4'-C1'-N1  | 10.10  | 116.28      | 108.20   |
| 8   | BY    | 862 | A    | P-O3'-C3'   | 9.97   | 131.66      | 119.70   |
| 8   | BV    | 804 | G    | O4'-C1'-N9  | 9.88   | 116.11      | 108.20   |
| 8   | BV    | 858 | A    | P-O3'-C3'   | 9.87   | 131.54      | 119.70   |
| 8   | DV    | 829 | C    | O4'-C1'-N1  | 9.87   | 116.09      | 108.20   |
| 8   | DX    | 858 | A    | C1'-O4'-C4' | -9.84  | 102.03      | 109.90   |
| 8   | DX    | 809 | G    | P-O3'-C3'   | 9.82   | 131.49      | 119.70   |
| 8   | CV    | 811 | C    | P-O3'-C3'   | 9.77   | 131.43      | 119.70   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | BV    | 830 | A    | O4'-C1'-N9  | 9.61  | 115.89      | 108.20   |
| 8   | DV    | 802 | C    | O4'-C1'-N1  | 9.59  | 115.87      | 108.20   |
| 8   | DY    | 865 | C    | N3-C4-N4    | 9.59  | 124.72      | 118.00   |
| 8   | AY    | 865 | C    | O4'-C1'-N1  | 9.55  | 115.84      | 108.20   |
| 8   | AX    | 804 | G    | N3-C4-N9    | 9.38  | 131.63      | 126.00   |
| 8   | CV    | 822 | G    | C4-C5-N7    | -9.38 | 107.05      | 110.80   |
| 8   | AY    | 812 | U    | O4'-C1'-N1  | 9.27  | 115.61      | 108.20   |
| 8   | DY    | 832 | U    | N1-C2-O2    | 9.25  | 129.28      | 122.80   |
| 8   | DY    | 850 | G    | P-O3'-C3'   | 9.17  | 130.70      | 119.70   |
| 8   | AX    | 804 | G    | C6-C5-N7    | -9.14 | 124.92      | 130.40   |
| 8   | AY    | 809 | G    | O4'-C1'-N9  | 9.14  | 115.51      | 108.20   |
| 8   | DX    | 864 | A    | O4'-C1'-N9  | 9.12  | 115.50      | 108.20   |
| 8   | AY    | 839 | C    | C5-C6-N1    | 9.10  | 125.55      | 121.00   |
| 8   | DY    | 851 | G    | C5-C6-O6    | -8.98 | 123.21      | 128.60   |
| 8   | BV    | 860 | G    | N1-C6-O6    | -8.93 | 114.55      | 119.90   |
| 8   | DX    | 830 | A    | C1'-O4'-C4' | -8.88 | 102.79      | 109.90   |
| 8   | DV    | 850 | G    | N1-C2-N2    | -8.87 | 108.22      | 116.20   |
| 8   | CY    | 811 | C    | O4'-C1'-N1  | 8.86  | 115.29      | 108.20   |
| 8   | DX    | 848 | U    | O4'-C1'-N1  | 8.81  | 115.25      | 108.20   |
| 8   | CX    | 804 | G    | N3-C4-C5    | -8.74 | 124.23      | 128.60   |
| 8   | CX    | 839 | C    | N1-C2-O2    | 8.74  | 124.14      | 118.90   |
| 8   | BV    | 853 | A    | P-O3'-C3'   | 8.73  | 130.18      | 119.70   |
| 8   | CX    | 804 | G    | C8-N9-C4    | -8.72 | 102.91      | 106.40   |
| 8   | CY    | 816 | A    | P-O3'-C3'   | 8.71  | 130.15      | 119.70   |
| 8   | CY    | 806 | G    | N1-C6-O6    | 8.69  | 125.11      | 119.90   |
| 8   | DX    | 802 | C    | O4'-C1'-N1  | 8.68  | 115.14      | 108.20   |
| 8   | DY    | 832 | U    | O4'-C1'-N1  | 8.65  | 115.12      | 108.20   |
| 8   | DX    | 829 | C    | N1-C2-O2    | 8.60  | 124.06      | 118.90   |
| 8   | BX    | 839 | C    | O4'-C1'-N1  | 8.59  | 115.08      | 108.20   |
| 8   | DY    | 807 | A    | N1-C6-N6    | 8.58  | 123.75      | 118.60   |
| 8   | BY    | 868 | G    | C1'-O4'-C4' | -8.52 | 103.08      | 109.90   |
| 8   | AX    | 804 | G    | N1-C6-O6    | 8.44  | 124.97      | 119.90   |
| 8   | CV    | 849 | G    | O4'-C1'-N9  | 8.42  | 114.94      | 108.20   |
| 8   | CV    | 867 | G    | C1'-O4'-C4' | -8.37 | 103.20      | 109.90   |
| 8   | BY    | 830 | A    | O4'-C1'-N9  | 8.37  | 114.89      | 108.20   |
| 8   | CY    | 838 | A    | P-O3'-C3'   | 8.33  | 129.70      | 119.70   |
| 8   | AX    | 804 | G    | C4-C5-N7    | 8.31  | 114.12      | 110.80   |
| 8   | CX    | 865 | C    | O4'-C1'-N1  | 8.31  | 114.85      | 108.20   |
| 8   | BX    | 813 | G    | C5'-C4'-O4' | 8.30  | 119.06      | 109.10   |
| 8   | AV    | 858 | A    | P-O3'-C3'   | 8.26  | 129.62      | 119.70   |
| 8   | DY    | 841 | G    | C5-C6-O6    | -8.26 | 123.64      | 128.60   |
| 8   | AX    | 804 | G    | C4'-C3'-C2' | -8.25 | 94.35       | 102.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | BY    | 839 | C    | C5-C6-N1    | 8.25  | 125.12      | 121.00   |
| 8   | BY    | 829 | C    | N1-C2-O2    | 8.23  | 123.84      | 118.90   |
| 8   | AV    | 868 | G    | C5-C6-O6    | -8.22 | 123.67      | 128.60   |
| 8   | CV    | 858 | A    | P-O3'-C3'   | 8.21  | 129.55      | 119.70   |
| 8   | DY    | 832 | U    | N3-C2-O2    | -8.16 | 116.49      | 122.20   |
| 8   | CV    | 803 | C    | N1-C2-O2    | 8.13  | 123.78      | 118.90   |
| 8   | BX    | 821 | G    | P-O3'-C3'   | 8.12  | 129.45      | 119.70   |
| 8   | CV    | 811 | C    | C4'-C3'-C2' | -8.11 | 94.49       | 102.60   |
| 8   | BV    | 804 | G    | N7-C8-N9    | 8.09  | 117.14      | 113.10   |
| 8   | CX    | 858 | A    | P-O3'-C3'   | 8.08  | 129.40      | 119.70   |
| 8   | BV    | 831 | A    | N1-C6-N6    | 8.05  | 123.43      | 118.60   |
| 8   | BV    | 804 | G    | C8-N9-C4    | -8.05 | 103.18      | 106.40   |
| 8   | CX    | 845 | C    | N3-C4-C5    | -7.99 | 118.70      | 121.90   |
| 8   | AY    | 849 | G    | P-O3'-C3'   | 7.99  | 129.28      | 119.70   |
| 8   | AX    | 805 | U    | O4'-C1'-N1  | 7.97  | 114.58      | 108.20   |
| 8   | AV    | 833 | U    | O4'-C1'-N1  | 7.91  | 114.53      | 108.20   |
| 8   | CX    | 823 | C    | O4'-C1'-N1  | 7.91  | 114.53      | 108.20   |
| 8   | DY    | 857 | U    | O4'-C1'-N1  | 7.87  | 114.50      | 108.20   |
| 8   | DX    | 813 | G    | C3'-C2'-C1' | -7.86 | 95.21       | 101.50   |
| 8   | AV    | 812 | U    | P-O3'-C3'   | 7.86  | 129.13      | 119.70   |
| 8   | BY    | 824 | A    | C5-N7-C8    | -7.85 | 99.98       | 103.90   |
| 8   | DV    | 838 | A    | C4'-C3'-C2' | -7.84 | 94.76       | 102.60   |
| 8   | AV    | 801 | G    | C5-C6-O6    | -7.83 | 123.90      | 128.60   |
| 8   | BV    | 843 | C    | N3-C4-C5    | -7.83 | 118.77      | 121.90   |
| 8   | CY    | 806 | G    | C5-C6-O6    | -7.82 | 123.91      | 128.60   |
| 8   | DX    | 815 | A    | P-O3'-C3'   | 7.81  | 129.07      | 119.70   |
| 8   | BV    | 860 | G    | C4'-C3'-C2' | -7.74 | 94.86       | 102.60   |
| 8   | CY    | 814 | A    | N1-C6-N6    | 7.74  | 123.24      | 118.60   |
| 8   | DX    | 820 | C    | O5'-P-OP2   | -7.73 | 98.74       | 105.70   |
| 8   | AV    | 868 | G    | N1-C6-O6    | 7.71  | 124.53      | 119.90   |
| 8   | CY    | 812 | U    | O4'-C1'-N1  | 7.71  | 114.37      | 108.20   |
| 8   | CX    | 853 | A    | O4'-C1'-N9  | -7.69 | 102.05      | 108.20   |
| 8   | CY    | 818 | G    | P-O3'-C3'   | 7.69  | 128.93      | 119.70   |
| 8   | AY    | 861 | G    | P-O3'-C3'   | 7.67  | 128.91      | 119.70   |
| 8   | CV    | 832 | U    | N3-C4-C5    | 7.66  | 119.19      | 114.60   |
| 8   | CV    | 833 | U    | O5'-P-OP1   | -7.65 | 98.82       | 105.70   |
| 8   | CV    | 823 | C    | N1-C2-O2    | 7.62  | 123.47      | 118.90   |
| 8   | DX    | 830 | A    | O4'-C1'-N9  | 7.61  | 114.29      | 108.20   |
| 8   | DX    | 818 | G    | P-O3'-C3'   | 7.61  | 128.83      | 119.70   |
| 8   | AY    | 864 | A    | C5-N7-C8    | -7.60 | 100.10      | 103.90   |
| 8   | BX    | 805 | U    | P-O3'-C3'   | 7.60  | 128.82      | 119.70   |
| 8   | DX    | 865 | C    | O4'-C1'-N1  | 7.60  | 114.28      | 108.20   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | DX    | 830 | A    | C3'-C2'-C1' | -7.59 | 95.42       | 101.50   |
| 8   | DV    | 832 | U    | N1-C2-O2    | 7.57  | 128.10      | 122.80   |
| 8   | BV    | 804 | G    | C5-N7-C8    | -7.57 | 100.52      | 104.30   |
| 8   | AX    | 834 | U    | P-O3'-C3'   | 7.56  | 128.78      | 119.70   |
| 8   | BV    | 825 | U    | O4'-C1'-N1  | 7.55  | 114.24      | 108.20   |
| 8   | CV    | 832 | U    | N1-C2-O2    | 7.54  | 128.07      | 122.80   |
| 8   | DV    | 813 | G    | O4'-C1'-N9  | 7.53  | 114.22      | 108.20   |
| 8   | BX    | 834 | U    | P-O3'-C3'   | 7.52  | 128.72      | 119.70   |
| 8   | BX    | 856 | C    | O4'-C1'-N1  | 7.51  | 114.21      | 108.20   |
| 8   | CX    | 802 | C    | O4'-C1'-N1  | 7.46  | 114.17      | 108.20   |
| 8   | DV    | 844 | U    | P-O3'-C3'   | 7.44  | 128.63      | 119.70   |
| 8   | BV    | 832 | U    | O4'-C1'-N1  | -7.44 | 102.25      | 108.20   |
| 8   | DX    | 843 | C    | C2-N3-C4    | -7.44 | 116.18      | 119.90   |
| 8   | AY    | 864 | A    | C4-C5-N7    | 7.43  | 114.42      | 110.70   |
| 8   | BY    | 826 | U    | N3-C4-O4    | 7.43  | 124.60      | 119.40   |
| 8   | DX    | 817 | A    | O4'-C1'-N9  | 7.43  | 114.14      | 108.20   |
| 8   | DY    | 803 | C    | O4'-C1'-N1  | 7.41  | 114.13      | 108.20   |
| 8   | CX    | 845 | C    | O4'-C1'-N1  | 7.36  | 114.09      | 108.20   |
| 8   | CV    | 837 | G    | P-O3'-C3'   | 7.35  | 128.52      | 119.70   |
| 8   | DY    | 811 | C    | P-O3'-C3'   | 7.35  | 128.52      | 119.70   |
| 8   | CY    | 817 | A    | P-O3'-C3'   | 7.32  | 128.49      | 119.70   |
| 8   | BV    | 809 | G    | N1-C6-O6    | 7.31  | 124.29      | 119.90   |
| 8   | BY    | 849 | G    | C5-C6-O6    | -7.30 | 124.22      | 128.60   |
| 8   | DV    | 827 | G    | O4'-C1'-N9  | 7.29  | 114.03      | 108.20   |
| 8   | BV    | 826 | U    | C6-N1-C2    | -7.28 | 116.63      | 121.00   |
| 8   | CX    | 820 | C    | O4'-C1'-N1  | -7.27 | 102.39      | 108.20   |
| 8   | AX    | 861 | G    | N1-C6-O6    | -7.25 | 115.55      | 119.90   |
| 8   | BV    | 868 | G    | O4'-C1'-N9  | 7.25  | 114.00      | 108.20   |
| 8   | BV    | 854 | A    | O5'-P-OP2   | -7.25 | 99.18       | 105.70   |
| 8   | DX    | 859 | A    | P-O3'-C3'   | 7.25  | 128.39      | 119.70   |
| 8   | BV    | 811 | C    | O4'-C1'-N1  | 7.24  | 113.99      | 108.20   |
| 8   | CY    | 840 | A    | N1-C6-N6    | 7.23  | 122.94      | 118.60   |
| 8   | DY    | 803 | C    | N1-C2-O2    | 7.23  | 123.24      | 118.90   |
| 8   | AV    | 823 | C    | C5-C4-N4    | -7.21 | 115.15      | 120.20   |
| 8   | DX    | 808 | C    | O4'-C1'-N1  | 7.21  | 113.97      | 108.20   |
| 8   | DV    | 811 | C    | O4'-C1'-N1  | 7.21  | 113.97      | 108.20   |
| 8   | AV    | 867 | G    | N9-C4-C5    | -7.21 | 102.52      | 105.40   |
| 8   | BY    | 845 | C    | N1-C1'-C2'  | 7.18  | 123.34      | 114.00   |
| 8   | DX    | 843 | C    | N3-C4-C5    | 7.18  | 124.77      | 121.90   |
| 8   | DY    | 864 | A    | N1-C6-N6    | 7.17  | 122.90      | 118.60   |
| 8   | CX    | 801 | G    | O4'-C1'-N9  | 7.17  | 113.94      | 108.20   |
| 8   | AX    | 861 | G    | N9-C4-C5    | 7.14  | 108.26      | 105.40   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | AY    | 848 | U    | O4'-C1'-N1  | 7.12  | 113.90      | 108.20   |
| 8   | DY    | 830 | A    | N1-C2-N3    | -7.12 | 125.74      | 129.30   |
| 8   | AY    | 865 | C    | N3-C2-O2    | -7.12 | 116.91      | 121.90   |
| 8   | CV    | 837 | G    | C4-C5-N7    | -7.12 | 107.95      | 110.80   |
| 8   | CX    | 833 | U    | OP1-P-OP2   | -7.12 | 108.93      | 119.60   |
| 8   | AY    | 843 | C    | C5'-C4'-O4' | 7.09  | 117.61      | 109.10   |
| 8   | AX    | 845 | C    | C6-N1-C2    | -7.06 | 117.47      | 120.30   |
| 8   | CX    | 841 | G    | P-O3'-C3'   | 7.06  | 128.17      | 119.70   |
| 8   | DY    | 842 | U    | O4'-C1'-N1  | 7.06  | 113.85      | 108.20   |
| 8   | AV    | 822 | G    | O4'-C1'-N9  | 7.05  | 113.84      | 108.20   |
| 8   | CY    | 840 | A    | C5-C6-N6    | -7.04 | 118.06      | 123.70   |
| 8   | DY    | 865 | C    | C5-C4-N4    | -7.04 | 115.27      | 120.20   |
| 8   | DV    | 822 | G    | C5-C6-O6    | -7.04 | 124.38      | 128.60   |
| 8   | CX    | 840 | A    | N1-C6-N6    | 7.03  | 122.82      | 118.60   |
| 8   | BX    | 830 | A    | C8-N9-C4    | 7.00  | 108.60      | 105.80   |
| 8   | AV    | 825 | U    | O4'-C1'-N1  | 7.00  | 113.80      | 108.20   |
| 8   | AX    | 804 | G    | N9-C4-C5    | -6.97 | 102.61      | 105.40   |
| 8   | DY    | 868 | G    | C1'-O4'-C4' | -6.96 | 104.33      | 109.90   |
| 8   | DX    | 829 | C    | N3-C2-O2    | -6.93 | 117.05      | 121.90   |
| 8   | CX    | 823 | C    | N1-C2-O2    | 6.92  | 123.05      | 118.90   |
| 8   | DX    | 829 | C    | O4'-C1'-N1  | 6.91  | 113.72      | 108.20   |
| 8   | BY    | 829 | C    | N3-C2-O2    | -6.90 | 117.07      | 121.90   |
| 8   | DV    | 849 | G    | P-O3'-C3'   | 6.89  | 127.97      | 119.70   |
| 8   | DV    | 832 | U    | N3-C2-O2    | -6.89 | 117.38      | 122.20   |
| 8   | BV    | 844 | U    | P-O3'-C3'   | 6.88  | 127.95      | 119.70   |
| 8   | BX    | 864 | A    | N1-C6-N6    | 6.88  | 122.73      | 118.60   |
| 8   | BX    | 858 | A    | P-O3'-C3'   | 6.87  | 127.94      | 119.70   |
| 8   | CX    | 807 | A    | O4'-C1'-N9  | 6.87  | 113.70      | 108.20   |
| 8   | DV    | 863 | G    | C5-C6-O6    | -6.86 | 124.48      | 128.60   |
| 8   | BV    | 804 | G    | C4-C5-N7    | 6.86  | 113.54      | 110.80   |
| 8   | DX    | 831 | A    | P-O3'-C3'   | 6.84  | 127.91      | 119.70   |
| 8   | BV    | 833 | U    | C5'-C4'-C3' | -6.84 | 105.05      | 116.00   |
| 8   | BY    | 827 | G    | N1-C6-O6    | 6.84  | 124.00      | 119.90   |
| 8   | AY    | 804 | G    | C8-N9-C4    | -6.82 | 103.67      | 106.40   |
| 8   | AV    | 802 | C    | O4'-C1'-N1  | 6.82  | 113.65      | 108.20   |
| 8   | CV    | 838 | A    | N9-C4-C5    | -6.82 | 103.07      | 105.80   |
| 8   | AY    | 868 | G    | O4'-C1'-N9  | 6.81  | 113.65      | 108.20   |
| 8   | DX    | 812 | U    | P-O3'-C3'   | 6.81  | 127.87      | 119.70   |
| 8   | CV    | 825 | U    | N3-C4-O4    | 6.80  | 124.16      | 119.40   |
| 2   | AP    | 295 | VAL  | O-C-N       | -6.79 | 111.83      | 122.70   |
| 8   | CY    | 865 | C    | O4'-C1'-N1  | 6.78  | 113.63      | 108.20   |
| 8   | BV    | 855 | C    | O4'-C1'-N1  | 6.78  | 113.62      | 108.20   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | BX    | 858 | A    | C2'-C3'-O3' | 6.78  | 124.54      | 113.70   |
| 8   | AY    | 864 | A    | C5-C6-N6    | -6.78 | 118.28      | 123.70   |
| 8   | DY    | 841 | G    | C5'-C4'-O4' | 6.78  | 117.23      | 109.10   |
| 8   | CV    | 837 | G    | C3'-C2'-C1' | 6.77  | 106.92      | 101.50   |
| 8   | AY    | 840 | A    | C5-C6-N6    | -6.77 | 118.28      | 123.70   |
| 8   | BV    | 816 | A    | C4'-C3'-C2' | -6.77 | 95.83       | 102.60   |
| 8   | DX    | 813 | G    | O4'-C4'-C3' | -6.77 | 97.23       | 104.00   |
| 8   | CV    | 835 | U    | N1-C2-N3    | -6.77 | 110.84      | 114.90   |
| 8   | DV    | 833 | U    | O4'-C1'-N1  | 6.75  | 113.60      | 108.20   |
| 8   | BX    | 816 | A    | P-O3'-C3'   | 6.74  | 127.79      | 119.70   |
| 8   | DV    | 838 | A    | P-O3'-C3'   | 6.74  | 127.79      | 119.70   |
| 8   | BY    | 826 | U    | C5-C4-O4    | -6.73 | 121.86      | 125.90   |
| 8   | CV    | 833 | U    | O4'-C1'-N1  | -6.73 | 102.82      | 108.20   |
| 8   | DY    | 805 | U    | O4'-C1'-N1  | 6.73  | 113.58      | 108.20   |
| 8   | AV    | 801 | G    | N1-C6-O6    | 6.72  | 123.93      | 119.90   |
| 8   | DY    | 867 | G    | P-O3'-C3'   | 6.71  | 127.76      | 119.70   |
| 8   | BY    | 830 | A    | C2-N3-C4    | 6.71  | 113.96      | 110.60   |
| 8   | BV    | 842 | U    | O4'-C1'-N1  | 6.68  | 113.55      | 108.20   |
| 8   | CV    | 839 | C    | C6-N1-C2    | 6.68  | 122.97      | 120.30   |
| 8   | CV    | 855 | C    | O4'-C1'-N1  | 6.67  | 113.54      | 108.20   |
| 8   | BV    | 833 | U    | C5'-C4'-O4' | 6.67  | 117.11      | 109.10   |
| 8   | BV    | 831 | A    | C5-C6-N6    | -6.67 | 118.37      | 123.70   |
| 8   | DY    | 865 | C    | O4'-C1'-N1  | 6.66  | 113.53      | 108.20   |
| 8   | CY    | 816 | A    | N7-C8-N9    | 6.66  | 117.13      | 113.80   |
| 8   | BV    | 868 | G    | C3'-C2'-C1' | 6.65  | 106.82      | 101.50   |
| 8   | AX    | 813 | G    | P-O3'-C3'   | 6.65  | 127.67      | 119.70   |
| 8   | CV    | 845 | C    | N1-C2-O2    | 6.63  | 122.88      | 118.90   |
| 8   | BY    | 835 | U    | C5-C4-O4    | 6.63  | 129.88      | 125.90   |
| 8   | BV    | 829 | C    | N3-C4-C5    | 6.62  | 124.55      | 121.90   |
| 8   | CX    | 816 | A    | C3'-C2'-C1' | -6.62 | 96.20       | 101.50   |
| 8   | DV    | 857 | U    | N3-C4-O4    | 6.61  | 124.03      | 119.40   |
| 8   | CX    | 804 | G    | N3-C4-N9    | 6.61  | 129.96      | 126.00   |
| 8   | AV    | 833 | U    | N3-C4-O4    | 6.60  | 124.02      | 119.40   |
| 8   | DV    | 834 | U    | P-O3'-C3'   | 6.60  | 127.62      | 119.70   |
| 8   | BX    | 807 | A    | O4'-C1'-N9  | 6.59  | 113.47      | 108.20   |
| 8   | AV    | 867 | G    | C4-C5-N7    | 6.57  | 113.43      | 110.80   |
| 8   | BV    | 816 | A    | N7-C8-N9    | 6.57  | 117.09      | 113.80   |
| 8   | CV    | 809 | G    | O4'-C1'-N9  | 6.57  | 113.45      | 108.20   |
| 8   | CV    | 837 | G    | C5-C6-O6    | 6.56  | 132.54      | 128.60   |
| 8   | BX    | 865 | C    | N1-C2-O2    | 6.54  | 122.83      | 118.90   |
| 8   | BV    | 864 | A    | N1-C6-N6    | 6.53  | 122.52      | 118.60   |
| 8   | CX    | 868 | G    | N1-C6-O6    | -6.52 | 115.99      | 119.90   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | DV    | 842 | U    | O4'-C1'-N1  | 6.51  | 113.41      | 108.20   |
| 8   | AV    | 830 | A    | C1'-O4'-C4' | -6.48 | 104.72      | 109.90   |
| 8   | CY    | 812 | U    | C3'-C2'-C1' | 6.47  | 106.68      | 101.50   |
| 8   | AV    | 810 | A    | P-O3'-C3'   | 6.47  | 127.46      | 119.70   |
| 8   | BV    | 843 | C    | C6-N1-C2    | -6.47 | 117.71      | 120.30   |
| 8   | CX    | 839 | C    | N3-C4-C5    | 6.46  | 124.49      | 121.90   |
| 8   | CX    | 808 | C    | N1-C2-O2    | 6.46  | 122.78      | 118.90   |
| 8   | DV    | 812 | U    | C3'-C2'-C1' | 6.46  | 106.67      | 101.50   |
| 8   | AY    | 848 | U    | P-O3'-C3'   | 6.45  | 127.44      | 119.70   |
| 8   | BV    | 867 | G    | N1-C6-O6    | -6.44 | 116.03      | 119.90   |
| 8   | BV    | 816 | A    | P-O3'-C3'   | 6.42  | 127.40      | 119.70   |
| 8   | CY    | 832 | U    | C5-C4-O4    | -6.41 | 122.06      | 125.90   |
| 8   | AX    | 841 | G    | C5'-C4'-O4' | 6.40  | 116.78      | 109.10   |
| 8   | AY    | 840 | A    | C5-C6-N1    | 6.39  | 120.90      | 117.70   |
| 8   | CY    | 858 | A    | P-O3'-C3'   | 6.38  | 127.36      | 119.70   |
| 8   | DX    | 811 | C    | O4'-C1'-N1  | 6.38  | 113.31      | 108.20   |
| 8   | CV    | 822 | G    | C5-N7-C8    | 6.37  | 107.48      | 104.30   |
| 8   | DX    | 851 | G    | C5'-C4'-O4' | 6.37  | 116.74      | 109.10   |
| 8   | BY    | 824 | A    | C4-C5-N7    | 6.35  | 113.88      | 110.70   |
| 8   | AX    | 862 | A    | C5'-C4'-O4' | -6.35 | 101.48      | 109.10   |
| 8   | CV    | 827 | G    | O4'-C1'-N9  | 6.35  | 113.28      | 108.20   |
| 8   | AY    | 860 | G    | P-O3'-C3'   | 6.34  | 127.31      | 119.70   |
| 8   | CY    | 838 | A    | C8-N9-C4    | 6.33  | 108.33      | 105.80   |
| 8   | CX    | 834 | U    | P-O3'-C3'   | 6.33  | 127.30      | 119.70   |
| 8   | DX    | 814 | A    | C3'-C2'-C1' | 6.33  | 106.56      | 101.50   |
| 8   | BY    | 854 | A    | O4'-C1'-N9  | 6.32  | 113.26      | 108.20   |
| 8   | DY    | 854 | A    | N1-C6-N6    | 6.32  | 122.39      | 118.60   |
| 8   | CV    | 804 | G    | N7-C8-N9    | 6.32  | 116.26      | 113.10   |
| 8   | AY    | 832 | U    | O4'-C1'-N1  | 6.32  | 113.25      | 108.20   |
| 8   | BY    | 825 | U    | C5-C4-O4    | 6.31  | 129.69      | 125.90   |
| 8   | DY    | 850 | G    | N3-C2-N2    | -6.31 | 115.48      | 119.90   |
| 8   | AY    | 857 | U    | O4'-C4'-C3' | -6.30 | 97.70       | 104.00   |
| 8   | DV    | 863 | G    | N1-C6-O6    | 6.29  | 123.68      | 119.90   |
| 8   | AY    | 832 | U    | P-O3'-C3'   | 6.29  | 127.25      | 119.70   |
| 8   | BY    | 850 | G    | C5-C6-N1    | 6.29  | 114.64      | 111.50   |
| 8   | CY    | 828 | G    | O4'-C1'-N9  | 6.28  | 113.22      | 108.20   |
| 8   | CX    | 845 | C    | N3-C4-N4    | 6.28  | 122.39      | 118.00   |
| 8   | AY    | 825 | U    | C5-C6-N1    | 6.27  | 125.83      | 122.70   |
| 8   | AV    | 858 | A    | C3'-C2'-C1' | 6.26  | 106.51      | 101.50   |
| 8   | BV    | 852 | U    | P-O3'-C3'   | -6.26 | 112.19      | 119.70   |
| 8   | BY    | 831 | A    | C5-C6-N1    | -6.26 | 114.57      | 117.70   |
| 8   | DV    | 825 | U    | O4'-C1'-N1  | 6.26  | 113.21      | 108.20   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | CY    | 853 | A    | O4'-C1'-N9  | 6.26  | 113.21      | 108.20   |
| 8   | AV    | 803 | C    | O4'-C1'-N1  | 6.25  | 113.20      | 108.20   |
| 8   | DY    | 825 | U    | C5-C4-O4    | -6.24 | 122.15      | 125.90   |
| 8   | AY    | 842 | U    | C5-C4-O4    | -6.24 | 122.16      | 125.90   |
| 8   | BV    | 845 | C    | OP2-P-O3'   | 6.24  | 118.93      | 105.20   |
| 8   | CY    | 858 | A    | C5'-C4'-O4' | 6.23  | 116.58      | 109.10   |
| 8   | AY    | 811 | C    | O4'-C1'-N1  | 6.23  | 113.19      | 108.20   |
| 8   | BX    | 850 | G    | P-O5'-C5'   | -6.23 | 110.93      | 120.90   |
| 8   | CV    | 863 | G    | C5-C6-N1    | 6.23  | 114.61      | 111.50   |
| 8   | CV    | 832 | U    | N3-C2-O2    | -6.22 | 117.84      | 122.20   |
| 8   | BV    | 854 | A    | O4'-C1'-N9  | 6.22  | 113.18      | 108.20   |
| 8   | CV    | 827 | G    | N1-C6-O6    | -6.22 | 116.17      | 119.90   |
| 8   | CV    | 820 | C    | N1-C1'-C2'  | -6.21 | 105.17      | 112.00   |
| 8   | BV    | 822 | G    | C5-C6-O6    | -6.21 | 124.88      | 128.60   |
| 8   | BY    | 866 | U    | C5'-C4'-O4' | 6.21  | 116.55      | 109.10   |
| 8   | DY    | 816 | A    | O4'-C1'-N9  | 6.20  | 113.16      | 108.20   |
| 8   | BV    | 849 | G    | C5-C6-N1    | 6.20  | 114.60      | 111.50   |
| 8   | AX    | 815 | A    | OP1-P-OP2   | -6.19 | 110.32      | 119.60   |
| 8   | DV    | 857 | U    | O4'-C1'-N1  | 6.19  | 113.15      | 108.20   |
| 8   | DV    | 803 | C    | N1-C2-O2    | 6.18  | 122.61      | 118.90   |
| 8   | BY    | 822 | G    | O4'-C1'-N9  | 6.18  | 113.14      | 108.20   |
| 8   | DX    | 832 | U    | N3-C2-O2    | -6.17 | 117.88      | 122.20   |
| 8   | CV    | 858 | A    | O4'-C1'-N9  | -6.17 | 103.26      | 108.20   |
| 8   | DX    | 820 | C    | C4'-C3'-C2' | -6.17 | 96.43       | 102.60   |
| 8   | AX    | 856 | C    | N3-C2-O2    | 6.16  | 126.21      | 121.90   |
| 8   | CY    | 856 | C    | N3-C2-O2    | -6.16 | 117.59      | 121.90   |
| 8   | AY    | 809 | G    | C8-N9-C4    | -6.16 | 103.94      | 106.40   |
| 8   | CX    | 865 | C    | C6-N1-C2    | -6.16 | 117.84      | 120.30   |
| 8   | AY    | 851 | G    | O4'-C1'-N9  | 6.15  | 113.12      | 108.20   |
| 8   | CY    | 866 | U    | O4'-C1'-N1  | 6.15  | 113.12      | 108.20   |
| 8   | AY    | 839 | C    | C6-N1-C2    | -6.14 | 117.84      | 120.30   |
| 8   | DV    | 851 | G    | C8-N9-C4    | -6.14 | 103.94      | 106.40   |
| 8   | DX    | 843 | C    | P-O5'-C5'   | -6.14 | 111.08      | 120.90   |
| 8   | CV    | 839 | C    | O5'-P-OP1   | -6.13 | 100.18      | 105.70   |
| 8   | CY    | 863 | G    | C8-N9-C4    | -6.13 | 103.95      | 106.40   |
| 8   | DV    | 846 | U    | O4'-C1'-N1  | 6.13  | 113.11      | 108.20   |
| 8   | DY    | 851 | G    | N1-C6-O6    | 6.13  | 123.58      | 119.90   |
| 8   | AV    | 862 | A    | P-O3'-C3'   | 6.13  | 127.05      | 119.70   |
| 8   | CY    | 838 | A    | N9-C4-C5    | -6.13 | 103.35      | 105.80   |
| 8   | DX    | 815 | A    | C4'-C3'-C2' | -6.13 | 96.47       | 102.60   |
| 8   | AX    | 840 | A    | C5'-C4'-O4' | 6.11  | 116.43      | 109.10   |
| 8   | BY    | 811 | C    | O4'-C1'-N1  | 6.11  | 113.09      | 108.20   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | BV    | 854 | A    | N7-C8-N9    | 6.11  | 116.85      | 113.80   |
| 8   | DY    | 830 | A    | P-O3'-C3'   | 6.11  | 127.03      | 119.70   |
| 8   | CY    | 815 | A    | P-O3'-C3'   | 6.10  | 127.02      | 119.70   |
| 8   | AX    | 862 | A    | P-O3'-C3'   | 6.08  | 127.00      | 119.70   |
| 8   | BX    | 806 | G    | C3'-C2'-C1' | 6.08  | 106.36      | 101.50   |
| 8   | BV    | 849 | G    | C1'-O4'-C4' | -6.08 | 105.04      | 109.90   |
| 8   | AX    | 824 | A    | P-O3'-C3'   | 6.07  | 126.98      | 119.70   |
| 8   | DX    | 827 | G    | O5'-P-OP2   | -6.05 | 100.25      | 105.70   |
| 8   | CY    | 825 | U    | O4'-C1'-N1  | 6.05  | 113.04      | 108.20   |
| 8   | BX    | 803 | C    | O4'-C1'-N1  | 6.04  | 113.04      | 108.20   |
| 8   | CX    | 830 | A    | O4'-C1'-N9  | 6.04  | 113.03      | 108.20   |
| 8   | CV    | 844 | U    | O4'-C1'-N1  | 6.03  | 113.02      | 108.20   |
| 8   | BY    | 850 | G    | O4'-C1'-N9  | 6.02  | 113.01      | 108.20   |
| 8   | DY    | 851 | G    | C4-C5-N7    | 6.02  | 113.21      | 110.80   |
| 8   | CY    | 822 | G    | O4'-C1'-N9  | 6.01  | 113.01      | 108.20   |
| 8   | DY    | 863 | G    | C6-C5-N7    | -6.00 | 126.80      | 130.40   |
| 8   | AV    | 841 | G    | O4'-C1'-N9  | 5.99  | 113.00      | 108.20   |
| 8   | DY    | 868 | G    | C4-C5-N7    | -5.99 | 108.41      | 110.80   |
| 8   | CX    | 811 | C    | O4'-C1'-N1  | 5.98  | 112.99      | 108.20   |
| 8   | AV    | 827 | G    | C5-C6-N1    | 5.97  | 114.49      | 111.50   |
| 8   | AX    | 841 | G    | C5-C6-O6    | -5.97 | 125.02      | 128.60   |
| 8   | AX    | 814 | A    | OP2-P-O3'   | 5.97  | 118.34      | 105.20   |
| 8   | DY    | 807 | A    | C5-C6-N6    | -5.97 | 118.92      | 123.70   |
| 8   | CV    | 828 | G    | O4'-C1'-N9  | 5.97  | 112.97      | 108.20   |
| 8   | AY    | 851 | G    | C8-N9-C4    | -5.96 | 104.02      | 106.40   |
| 8   | AY    | 805 | U    | P-O3'-C3'   | 5.96  | 126.85      | 119.70   |
| 8   | BY    | 863 | G    | C5'-C4'-C3' | -5.96 | 106.47      | 116.00   |
| 8   | BV    | 804 | G    | C5-C6-O6    | -5.95 | 125.03      | 128.60   |
| 8   | BV    | 837 | G    | C4'-C3'-C2' | 5.95  | 108.55      | 102.60   |
| 8   | CX    | 840 | A    | N9-C4-C5    | -5.95 | 103.42      | 105.80   |
| 8   | AX    | 854 | A    | C8-N9-C4    | -5.94 | 103.42      | 105.80   |
| 8   | BX    | 851 | G    | C5'-C4'-O4' | 5.93  | 116.22      | 109.10   |
| 8   | AV    | 866 | U    | O4'-C1'-N1  | 5.92  | 112.94      | 108.20   |
| 8   | CY    | 812 | U    | O5'-P-OP2   | -5.92 | 100.37      | 105.70   |
| 8   | AX    | 851 | G    | C5-C6-N1    | 5.91  | 114.45      | 111.50   |
| 8   | BY    | 849 | G    | N1-C6-O6    | 5.91  | 123.44      | 119.90   |
| 8   | DX    | 867 | G    | C8-N9-C4    | -5.90 | 104.04      | 106.40   |
| 8   | AV    | 833 | U    | C5-C4-O4    | -5.90 | 122.36      | 125.90   |
| 8   | AV    | 865 | C    | O4'-C1'-N1  | 5.89  | 112.92      | 108.20   |
| 8   | BX    | 841 | G    | O4'-C1'-N9  | 5.89  | 112.92      | 108.20   |
| 8   | BY    | 818 | G    | C8-N9-C4    | -5.89 | 104.04      | 106.40   |
| 8   | BX    | 843 | C    | O4'-C1'-N1  | 5.89  | 112.91      | 108.20   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | AY    | 813 | G    | O4'-C1'-N9  | 5.88  | 112.90      | 108.20   |
| 8   | BX    | 840 | A    | C5'-C4'-O4' | 5.87  | 116.14      | 109.10   |
| 8   | BY    | 806 | G    | C3'-C2'-C1' | 5.87  | 106.19      | 101.50   |
| 8   | AV    | 831 | A    | O5'-P-OP1   | 5.86  | 117.73      | 110.70   |
| 8   | AX    | 852 | U    | O4'-C1'-N1  | 5.86  | 112.89      | 108.20   |
| 8   | BV    | 828 | G    | N1-C6-O6    | -5.86 | 116.39      | 119.90   |
| 8   | DX    | 815 | A    | O3'-P-O5'   | 5.86  | 115.13      | 104.00   |
| 8   | BX    | 815 | A    | C4'-C3'-C2' | -5.86 | 96.74       | 102.60   |
| 8   | AX    | 839 | C    | O4'-C1'-N1  | 5.85  | 112.88      | 108.20   |
| 8   | AX    | 854 | A    | P-O3'-C3'   | 5.85  | 126.72      | 119.70   |
| 8   | DX    | 864 | A    | C2'-C3'-O3' | 5.85  | 123.06      | 113.70   |
| 8   | BV    | 809 | G    | C5-C6-O6    | -5.85 | 125.09      | 128.60   |
| 8   | CV    | 865 | C    | O4'-C1'-N1  | 5.83  | 112.87      | 108.20   |
| 8   | BY    | 841 | G    | C5'-C4'-O4' | 5.83  | 116.10      | 109.10   |
| 8   | CY    | 863 | G    | C3'-C2'-C1' | 5.83  | 106.16      | 101.50   |
| 8   | CY    | 831 | A    | C8-N9-C4    | 5.82  | 108.13      | 105.80   |
| 8   | AX    | 846 | U    | O4'-C1'-N1  | 5.82  | 112.86      | 108.20   |
| 8   | BV    | 831 | A    | C4-C5-N7    | 5.82  | 113.61      | 110.70   |
| 8   | CY    | 863 | G    | P-O3'-C3'   | 5.82  | 126.68      | 119.70   |
| 8   | BY    | 835 | U    | N3-C4-O4    | -5.81 | 115.33      | 119.40   |
| 8   | AY    | 823 | C    | O4'-C1'-N1  | 5.81  | 112.85      | 108.20   |
| 8   | AV    | 854 | A    | P-O3'-C3'   | 5.81  | 126.67      | 119.70   |
| 8   | AV    | 831 | A    | O4'-C1'-N9  | -5.80 | 103.56      | 108.20   |
| 8   | CY    | 824 | A    | N1-C6-N6    | 5.80  | 122.08      | 118.60   |
| 8   | DV    | 855 | C    | N1-C2-O2    | 5.80  | 122.38      | 118.90   |
| 8   | DY    | 851 | G    | C6-C5-N7    | -5.80 | 126.92      | 130.40   |
| 8   | AV    | 854 | A    | C4'-C3'-C2' | -5.79 | 96.81       | 102.60   |
| 8   | AX    | 861 | G    | C8-N9-C4    | -5.79 | 104.08      | 106.40   |
| 8   | BV    | 847 | A    | O4'-C1'-N9  | 5.79  | 112.83      | 108.20   |
| 8   | BX    | 864 | A    | O4'-C1'-N9  | 5.79  | 112.83      | 108.20   |
| 8   | CX    | 854 | A    | P-O3'-C3'   | 5.79  | 126.64      | 119.70   |
| 8   | CV    | 835 | U    | C5-C4-O4    | -5.78 | 122.43      | 125.90   |
| 3   | DQ    | 414 | LEU  | O-C-N       | -5.78 | 113.46      | 122.70   |
| 8   | CX    | 829 | C    | N3-C2-O2    | 5.77  | 125.94      | 121.90   |
| 8   | CX    | 856 | C    | C4'-C3'-C2' | -5.77 | 96.83       | 102.60   |
| 8   | BV    | 806 | G    | C5-C6-O6    | -5.77 | 125.14      | 128.60   |
| 8   | DX    | 806 | G    | P-O3'-C3'   | 5.76  | 126.62      | 119.70   |
| 8   | AX    | 845 | C    | C5-C6-N1    | 5.76  | 123.88      | 121.00   |
| 8   | BX    | 864 | A    | C4-C5-N7    | 5.76  | 113.58      | 110.70   |
| 8   | AY    | 823 | C    | N1-C2-O2    | 5.76  | 122.36      | 118.90   |
| 8   | AY    | 858 | A    | P-O3'-C3'   | 5.75  | 126.61      | 119.70   |
| 8   | AY    | 863 | G    | N3-C2-N2    | -5.75 | 115.87      | 119.90   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | CV    | 804 | G    | C8-N9-C4    | -5.75 | 104.10      | 106.40   |
| 8   | AX    | 856 | C    | N3-C4-N4    | 5.74  | 122.02      | 118.00   |
| 8   | BY    | 836 | U    | C3'-C2'-C1' | 5.74  | 106.09      | 101.50   |
| 8   | BV    | 835 | U    | N1-C1'-C2'  | -5.74 | 105.69      | 112.00   |
| 8   | DX    | 835 | U    | N1-C1'-C2'  | -5.74 | 105.69      | 112.00   |
| 8   | BY    | 803 | C    | N1-C2-O2    | 5.73  | 122.34      | 118.90   |
| 8   | DV    | 850 | G    | C5-C6-N1    | 5.72  | 114.36      | 111.50   |
| 8   | DY    | 803 | C    | C3'-C2'-C1' | 5.72  | 106.08      | 101.50   |
| 8   | AX    | 811 | C    | P-O3'-C3'   | 5.72  | 126.56      | 119.70   |
| 8   | DY    | 802 | C    | N3-C4-C5    | 5.71  | 124.18      | 121.90   |
| 8   | CX    | 811 | C    | C3'-C2'-C1' | -5.71 | 96.93       | 101.50   |
| 8   | CV    | 861 | G    | O4'-C1'-N9  | 5.70  | 112.76      | 108.20   |
| 8   | BV    | 826 | U    | C5-C4-O4    | 5.70  | 129.32      | 125.90   |
| 8   | CX    | 816 | A    | O4'-C1'-N9  | 5.69  | 112.75      | 108.20   |
| 8   | CX    | 828 | G    | N3-C4-N9    | 5.68  | 129.41      | 126.00   |
| 8   | BY    | 814 | A    | C3'-C2'-C1' | 5.68  | 106.05      | 101.50   |
| 8   | AX    | 804 | G    | N3-C4-C5    | -5.68 | 125.76      | 128.60   |
| 8   | BV    | 854 | A    | C8-N9-C4    | -5.68 | 103.53      | 105.80   |
| 8   | DV    | 857 | U    | N3-C4-C5    | -5.68 | 111.19      | 114.60   |
| 8   | AV    | 857 | U    | N3-C2-O2    | -5.68 | 118.23      | 122.20   |
| 8   | BY    | 828 | G    | O4'-C1'-C2' | -5.67 | 100.13      | 105.80   |
| 8   | AV    | 811 | C    | O4'-C1'-N1  | 5.67  | 112.74      | 108.20   |
| 8   | CX    | 812 | U    | O4'-C1'-N1  | 5.66  | 112.73      | 108.20   |
| 8   | DX    | 855 | C    | N3-C4-C5    | -5.66 | 119.64      | 121.90   |
| 5   | BE    | 630 | ARG  | NE-CZ-NH1   | 5.66  | 123.13      | 120.30   |
| 8   | BV    | 826 | U    | N1-C2-N3    | 5.66  | 118.29      | 114.90   |
| 8   | DY    | 831 | A    | O4'-C1'-C2' | 5.65  | 112.68      | 107.60   |
| 8   | BV    | 826 | U    | C5'-C4'-O4' | 5.65  | 115.88      | 109.10   |
| 8   | AY    | 804 | G    | N7-C8-N9    | 5.65  | 115.92      | 113.10   |
| 8   | AX    | 842 | U    | O4'-C1'-N1  | 5.64  | 112.71      | 108.20   |
| 8   | DV    | 850 | G    | N1-C6-O6    | -5.64 | 116.52      | 119.90   |
| 8   | AX    | 863 | G    | C5-C6-O6    | -5.64 | 125.22      | 128.60   |
| 8   | BY    | 828 | G    | O4'-C1'-N9  | 5.63  | 112.70      | 108.20   |
| 8   | CX    | 868 | G    | C5-C6-O6    | 5.63  | 131.98      | 128.60   |
| 8   | AY    | 816 | A    | C4'-C3'-C2' | -5.63 | 96.97       | 102.60   |
| 8   | DX    | 830 | A    | C6-C5-N7    | 5.63  | 136.24      | 132.30   |
| 8   | DX    | 866 | U    | C3'-C2'-C1' | 5.62  | 106.00      | 101.50   |
| 8   | BV    | 828 | G    | C5-C6-N1    | 5.62  | 114.31      | 111.50   |
| 8   | BV    | 823 | C    | P-O3'-C3'   | 5.62  | 126.44      | 119.70   |
| 8   | DX    | 855 | C    | C2-N3-C4    | 5.61  | 122.71      | 119.90   |
| 8   | BV    | 826 | U    | O4'-C1'-C2' | -5.61 | 100.19      | 105.80   |
| 8   | BV    | 843 | C    | C5-C4-N4    | 5.61  | 124.13      | 120.20   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | DX    | 828 | G    | O4'-C1'-N9  | 5.61  | 112.69      | 108.20   |
| 8   | DX    | 830 | A    | N1-C6-N6    | -5.61 | 115.24      | 118.60   |
| 8   | BX    | 864 | A    | C5-N7-C8    | -5.61 | 101.10      | 103.90   |
| 8   | DX    | 849 | G    | P-O3'-C3'   | 5.61  | 126.43      | 119.70   |
| 8   | BV    | 833 | U    | O4'-C1'-N1  | 5.60  | 112.68      | 108.20   |
| 8   | DY    | 840 | A    | N1-C6-N6    | 5.60  | 121.96      | 118.60   |
| 3   | AC    | 346 | CYS  | CA-CB-SG    | -5.59 | 103.93      | 114.00   |
| 8   | AV    | 842 | U    | O4'-C1'-N1  | 5.59  | 112.67      | 108.20   |
| 8   | CV    | 802 | C    | C5-C4-N4    | 5.59  | 124.11      | 120.20   |
| 8   | CV    | 838 | A    | C8-N9-C4    | 5.58  | 108.03      | 105.80   |
| 8   | DY    | 804 | G    | N1-C2-N2    | 5.58  | 121.22      | 116.20   |
| 8   | AY    | 801 | G    | O4'-C1'-C2' | -5.58 | 100.22      | 105.80   |
| 8   | BY    | 838 | A    | N1-C6-N6    | 5.58  | 121.94      | 118.60   |
| 8   | CY    | 831 | A    | O4'-C1'-N9  | -5.57 | 103.74      | 108.20   |
| 8   | AV    | 842 | U    | C5'-C4'-O4' | 5.57  | 115.78      | 109.10   |
| 8   | BV    | 804 | G    | N1-C6-O6    | 5.56  | 123.24      | 119.90   |
| 8   | BY    | 814 | A    | N9-C1'-C2'  | 5.55  | 121.22      | 114.00   |
| 8   | BX    | 825 | U    | O4'-C1'-N1  | 5.55  | 112.64      | 108.20   |
| 8   | DY    | 830 | A    | C6-N1-C2    | 5.55  | 121.93      | 118.60   |
| 8   | CX    | 856 | C    | C3'-C2'-C1' | -5.54 | 97.07       | 101.50   |
| 8   | BY    | 841 | G    | O4'-C1'-N9  | 5.54  | 112.63      | 108.20   |
| 8   | BX    | 852 | U    | O5'-P-OP1   | -5.54 | 100.72      | 105.70   |
| 8   | CV    | 823 | C    | N3-C2-O2    | -5.54 | 118.02      | 121.90   |
| 8   | CV    | 850 | G    | P-O3'-C3'   | 5.54  | 126.34      | 119.70   |
| 8   | AV    | 804 | G    | C5-C6-O6    | -5.53 | 125.28      | 128.60   |
| 8   | AV    | 801 | G    | C1'-O4'-C4' | -5.53 | 105.48      | 109.90   |
| 8   | CY    | 804 | G    | P-O3'-C3'   | 5.53  | 126.33      | 119.70   |
| 8   | CY    | 831 | A    | P-O3'-C3'   | 5.53  | 126.33      | 119.70   |
| 8   | CV    | 802 | C    | N3-C4-N4    | -5.53 | 114.13      | 118.00   |
| 8   | DV    | 866 | U    | N3-C4-O4    | 5.52  | 123.27      | 119.40   |
| 8   | BV    | 836 | U    | C5-C6-N1    | 5.51  | 125.46      | 122.70   |
| 8   | BX    | 850 | G    | C6-C5-N7    | -5.51 | 127.09      | 130.40   |
| 8   | BV    | 809 | G    | O4'-C1'-N9  | 5.51  | 112.61      | 108.20   |
| 8   | DX    | 813 | G    | N3-C4-C5    | 5.50  | 131.35      | 128.60   |
| 8   | DV    | 866 | U    | O4'-C1'-N1  | 5.50  | 112.60      | 108.20   |
| 8   | CX    | 866 | U    | C5'-C4'-O4' | 5.49  | 115.69      | 109.10   |
| 8   | DY    | 847 | A    | N9-C4-C5    | -5.49 | 103.60      | 105.80   |
| 8   | BX    | 842 | U    | C3'-C2'-C1' | -5.49 | 97.11       | 101.50   |
| 8   | BY    | 850 | G    | N3-C4-N9    | 5.49  | 129.29      | 126.00   |
| 8   | BY    | 829 | C    | C1'-O4'-C4' | -5.48 | 105.51      | 109.90   |
| 8   | BY    | 856 | C    | N1-C2-O2    | 5.48  | 122.19      | 118.90   |
| 8   | CX    | 804 | G    | C2-N3-C4    | 5.48  | 114.64      | 111.90   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | AV    | 823 | C    | C3'-C2'-C1' | 5.48  | 105.88      | 101.50   |
| 8   | BY    | 818 | G    | C3'-C2'-C1' | 5.48  | 105.88      | 101.50   |
| 8   | AY    | 865 | C    | C6-N1-C2    | -5.47 | 118.11      | 120.30   |
| 8   | CY    | 847 | A    | N9-C4-C5    | -5.47 | 103.61      | 105.80   |
| 8   | CY    | 848 | U    | N3-C2-O2    | -5.47 | 118.37      | 122.20   |
| 8   | AX    | 860 | G    | O4'-C1'-N9  | 5.47  | 112.58      | 108.20   |
| 8   | DX    | 867 | G    | N7-C8-N9    | 5.47  | 115.84      | 113.10   |
| 8   | AV    | 823 | C    | N3-C4-N4    | 5.47  | 121.83      | 118.00   |
| 8   | BY    | 868 | G    | N3-C4-N9    | 5.47  | 129.28      | 126.00   |
| 8   | CV    | 832 | U    | C4-C5-C6    | -5.47 | 116.42      | 119.70   |
| 8   | CV    | 861 | G    | P-O3'-C3'   | 5.47  | 126.26      | 119.70   |
| 8   | BY    | 840 | A    | C4-C5-N7    | 5.47  | 113.43      | 110.70   |
| 8   | AY    | 840 | A    | C2-N3-C4    | 5.46  | 113.33      | 110.60   |
| 8   | AV    | 847 | A    | N1-C6-N6    | 5.46  | 121.88      | 118.60   |
| 8   | AY    | 864 | A    | C5'-C4'-O4' | 5.46  | 115.66      | 109.10   |
| 8   | CY    | 840 | A    | C5'-C4'-O4' | 5.46  | 115.65      | 109.10   |
| 8   | BX    | 809 | G    | C3'-C2'-C1' | 5.46  | 105.87      | 101.50   |
| 8   | DV    | 804 | G    | C6-C5-N7    | -5.46 | 127.12      | 130.40   |
| 8   | DX    | 839 | C    | N1-C2-O2    | 5.46  | 122.17      | 118.90   |
| 8   | BV    | 841 | G    | O4'-C1'-N9  | 5.45  | 112.56      | 108.20   |
| 8   | DV    | 867 | G    | O4'-C1'-N9  | -5.45 | 103.84      | 108.20   |
| 8   | AY    | 802 | C    | O4'-C1'-C2' | -5.44 | 100.36      | 105.80   |
| 8   | DY    | 811 | C    | C4'-C3'-C2' | -5.44 | 97.16       | 102.60   |
| 8   | DV    | 850 | G    | P-O3'-C3'   | 5.44  | 126.23      | 119.70   |
| 8   | AV    | 845 | C    | OP2-P-O3'   | 5.44  | 117.17      | 105.20   |
| 8   | AX    | 840 | A    | N1-C6-N6    | 5.44  | 121.86      | 118.60   |
| 8   | DX    | 807 | A    | OP1-P-OP2   | -5.43 | 111.45      | 119.60   |
| 8   | AV    | 836 | U    | C4'-C3'-C2' | 5.43  | 108.03      | 102.60   |
| 8   | BX    | 865 | C    | N3-C2-O2    | -5.43 | 118.10      | 121.90   |
| 8   | BY    | 828 | G    | N7-C8-N9    | 5.42  | 115.81      | 113.10   |
| 8   | AV    | 801 | G    | C4-C5-N7    | 5.42  | 112.97      | 110.80   |
| 8   | AV    | 817 | A    | P-O5'-C5'   | 5.41  | 129.56      | 120.90   |
| 8   | DY    | 868 | G    | O4'-C1'-N9  | 5.41  | 112.53      | 108.20   |
| 8   | DY    | 866 | U    | O4'-C1'-N1  | 5.41  | 112.53      | 108.20   |
| 8   | BY    | 803 | C    | N3-C4-C5    | -5.41 | 119.74      | 121.90   |
| 8   | CV    | 837 | G    | O4'-C1'-N9  | 5.41  | 112.53      | 108.20   |
| 8   | AV    | 828 | G    | O5'-P-OP1   | -5.40 | 100.84      | 105.70   |
| 8   | CX    | 836 | U    | C3'-C2'-C1' | 5.40  | 105.82      | 101.50   |
| 8   | DY    | 851 | G    | N9-C4-C5    | -5.40 | 103.24      | 105.40   |
| 8   | BY    | 825 | U    | N1-C1'-C2'  | 5.40  | 121.02      | 114.00   |
| 8   | AX    | 818 | G    | C4'-C3'-C2' | 5.39  | 107.99      | 102.60   |
| 8   | DY    | 851 | G    | N3-C4-N9    | 5.39  | 129.24      | 126.00   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | CV    | 848 | U    | P-O3'-C3'   | 5.39  | 126.17      | 119.70   |
| 8   | DV    | 819 | U    | O4'-C1'-N1  | 5.39  | 112.51      | 108.20   |
| 8   | DV    | 824 | A    | C5'-C4'-O4' | -5.39 | 102.63      | 109.10   |
| 8   | DX    | 853 | A    | O4'-C1'-N9  | 5.39  | 112.52      | 108.20   |
| 8   | AV    | 842 | U    | C5-C6-N1    | 5.39  | 125.40      | 122.70   |
| 8   | DV    | 850 | G    | C5'-C4'-O4' | 5.39  | 115.56      | 109.10   |
| 8   | CX    | 804 | G    | N7-C8-N9    | 5.39  | 115.79      | 113.10   |
| 8   | BV    | 816 | A    | C8-N9-C4    | -5.38 | 103.65      | 105.80   |
| 8   | CV    | 858 | A    | C3'-C2'-C1' | 5.38  | 105.81      | 101.50   |
| 8   | CY    | 803 | C    | C3'-C2'-C1' | 5.38  | 105.81      | 101.50   |
| 8   | BY    | 856 | C    | N3-C2-O2    | -5.38 | 118.13      | 121.90   |
| 8   | DX    | 858 | A    | P-O5'-C5'   | -5.38 | 112.29      | 120.90   |
| 8   | CX    | 804 | G    | C6-C5-N7    | -5.38 | 127.17      | 130.40   |
| 8   | BY    | 839 | C    | C6-N1-C2    | -5.37 | 118.15      | 120.30   |
| 8   | BV    | 804 | G    | C3'-C2'-C1' | -5.37 | 97.21       | 101.50   |
| 8   | CX    | 860 | G    | P-O3'-C3'   | 5.37  | 126.14      | 119.70   |
| 8   | DY    | 802 | C    | N3-C4-N4    | -5.37 | 114.24      | 118.00   |
| 8   | DV    | 860 | G    | P-O3'-C3'   | 5.36  | 126.14      | 119.70   |
| 8   | CV    | 825 | U    | C5-C6-N1    | 5.36  | 125.38      | 122.70   |
| 8   | BY    | 828 | G    | C4'-C3'-C2' | -5.36 | 97.24       | 102.60   |
| 8   | BY    | 838 | A    | C2-N3-C4    | -5.36 | 107.92      | 110.60   |
| 8   | AY    | 812 | U    | C3'-C2'-C1' | 5.35  | 105.78      | 101.50   |
| 8   | BV    | 864 | A    | C2-N3-C4    | -5.35 | 107.92      | 110.60   |
| 8   | AY    | 849 | G    | N1-C2-N2    | 5.35  | 121.01      | 116.20   |
| 8   | BX    | 847 | A    | N9-C1'-C2'  | 5.35  | 120.95      | 114.00   |
| 8   | BX    | 865 | C    | O4'-C1'-N1  | 5.35  | 112.48      | 108.20   |
| 8   | AY    | 814 | A    | O5'-P-OP2   | -5.35 | 100.89      | 105.70   |
| 8   | DX    | 862 | A    | O4'-C1'-N9  | 5.35  | 112.48      | 108.20   |
| 8   | DY    | 836 | U    | C3'-C2'-C1' | 5.35  | 105.78      | 101.50   |
| 8   | BY    | 848 | U    | C3'-C2'-C1' | 5.34  | 105.78      | 101.50   |
| 8   | DX    | 856 | C    | C5-C6-N1    | 5.34  | 123.67      | 121.00   |
| 8   | BX    | 831 | A    | N9-C1'-C2'  | 5.34  | 120.94      | 114.00   |
| 8   | DX    | 833 | U    | N1-C2-O2    | 5.34  | 126.54      | 122.80   |
| 8   | BX    | 833 | U    | C5-C4-O4    | -5.34 | 122.70      | 125.90   |
| 8   | CY    | 863 | G    | N7-C8-N9    | 5.34  | 115.77      | 113.10   |
| 8   | DY    | 861 | G    | C3'-C2'-C1' | -5.33 | 97.23       | 101.50   |
| 8   | CV    | 856 | C    | C5'-C4'-O4' | 5.33  | 115.50      | 109.10   |
| 8   | CY    | 856 | C    | N3-C4-N4    | -5.33 | 114.27      | 118.00   |
| 5   | AS    | 674 | LEU  | CB-CG-CD1   | -5.33 | 101.94      | 111.00   |
| 8   | DX    | 819 | U    | OP2-P-O3'   | 5.33  | 116.92      | 105.20   |
| 8   | DX    | 833 | U    | N3-C2-O2    | -5.32 | 118.47      | 122.20   |
| 8   | CY    | 840 | A    | C4-C5-N7    | 5.32  | 113.36      | 110.70   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | BY    | 845 | C    | C3'-C2'-C1' | 5.32  | 105.75      | 101.50   |
| 8   | CV    | 826 | U    | C5-C6-N1    | 5.32  | 125.36      | 122.70   |
| 8   | CX    | 814 | A    | N1-C6-N6    | 5.31  | 121.79      | 118.60   |
| 8   | CX    | 850 | G    | C4'-C3'-C2' | -5.31 | 97.29       | 102.60   |
| 8   | DX    | 841 | G    | C4-C5-N7    | 5.31  | 112.92      | 110.80   |
| 8   | BY    | 810 | A    | O4'-C1'-N9  | 5.31  | 112.44      | 108.20   |
| 8   | BY    | 825 | U    | C5'-C4'-O4' | -5.30 | 102.74      | 109.10   |
| 8   | CY    | 833 | U    | C5-C4-O4    | -5.30 | 122.72      | 125.90   |
| 8   | DY    | 847 | A    | C8-N9-C4    | 5.30  | 107.92      | 105.80   |
| 8   | DX    | 825 | U    | N1-C2-O2    | 5.30  | 126.51      | 122.80   |
| 8   | BY    | 850 | G    | N3-C4-C5    | -5.29 | 125.95      | 128.60   |
| 8   | AV    | 804 | G    | N1-C6-O6    | 5.29  | 123.07      | 119.90   |
| 8   | BV    | 839 | C    | P-O3'-C3'   | 5.28  | 126.04      | 119.70   |
| 8   | DY    | 864 | A    | O5'-P-OP2   | -5.28 | 100.95      | 105.70   |
| 8   | CX    | 829 | C    | O4'-C1'-N1  | 5.28  | 112.42      | 108.20   |
| 8   | AV    | 857 | U    | C1'-O4'-C4' | -5.27 | 105.68      | 109.90   |
| 8   | CX    | 838 | A    | P-O3'-C3'   | 5.27  | 126.03      | 119.70   |
| 8   | CY    | 836 | U    | C3'-C2'-C1' | 5.27  | 105.72      | 101.50   |
| 8   | BY    | 849 | G    | P-O3'-C3'   | 5.26  | 126.01      | 119.70   |
| 8   | BX    | 837 | G    | C4-C5-N7    | 5.25  | 112.90      | 110.80   |
| 8   | CX    | 845 | C    | C5-C6-N1    | 5.25  | 123.62      | 121.00   |
| 8   | CV    | 829 | C    | N1-C2-O2    | 5.25  | 122.05      | 118.90   |
| 8   | BV    | 823 | C    | N3-C4-C5    | -5.25 | 119.80      | 121.90   |
| 8   | BY    | 806 | G    | C1'-O4'-C4' | 5.24  | 114.09      | 109.90   |
| 8   | BX    | 849 | G    | P-O3'-C3'   | 5.23  | 125.98      | 119.70   |
| 8   | CY    | 826 | U    | O4'-C1'-N1  | 5.23  | 112.39      | 108.20   |
| 8   | DY    | 839 | C    | N1-C2-O2    | 5.23  | 122.04      | 118.90   |
| 8   | BV    | 804 | G    | OP1-P-OP2   | -5.23 | 111.76      | 119.60   |
| 8   | CV    | 824 | A    | C5-C6-N1    | -5.23 | 115.09      | 117.70   |
| 8   | DX    | 858 | A    | C4'-C3'-C2' | -5.22 | 97.38       | 102.60   |
| 8   | DX    | 853 | A    | C1'-O4'-C4' | 5.22  | 114.08      | 109.90   |
| 8   | CY    | 816 | A    | C5-N7-C8    | -5.22 | 101.29      | 103.90   |
| 8   | DY    | 861 | G    | C4'-C3'-C2' | -5.22 | 97.38       | 102.60   |
| 8   | AX    | 851 | G    | C8-N9-C4    | -5.22 | 104.31      | 106.40   |
| 8   | BX    | 858 | A    | O4'-C1'-N9  | -5.22 | 104.03      | 108.20   |
| 8   | BY    | 841 | G    | C1'-O4'-C4' | -5.21 | 105.73      | 109.90   |
| 8   | AX    | 812 | U    | O4'-C1'-N1  | 5.21  | 112.37      | 108.20   |
| 8   | AX    | 811 | C    | C4'-C3'-C2' | -5.21 | 97.39       | 102.60   |
| 8   | BX    | 862 | A    | N1-C6-N6    | 5.21  | 121.72      | 118.60   |
| 8   | DX    | 843 | C    | C6-N1-C2    | 5.21  | 122.38      | 120.30   |
| 8   | DY    | 838 | A    | C5-N7-C8    | -5.21 | 101.30      | 103.90   |
| 8   | AV    | 829 | C    | N3-C4-C5    | 5.21  | 123.98      | 121.90   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | AX    | 856 | C    | N1-C2-N3    | -5.21 | 115.56      | 119.20   |
| 8   | BV    | 814 | A    | C8-N9-C4    | -5.20 | 103.72      | 105.80   |
| 8   | AX    | 867 | G    | C3'-C2'-C1' | -5.20 | 97.34       | 101.50   |
| 8   | CY    | 808 | C    | C3'-C2'-C1' | 5.20  | 105.66      | 101.50   |
| 8   | CV    | 851 | G    | C5'-C4'-O4' | 5.20  | 115.34      | 109.10   |
| 8   | DX    | 862 | A    | C4'-C3'-C2' | -5.20 | 97.40       | 102.60   |
| 8   | BX    | 815 | A    | P-O3'-C3'   | 5.20  | 125.93      | 119.70   |
| 8   | CV    | 835 | U    | N1-C1'-C2'  | -5.20 | 106.28      | 112.00   |
| 8   | DX    | 805 | U    | C3'-C2'-C1' | 5.20  | 105.66      | 101.50   |
| 8   | AX    | 862 | A    | OP1-P-O3'   | 5.19  | 116.63      | 105.20   |
| 8   | DX    | 864 | A    | O5'-C5'-C4' | -5.19 | 101.83      | 111.70   |
| 8   | DY    | 803 | C    | N3-C2-O2    | -5.19 | 118.26      | 121.90   |
| 8   | CY    | 813 | G    | C1'-O4'-C4' | -5.19 | 105.75      | 109.90   |
| 8   | DY    | 868 | G    | N9-C4-C5    | 5.19  | 107.48      | 105.40   |
| 8   | CV    | 868 | G    | N1-C6-O6    | -5.19 | 116.79      | 119.90   |
| 8   | CY    | 826 | U    | C5-C4-O4    | -5.19 | 122.79      | 125.90   |
| 8   | AX    | 804 | G    | P-O3'-C3'   | 5.18  | 125.92      | 119.70   |
| 8   | BV    | 864 | A    | C5-N7-C8    | -5.18 | 101.31      | 103.90   |
| 8   | CV    | 850 | G    | O4'-C1'-N9  | 5.18  | 112.35      | 108.20   |
| 8   | DV    | 864 | A    | O4'-C1'-N9  | 5.18  | 112.34      | 108.20   |
| 8   | CV    | 823 | C    | O4'-C1'-N1  | 5.18  | 112.34      | 108.20   |
| 8   | BX    | 854 | A    | N7-C8-N9    | 5.17  | 116.39      | 113.80   |
| 8   | DY    | 841 | G    | N1-C6-O6    | 5.17  | 123.00      | 119.90   |
| 8   | CY    | 866 | U    | P-O3'-C3'   | 5.17  | 125.91      | 119.70   |
| 8   | DV    | 803 | C    | N3-C2-O2    | -5.17 | 118.28      | 121.90   |
| 8   | AV    | 805 | U    | C5-C4-O4    | -5.17 | 122.80      | 125.90   |
| 8   | AX    | 808 | C    | O4'-C1'-N1  | 5.17  | 112.33      | 108.20   |
| 8   | DY    | 849 | G    | C8-N9-C4    | -5.17 | 104.33      | 106.40   |
| 8   | AV    | 834 | U    | C5-C4-O4    | -5.17 | 122.80      | 125.90   |
| 8   | AX    | 855 | C    | O5'-P-OP2   | -5.17 | 101.05      | 105.70   |
| 8   | DX    | 839 | C    | O4'-C1'-N1  | 5.17  | 112.33      | 108.20   |
| 8   | CX    | 833 | U    | N3-C2-O2    | -5.17 | 118.58      | 122.20   |
| 8   | CX    | 809 | G    | C8-N9-C4    | -5.16 | 104.33      | 106.40   |
| 8   | BY    | 830 | A    | C4'-C3'-C2' | 5.16  | 107.76      | 102.60   |
| 8   | CV    | 825 | U    | N1-C2-O2    | -5.16 | 119.19      | 122.80   |
| 8   | BY    | 868 | G    | C2-N3-C4    | 5.16  | 114.48      | 111.90   |
| 8   | CX    | 839 | C    | N1-C2-N3    | -5.16 | 115.59      | 119.20   |
| 8   | AY    | 856 | C    | N1-C1'-C2'  | -5.15 | 106.33      | 112.00   |
| 8   | DV    | 868 | G    | C5-C6-O6    | -5.15 | 125.51      | 128.60   |
| 8   | AV    | 801 | G    | N9-C4-C5    | -5.15 | 103.34      | 105.40   |
| 8   | AX    | 806 | G    | P-O3'-C3'   | 5.15  | 125.88      | 119.70   |
| 8   | AY    | 816 | A    | P-O3'-C3'   | 5.15  | 125.88      | 119.70   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | BV    | 804 | G    | C6-C5-N7    | -5.15 | 127.31      | 130.40   |
| 8   | BX    | 837 | G    | N1-C6-O6    | 5.15  | 122.99      | 119.90   |
| 8   | BV    | 829 | C    | N1-C2-O2    | 5.14  | 121.98      | 118.90   |
| 8   | DV    | 816 | A    | C4'-C3'-C2' | -5.14 | 97.46       | 102.60   |
| 8   | DX    | 864 | A    | N7-C8-N9    | 5.14  | 116.37      | 113.80   |
| 8   | CV    | 823 | C    | P-O3'-C3'   | 5.14  | 125.87      | 119.70   |
| 8   | AX    | 836 | U    | O4'-C1'-N1  | 5.13  | 112.31      | 108.20   |
| 8   | AV    | 838 | A    | C4'-C3'-C2' | -5.13 | 97.47       | 102.60   |
| 8   | DY    | 850 | G    | N1-C2-N2    | 5.13  | 120.82      | 116.20   |
| 8   | DX    | 820 | C    | O4'-C1'-N1  | 5.13  | 112.30      | 108.20   |
| 8   | BX    | 804 | G    | N9-C1'-C2'  | -5.13 | 106.36      | 112.00   |
| 8   | DV    | 837 | G    | N1-C6-O6    | -5.13 | 116.83      | 119.90   |
| 8   | DX    | 862 | A    | N1-C6-N6    | 5.12  | 121.67      | 118.60   |
| 8   | BX    | 837 | G    | N7-C8-N9    | 5.12  | 115.66      | 113.10   |
| 8   | CY    | 807 | A    | O4'-C1'-N9  | 5.12  | 112.30      | 108.20   |
| 8   | AV    | 846 | U    | C5-C6-N1    | 5.12  | 125.26      | 122.70   |
| 8   | CV    | 809 | G    | N9-C1'-C2'  | -5.12 | 106.37      | 112.00   |
| 8   | CY    | 864 | A    | C1'-O4'-C4' | -5.12 | 105.81      | 109.90   |
| 8   | BX    | 837 | G    | C5-N7-C8    | -5.12 | 101.74      | 104.30   |
| 8   | CY    | 803 | C    | P-O3'-C3'   | 5.12  | 125.84      | 119.70   |
| 8   | BV    | 822 | G    | C4-C5-N7    | 5.11  | 112.84      | 110.80   |
| 8   | BY    | 829 | C    | C2-N1-C1'   | 5.11  | 124.42      | 118.80   |
| 8   | CY    | 822 | G    | N1-C2-N2    | 5.11  | 120.80      | 116.20   |
| 8   | AY    | 863 | G    | P-O3'-C3'   | 5.11  | 125.83      | 119.70   |
| 8   | BY    | 837 | G    | C4'-C3'-C2' | 5.11  | 107.71      | 102.60   |
| 8   | DV    | 816 | A    | O4'-C1'-N9  | 5.11  | 112.29      | 108.20   |
| 8   | DV    | 857 | U    | N1-C1'-C2'  | -5.11 | 106.38      | 112.00   |
| 8   | BY    | 838 | A    | P-O5'-C5'   | -5.10 | 112.73      | 120.90   |
| 8   | AY    | 825 | U    | N1-C2-O2    | 5.10  | 126.37      | 122.80   |
| 8   | BX    | 850 | G    | N7-C8-N9    | 5.10  | 115.65      | 113.10   |
| 8   | DX    | 853 | A    | P-O3'-C3'   | 5.10  | 125.82      | 119.70   |
| 8   | BV    | 852 | U    | N1-C2-O2    | 5.10  | 126.37      | 122.80   |
| 8   | DX    | 813 | G    | C2-N3-C4    | -5.10 | 109.35      | 111.90   |
| 8   | AY    | 819 | U    | C5-C4-O4    | -5.10 | 122.84      | 125.90   |
| 8   | CX    | 804 | G    | C5-C6-O6    | -5.10 | 125.54      | 128.60   |
| 8   | BV    | 810 | A    | O4'-C1'-N9  | 5.09  | 112.28      | 108.20   |
| 8   | DV    | 838 | A    | P-O5'-C5'   | 5.09  | 129.05      | 120.90   |
| 8   | DX    | 801 | G    | O4'-C1'-N9  | 5.09  | 112.27      | 108.20   |
| 8   | AX    | 811 | C    | O4'-C1'-N1  | 5.08  | 112.27      | 108.20   |
| 8   | AV    | 848 | U    | O4'-C1'-N1  | 5.08  | 112.27      | 108.20   |
| 8   | DX    | 837 | G    | N1-C6-O6    | -5.08 | 116.85      | 119.90   |
| 8   | BY    | 803 | C    | N3-C2-O2    | -5.08 | 118.34      | 121.90   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | DY    | 833 | U    | C1'-O4'-C4' | -5.08 | 105.84      | 109.90   |
| 8   | AV    | 817 | A    | N9-C1'-C2'  | -5.08 | 106.42      | 112.00   |
| 8   | DY    | 834 | U    | N1-C1'-C2'  | 5.07  | 120.59      | 114.00   |
| 8   | AY    | 826 | U    | C5-C6-N1    | 5.06  | 125.23      | 122.70   |
| 8   | CX    | 861 | G    | OP1-P-O3'   | 5.06  | 116.33      | 105.20   |
| 8   | DX    | 831 | A    | O4'-C1'-N9  | 5.06  | 112.25      | 108.20   |
| 8   | DV    | 802 | C    | P-O5'-C5'   | 5.05  | 128.99      | 120.90   |
| 8   | BY    | 862 | A    | C4'-C3'-C2' | -5.05 | 97.55       | 102.60   |
| 8   | CX    | 845 | C    | C6-N1-C2    | -5.05 | 118.28      | 120.30   |
| 8   | BX    | 864 | A    | C5'-C4'-C3' | -5.05 | 107.92      | 116.00   |
| 8   | BY    | 842 | U    | O4'-C1'-N1  | 5.05  | 112.24      | 108.20   |
| 8   | DX    | 815 | A    | O4'-C1'-N9  | 5.05  | 112.24      | 108.20   |
| 8   | BX    | 855 | C    | C6-N1-C2    | -5.05 | 118.28      | 120.30   |
| 8   | DY    | 821 | G    | O4'-C1'-N9  | 5.05  | 112.24      | 108.20   |
| 8   | AX    | 816 | A    | C4-C5-C6    | -5.05 | 114.48      | 117.00   |
| 8   | DX    | 813 | G    | O4'-C1'-N9  | 5.05  | 112.24      | 108.20   |
| 8   | DY    | 864 | A    | C4-C5-N7    | 5.05  | 113.22      | 110.70   |
| 8   | DX    | 854 | A    | P-O3'-C3'   | 5.04  | 125.75      | 119.70   |
| 8   | AV    | 830 | A    | P-O5'-C5'   | -5.04 | 112.83      | 120.90   |
| 8   | BY    | 805 | U    | C6-N1-C2    | -5.04 | 117.98      | 121.00   |
| 8   | DY    | 863 | G    | N1-C6-O6    | 5.04  | 122.92      | 119.90   |
| 8   | AX    | 848 | U    | O4'-C1'-N1  | 5.04  | 112.23      | 108.20   |
| 8   | CX    | 865 | C    | C5-C6-N1    | 5.04  | 123.52      | 121.00   |
| 8   | DY    | 806 | G    | C5-C6-N1    | 5.04  | 114.02      | 111.50   |
| 8   | CV    | 822 | G    | N9-C4-C5    | 5.03  | 107.41      | 105.40   |
| 8   | BV    | 832 | U    | N1-C2-O2    | 5.03  | 126.32      | 122.80   |
| 8   | DY    | 841 | G    | C4-C5-N7    | 5.03  | 112.81      | 110.80   |
| 8   | AV    | 823 | C    | P-O3'-C3'   | 5.03  | 125.73      | 119.70   |
| 8   | BV    | 851 | G    | O4'-C1'-N9  | 5.03  | 112.22      | 108.20   |
| 8   | CY    | 822 | G    | N3-C2-N2    | -5.02 | 116.39      | 119.90   |
| 8   | CX    | 841 | G    | C5-C6-O6    | -5.02 | 125.59      | 128.60   |
| 8   | BY    | 824 | A    | N7-C8-N9    | 5.01  | 116.31      | 113.80   |
| 8   | CV    | 827 | G    | C5-C6-O6    | 5.01  | 131.61      | 128.60   |
| 8   | BX    | 860 | G    | O4'-C1'-N9  | 5.01  | 112.21      | 108.20   |
| 8   | BY    | 828 | G    | C8-N9-C4    | -5.01 | 104.39      | 106.40   |
| 8   | AY    | 867 | G    | N1-C6-O6    | 5.01  | 122.91      | 119.90   |
| 8   | BY    | 863 | G    | N1-C6-O6    | 5.00  | 122.90      | 119.90   |
| 8   | BY    | 863 | G    | C5-C6-O6    | -5.00 | 125.60      | 128.60   |

There are no chirality outliers.

There are no planarity outliers.

## 5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | AA    | 724   | 0        | 755      | 91      | 0            |
| 1   | AH    | 733   | 0        | 768      | 75      | 0            |
| 1   | AO    | 718   | 0        | 750      | 71      | 0            |
| 1   | BA    | 733   | 0        | 768      | 78      | 0            |
| 1   | BH    | 759   | 0        | 796      | 77      | 0            |
| 1   | BO    | 724   | 0        | 755      | 86      | 0            |
| 1   | CA    | 724   | 0        | 755      | 77      | 1            |
| 1   | CH    | 733   | 0        | 768      | 88      | 0            |
| 1   | CO    | 733   | 0        | 768      | 97      | 0            |
| 1   | DA    | 724   | 0        | 755      | 72      | 0            |
| 1   | DH    | 759   | 0        | 796      | 97      | 0            |
| 1   | DO    | 733   | 0        | 768      | 91      | 1            |
| 2   | AB    | 759   | 0        | 816      | 123     | 0            |
| 2   | AI    | 751   | 0        | 807      | 151     | 0            |
| 2   | AP    | 746   | 0        | 802      | 135     | 1            |
| 2   | BB    | 751   | 0        | 807      | 134     | 0            |
| 2   | BI    | 751   | 0        | 807      | 127     | 0            |
| 2   | BP    | 754   | 0        | 811      | 169     | 1            |
| 2   | CB    | 759   | 0        | 816      | 128     | 1            |
| 2   | CI    | 751   | 0        | 807      | 135     | 0            |
| 2   | CP    | 746   | 0        | 802      | 115     | 0            |
| 2   | DB    | 754   | 0        | 811      | 132     | 1            |
| 2   | DI    | 737   | 0        | 789      | 127     | 0            |
| 2   | DP    | 746   | 0        | 802      | 135     | 0            |
| 3   | AC    | 845   | 0        | 892      | 155     | 0            |
| 3   | AJ    | 859   | 0        | 906      | 170     | 0            |
| 3   | AQ    | 709   | 0        | 764      | 145     | 0            |
| 3   | BC    | 845   | 0        | 892      | 139     | 0            |
| 3   | BJ    | 852   | 0        | 900      | 156     | 0            |
| 3   | BQ    | 709   | 0        | 764      | 139     | 0            |
| 3   | CC    | 845   | 0        | 892      | 147     | 0            |
| 3   | CJ    | 859   | 0        | 906      | 131     | 1            |
| 3   | CQ    | 728   | 0        | 779      | 112     | 1            |
| 3   | DC    | 845   | 0        | 892      | 126     | 0            |
| 3   | DJ    | 852   | 0        | 900      | 184     | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 3   | DQ    | 709   | 0        | 764      | 138     | 0            |
| 4   | AD    | 696   | 0        | 714      | 41      | 0            |
| 4   | AK    | 696   | 0        | 714      | 75      | 0            |
| 4   | AR    | 696   | 0        | 714      | 53      | 0            |
| 4   | BD    | 696   | 0        | 714      | 63      | 0            |
| 4   | BK    | 696   | 0        | 714      | 98      | 0            |
| 4   | BR    | 696   | 0        | 714      | 56      | 0            |
| 4   | CD    | 696   | 0        | 714      | 43      | 0            |
| 4   | CK    | 700   | 0        | 717      | 64      | 0            |
| 4   | CR    | 696   | 0        | 714      | 59      | 0            |
| 4   | DD    | 696   | 0        | 714      | 60      | 0            |
| 4   | DK    | 696   | 0        | 714      | 71      | 0            |
| 4   | DR    | 696   | 0        | 714      | 84      | 0            |
| 5   | AE    | 707   | 0        | 731      | 90      | 0            |
| 5   | AL    | 629   | 0        | 643      | 68      | 0            |
| 5   | AS    | 645   | 0        | 659      | 91      | 0            |
| 5   | BE    | 622   | 0        | 635      | 114     | 0            |
| 5   | BL    | 622   | 0        | 635      | 102     | 0            |
| 5   | BS    | 678   | 0        | 698      | 102     | 0            |
| 5   | CE    | 694   | 0        | 720      | 87      | 0            |
| 5   | CL    | 622   | 0        | 635      | 84      | 0            |
| 5   | CS    | 645   | 0        | 659      | 83      | 0            |
| 5   | DE    | 629   | 0        | 643      | 75      | 0            |
| 5   | DL    | 622   | 0        | 635      | 85      | 0            |
| 5   | DS    | 645   | 0        | 659      | 104     | 0            |
| 6   | AF    | 657   | 0        | 645      | 118     | 0            |
| 6   | AM    | 657   | 0        | 645      | 100     | 0            |
| 6   | AT    | 657   | 0        | 645      | 110     | 0            |
| 6   | BF    | 648   | 0        | 639      | 143     | 0            |
| 6   | BM    | 657   | 0        | 645      | 124     | 0            |
| 6   | BT    | 657   | 0        | 645      | 92      | 0            |
| 6   | CF    | 637   | 0        | 626      | 112     | 1            |
| 6   | CM    | 657   | 0        | 645      | 94      | 0            |
| 6   | CT    | 657   | 0        | 645      | 95      | 0            |
| 6   | DF    | 657   | 0        | 645      | 99      | 0            |
| 6   | DM    | 657   | 0        | 645      | 125     | 0            |
| 6   | DT    | 657   | 0        | 645      | 85      | 0            |
| 7   | AG    | 568   | 0        | 590      | 47      | 0            |
| 7   | AN    | 541   | 0        | 562      | 83      | 0            |
| 7   | AU    | 568   | 0        | 590      | 81      | 0            |
| 7   | BG    | 568   | 0        | 590      | 81      | 0            |
| 7   | BN    | 577   | 0        | 603      | 103     | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 7   | BU    | 533   | 0        | 551      | 69      | 0            |
| 7   | CG    | 568   | 0        | 590      | 89      | 0            |
| 7   | CN    | 533   | 0        | 551      | 65      | 0            |
| 7   | CU    | 568   | 0        | 590      | 70      | 0            |
| 7   | DG    | 566   | 0        | 583      | 78      | 0            |
| 7   | DN    | 568   | 0        | 590      | 86      | 0            |
| 7   | DU    | 533   | 0        | 551      | 77      | 0            |
| 8   | AV    | 1453  | 0        | 733      | 147     | 0            |
| 8   | AX    | 1453  | 0        | 733      | 103     | 2            |
| 8   | AY    | 1453  | 0        | 733      | 96      | 0            |
| 8   | BV    | 1453  | 0        | 733      | 127     | 0            |
| 8   | BX    | 1453  | 0        | 733      | 118     | 1            |
| 8   | BY    | 1453  | 0        | 733      | 128     | 2            |
| 8   | CV    | 1453  | 0        | 733      | 114     | 1            |
| 8   | CX    | 1453  | 0        | 733      | 116     | 0            |
| 8   | CY    | 1453  | 0        | 733      | 108     | 0            |
| 8   | DV    | 1453  | 0        | 733      | 52      | 0            |
| 8   | DX    | 1453  | 0        | 733      | 108     | 0            |
| 8   | DY    | 1453  | 0        | 733      | 59      | 1            |
| All | All   | 75557 | 0        | 69105    | 7691    | 8            |

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 53.

All (7691) close contacts within the same asymmetric unit are listed below.

| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:DF:547:THR:HG21 | 6:DF:562:VAL:CG2  | 1.43        | 1.48     |
| 3:CC:353:LEU:HD23 | 3:CC:371:LYS:NZ   | 1.24        | 1.47     |
| 2:AP:210:LEU:CD1  | 2:AP:274:LEU:HD13 | 1.43        | 1.47     |
| 3:DJ:407:ILE:HG23 | 6:DM:568:ASN:ND2  | 1.24        | 1.44     |
| 2:CP:207:LEU:CD1  | 2:CP:236:MET:SD   | 2.07        | 1.42     |
| 2:DI:277:ASP:HB2  | 2:DI:290:LYS:NZ   | 1.37        | 1.39     |
| 2:CP:207:LEU:HD11 | 2:CP:236:MET:SD   | 1.63        | 1.37     |
| 2:AP:210:LEU:HD13 | 2:AP:274:LEU:CD1  | 1.55        | 1.37     |
| 2:CI:276:LEU:HD13 | 3:CJ:357:LYS:CE   | 1.54        | 1.36     |
| 5:AS:683:ASN:ND2  | 6:AT:570:LEU:HD22 | 1.39        | 1.35     |
| 5:AS:674:LEU:HD13 | 6:AT:573:ARG:CD   | 1.54        | 1.35     |
| 6:AT:547:THR:HG21 | 6:AT:562:VAL:CG2  | 1.57        | 1.34     |
| 5:AS:674:LEU:HD11 | 6:AT:573:ARG:NH1  | 1.01        | 1.33     |
| 5:BE:688:GLN:OE1  | 7:BG:757:ILE:HG21 | 1.18        | 1.33     |
| 5:AS:674:LEU:CD1  | 6:AT:573:ARG:NH1  | 1.91        | 1.33     |
| 6:AM:547:THR:HG21 | 6:AM:562:VAL:CG2  | 1.57        | 1.33     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:AS:674:LEU:CD1  | 6:AT:573:ARG:CZ   | 2.06        | 1.31     |
| 4:BK:47:THR:HG23  | 4:BK:55:VAL:CG1   | 1.57        | 1.31     |
| 6:DF:547:THR:CG2  | 6:DF:562:VAL:HG23 | 1.62        | 1.29     |
| 3:CQ:410:LEU:CD2  | 6:CT:562:VAL:HG22 | 1.62        | 1.29     |
| 5:BE:621:ILE:CD1  | 7:BG:741:VAL:HG23 | 1.62        | 1.27     |
| 3:DC:407:ILE:HD13 | 6:DF:525:TRP:CZ2  | 1.67        | 1.27     |
| 3:AQ:328:PRO:HB3  | 6:AT:563:LEU:CD1  | 1.63        | 1.27     |
| 5:DL:683:ASN:ND2  | 6:DM:570:LEU:HD11 | 1.48        | 1.27     |
| 6:DF:550:TYR:HA   | 6:DF:554:ALA:O    | 1.34        | 1.27     |
| 5:BE:634:TRP:CZ2  | 5:BE:642:ARG:HD2  | 1.70        | 1.26     |
| 5:AL:624:TYR:CE2  | 7:AN:761:VAL:HG21 | 1.68        | 1.26     |
| 3:AJ:348:ASN:ND2  | 8:AX:840:A:H4'    | 1.52        | 1.24     |
| 3:DJ:407:ILE:CG2  | 6:DM:568:ASN:ND2  | 1.98        | 1.24     |
| 6:CM:567:ASN:O    | 8:CX:838:A:N1     | 1.70        | 1.23     |
| 1:BO:155:ASN:ND2  | 8:DY:816:A:H61    | 1.35        | 1.22     |
| 3:DJ:408:VAL:CG2  | 6:DM:564:ILE:HG23 | 1.67        | 1.22     |
| 5:AS:674:LEU:CD1  | 6:AT:573:ARG:HD3  | 1.68        | 1.22     |
| 3:CQ:342:VAL:CG1  | 3:CQ:409:VAL:HG13 | 1.69        | 1.21     |
| 7:AU:725:ARG:CZ   | 7:AU:749:ALA:HB2  | 1.70        | 1.21     |
| 1:DH:120:ILE:O    | 1:DH:178:VAL:HG22 | 1.39        | 1.21     |
| 5:BE:621:ILE:HD12 | 7:BG:741:VAL:CG2  | 1.70        | 1.20     |
| 3:DJ:332:LEU:HD12 | 3:DJ:359:PHE:CD2  | 1.75        | 1.20     |
| 3:DJ:332:LEU:HB2  | 3:DJ:359:PHE:CZ   | 1.75        | 1.20     |
| 5:AS:674:LEU:HD11 | 6:AT:573:ARG:CZ   | 1.69        | 1.20     |
| 4:BK:47:THR:CG2   | 4:BK:55:VAL:HG13  | 1.71        | 1.20     |
| 4:CK:9:VAL:CG2    | 4:CK:80:ALA:HB1   | 1.71        | 1.20     |
| 2:AB:203:LEU:HD21 | 3:AC:400:PHE:CZ   | 1.76        | 1.19     |
| 1:AH:121:LEU:HD21 | 1:AH:172:LEU:HD11 | 1.23        | 1.19     |
| 5:DE:667:LYS:O    | 5:DE:668:THR:HG22 | 1.42        | 1.19     |
| 2:AI:280:LEU:HD21 | 2:AI:283:VAL:HA   | 1.23        | 1.18     |
| 5:BE:632:GLN:NE2  | 5:CE:690:VAL:HG12 | 1.59        | 1.18     |
| 2:CI:276:LEU:CD1  | 3:CJ:357:LYS:HZ1  | 1.55        | 1.17     |
| 2:DP:276:LEU:HD13 | 3:DQ:357:LYS:CE   | 1.71        | 1.17     |
| 6:CF:519:VAL:HG21 | 6:CF:572:ILE:HD11 | 1.21        | 1.17     |
| 6:CM:547:THR:HG21 | 6:CM:562:VAL:CG2  | 1.71        | 1.17     |
| 1:BO:178:VAL:HG13 | 2:BP:264:ASN:ND2  | 1.59        | 1.17     |
| 5:CE:621:ILE:HD11 | 7:CG:733:GLY:HA3  | 1.20        | 1.17     |
| 2:AP:291:LYS:O    | 2:AP:295:VAL:HG23 | 1.45        | 1.17     |
| 3:CJ:329:LEU:HD12 | 3:CJ:359:PHE:CE2  | 1.78        | 1.17     |
| 1:AH:179:SER:CB   | 2:AI:258:LEU:HD11 | 1.75        | 1.17     |
| 4:BK:47:THR:HG23  | 4:BK:55:VAL:HG13  | 1.23        | 1.17     |
| 4:AK:13:ALA:HA    | 4:AK:16:HIS:CD2   | 1.79        | 1.17     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:DU:705:HIS:O    | 7:DU:709:LEU:HD13 | 1.42        | 1.17     |
| 6:BT:524:LYS:HB2  | 6:BT:570:LEU:HD21 | 1.18        | 1.16     |
| 1:AA:159:ALA:HB1  | 8:AV:849:G:OP2    | 1.45        | 1.16     |
| 3:AC:343:LEU:HD23 | 3:AC:410:LEU:HD12 | 1.21        | 1.16     |
| 3:DQ:376:GLU:HB2  | 3:DQ:391:ASN:HB2  | 1.22        | 1.16     |
| 4:BK:9:VAL:HB     | 4:BK:80:ALA:HB1   | 1.28        | 1.15     |
| 4:BK:47:THR:CG2   | 4:BK:55:VAL:CG1   | 2.25        | 1.15     |
| 1:BH:118:ARG:NH1  | 1:BH:128:ILE:HD11 | 1.61        | 1.15     |
| 2:DI:280:LEU:HD22 | 2:DI:286:LYS:HE2  | 1.25        | 1.15     |
| 1:BA:180:MET:O    | 2:BB:258:LEU:HD12 | 1.44        | 1.15     |
| 2:BP:286:LYS:HD3  | 3:BQ:357:LYS:NZ   | 1.62        | 1.15     |
| 3:BJ:344:ILE:HD13 | 3:BJ:365:MET:CE   | 1.77        | 1.15     |
| 3:DQ:329:LEU:O    | 3:DQ:333:THR:HG23 | 1.46        | 1.15     |
| 2:CI:276:LEU:CD2  | 3:CJ:357:LYS:NZ   | 2.10        | 1.15     |
| 3:DC:407:ILE:CD1  | 6:DF:525:TRP:CZ2  | 2.29        | 1.14     |
| 5:AS:674:LEU:HD12 | 6:AT:573:ARG:CZ   | 1.78        | 1.14     |
| 3:CQ:342:VAL:HG11 | 3:CQ:409:VAL:CG1  | 1.76        | 1.14     |
| 5:AS:674:LEU:CD1  | 6:AT:573:ARG:CD   | 2.23        | 1.14     |
| 1:CO:195:VAL:HG13 | 4:CR:92:GLY:N     | 1.61        | 1.14     |
| 3:DC:410:LEU:HD13 | 6:DF:559:LEU:HD13 | 1.15        | 1.13     |
| 1:DH:178:VAL:HG12 | 2:DI:264:ASN:ND2  | 1.61        | 1.13     |
| 5:DL:678:MET:HE3  | 6:DM:511:LEU:HD21 | 1.25        | 1.13     |
| 1:CO:182:VAL:CG2  | 2:CP:257:THR:HG21 | 1.77        | 1.13     |
| 3:AJ:410:LEU:HD12 | 6:AM:559:LEU:HD22 | 1.24        | 1.13     |
| 3:DC:407:ILE:HD13 | 6:DF:525:TRP:CH2  | 1.81        | 1.13     |
| 4:BK:9:VAL:HA     | 4:BK:80:ALA:HB2   | 1.28        | 1.13     |
| 2:DP:276:LEU:CD1  | 3:DQ:357:LYS:HE2  | 1.79        | 1.12     |
| 7:DU:709:LEU:HD11 | 7:DU:734:PHE:CD2  | 1.83        | 1.12     |
| 2:AI:280:LEU:HD22 | 2:AI:286:LYS:CD   | 1.79        | 1.12     |
| 3:BJ:407:ILE:HA   | 6:BM:568:ASN:ND2  | 1.63        | 1.12     |
| 5:AE:610:VAL:HG11 | 5:AE:612:LYS:HE2  | 1.31        | 1.12     |
| 2:BP:210:LEU:HD21 | 2:BP:279:LEU:HD13 | 1.23        | 1.12     |
| 8:BV:815:A:H2'    | 8:BV:816:A:H8     | 1.14        | 1.12     |
| 2:AP:293:GLU:HG3  | 3:AQ:368:GLU:CB   | 1.80        | 1.11     |
| 3:DJ:342:VAL:HG21 | 3:DJ:356:VAL:CG2  | 1.80        | 1.11     |
| 3:BQ:408:VAL:HG12 | 3:BQ:410:LEU:HD21 | 1.29        | 1.11     |
| 3:DQ:410:LEU:HD23 | 6:DT:562:VAL:HG22 | 1.30        | 1.11     |
| 6:CF:521:VAL:HG22 | 6:CF:572:ILE:HG13 | 1.30        | 1.11     |
| 5:BS:655:ASN:ND2  | 8:BY:831:A:N1     | 1.97        | 1.11     |
| 7:BN:709:LEU:HD21 | 7:BN:734:PHE:CB   | 1.79        | 1.11     |
| 2:BP:276:LEU:HD12 | 2:BP:290:LYS:HA   | 1.32        | 1.11     |
| 3:BJ:344:ILE:HD13 | 3:BJ:365:MET:HE1  | 1.25        | 1.11     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:BH:178:VAL:HB   | 2:BI:264:ASN:ND2  | 1.64        | 1.11     |
| 5:CL:635:LEU:HD13 | 5:CL:687:LEU:CD2  | 1.81        | 1.11     |
| 1:CA:150:LYS:HG3  | 1:CA:162:GLU:CG   | 1.79        | 1.11     |
| 6:BT:524:LYS:HA   | 6:BT:570:LEU:HD11 | 1.29        | 1.11     |
| 3:DC:410:LEU:HD13 | 6:DF:559:LEU:CD1  | 1.81        | 1.10     |
| 5:BE:621:ILE:HD12 | 7:BG:741:VAL:HG23 | 1.13        | 1.10     |
| 1:CO:182:VAL:CG2  | 2:CP:257:THR:CG2  | 2.29        | 1.10     |
| 8:AV:849:G:N2     | 8:CX:816:A:HI'    | 1.65        | 1.10     |
| 1:CA:150:LYS:CG   | 1:CA:162:GLU:HG3  | 1.80        | 1.10     |
| 5:AE:621:ILE:HD12 | 7:AG:741:VAL:HG23 | 1.24        | 1.10     |
| 3:BJ:407:ILE:HG23 | 6:BM:568:ASN:ND2  | 1.64        | 1.10     |
| 5:BS:673:GLN:O    | 5:BS:674:LEU:HD23 | 1.52        | 1.10     |
| 3:BQ:407:ILE:HG22 | 3:BQ:408:VAL:HG23 | 1.25        | 1.10     |
| 7:AU:741:VAL:HG22 | 7:AU:761:VAL:HG22 | 1.32        | 1.10     |
| 3:BQ:408:VAL:CG1  | 3:BQ:410:LEU:HD21 | 1.82        | 1.10     |
| 2:CI:276:LEU:HD22 | 3:CJ:357:LYS:HZ3  | 1.16        | 1.09     |
| 3:AQ:410:LEU:HD13 | 6:AT:559:LEU:HD22 | 1.26        | 1.09     |
| 1:AH:179:SER:HB3  | 2:AI:258:LEU:HD11 | 1.19        | 1.09     |
| 3:AC:361:ARG:HG2  | 8:AV:830:A:H5''   | 1.24        | 1.09     |
| 5:BL:688:GLN:OE1  | 7:BN:757:ILE:HG21 | 1.51        | 1.09     |
| 1:AA:121:LEU:HD21 | 1:AA:172:LEU:HD21 | 1.14        | 1.09     |
| 1:CO:182:VAL:HG23 | 2:CP:257:THR:CG2  | 1.82        | 1.09     |
| 2:CI:280:LEU:HD13 | 2:CI:286:LYS:HG3  | 1.33        | 1.09     |
| 5:AS:674:LEU:CD1  | 6:AT:573:ARG:NE   | 2.15        | 1.09     |
| 7:BU:709:LEU:HD21 | 7:BU:713:MET:SD   | 1.91        | 1.09     |
| 3:CC:359:PHE:HB3  | 3:CC:365:MET:HG2  | 1.24        | 1.09     |
| 3:BQ:331:VAL:HG11 | 6:BT:543:GLN:HE22 | 1.01        | 1.08     |
| 3:BJ:408:VAL:HG22 | 6:BM:564:ILE:HG23 | 1.15        | 1.08     |
| 2:AI:276:LEU:HD23 | 3:AJ:357:LYS:CE   | 1.81        | 1.08     |
| 3:AJ:338:ASN:HD21 | 3:AJ:417:GLY:HA3  | 1.07        | 1.08     |
| 2:CB:269:ILE:CD1  | 3:CC:396:ILE:HD13 | 1.84        | 1.08     |
| 2:DP:280:LEU:HD22 | 2:DP:286:LYS:HE2  | 1.31        | 1.08     |
| 3:BJ:407:ILE:CG2  | 6:BM:568:ASN:HD22 | 1.65        | 1.08     |
| 3:CC:408:VAL:HG22 | 6:CF:564:ILE:HG23 | 1.14        | 1.08     |
| 2:DB:201:MET:O    | 2:DB:204:VAL:HG12 | 1.54        | 1.08     |
| 1:DA:179:SER:HA   | 2:DB:259:SER:O    | 1.54        | 1.08     |
| 2:BP:286:LYS:NZ   | 3:BQ:358:ALA:HB2  | 1.69        | 1.07     |
| 2:BP:210:LEU:HD21 | 2:BP:279:LEU:CD1  | 1.83        | 1.07     |
| 3:DJ:342:VAL:CG2  | 3:DJ:356:VAL:HG23 | 1.84        | 1.07     |
| 4:CK:9:VAL:HG22   | 4:CK:80:ALA:CB    | 1.84        | 1.07     |
| 2:DB:207:LEU:HD12 | 2:DB:236:MET:SD   | 1.93        | 1.07     |
| 4:AR:80:ALA:HB1   | 4:AR:81:PRO:HD2   | 1.08        | 1.07     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:CK:9:VAL:HG22   | 4:CK:80:ALA:HB1   | 1.15        | 1.06     |
| 2:BP:280:LEU:HD22 | 2:BP:286:LYS:HE3  | 1.33        | 1.06     |
| 8:BV:815:A:H2'    | 8:BV:816:A:C8     | 1.90        | 1.06     |
| 6:AM:547:THR:CG2  | 6:AM:562:VAL:HG23 | 1.84        | 1.06     |
| 2:CP:284:GLU:HG2  | 2:CP:285:PRO:HD3  | 1.37        | 1.06     |
| 5:CL:635:LEU:CD1  | 5:CL:687:LEU:CD2  | 2.32        | 1.06     |
| 2:CI:276:LEU:HD13 | 3:CJ:357:LYS:HE3  | 1.07        | 1.06     |
| 2:AB:203:LEU:HD21 | 3:AC:400:PHE:HZ   | 0.95        | 1.06     |
| 2:BP:289:SER:O    | 2:BP:293:GLU:HG3  | 1.52        | 1.06     |
| 5:CS:683:ASN:ND2  | 6:CT:570:LEU:HD11 | 1.70        | 1.06     |
| 2:AP:206:PHE:O    | 2:AP:279:LEU:HD23 | 1.54        | 1.06     |
| 3:BJ:408:VAL:HG13 | 6:BM:564:ILE:HG12 | 1.31        | 1.06     |
| 1:AO:121:LEU:HD21 | 1:AO:172:LEU:HD11 | 1.11        | 1.06     |
| 5:AL:621:ILE:HD12 | 7:AN:741:VAL:HG23 | 1.36        | 1.05     |
| 4:AK:13:ALA:C     | 4:AK:16:HIS:HD2   | 1.58        | 1.05     |
| 2:BP:276:LEU:HD13 | 3:BQ:357:LYS:HE3  | 1.29        | 1.05     |
| 3:BQ:408:VAL:HG12 | 3:BQ:410:LEU:CD2  | 1.86        | 1.05     |
| 5:DS:656:LEU:HD11 | 5:DS:687:LEU:HD11 | 1.32        | 1.05     |
| 5:CL:678:MET:HE2  | 6:CM:572:ILE:HG21 | 1.39        | 1.05     |
| 4:AR:80:ALA:HB1   | 4:AR:81:PRO:CD    | 1.86        | 1.05     |
| 7:CN:709:LEU:HD13 | 7:CN:734:PHE:HB3  | 1.36        | 1.05     |
| 6:CT:511:LEU:HD11 | 6:CT:536:VAL:HG21 | 1.38        | 1.05     |
| 3:DJ:329:LEU:O    | 3:DJ:333:THR:HG23 | 1.57        | 1.05     |
| 6:AM:547:THR:HG21 | 6:AM:562:VAL:HG21 | 1.37        | 1.05     |
| 6:DT:547:THR:HG21 | 6:DT:562:VAL:CG2  | 1.86        | 1.05     |
| 4:CR:28:TYR:OH    | 7:CU:769:MET:SD   | 2.13        | 1.05     |
| 2:CP:283:VAL:HG22 | 2:CP:287:VAL:HG23 | 1.35        | 1.05     |
| 3:AQ:328:PRO:HB3  | 6:AT:563:LEU:HD13 | 1.10        | 1.05     |
| 6:CM:547:THR:HG21 | 6:CM:562:VAL:HG23 | 1.38        | 1.05     |
| 1:BO:181:THR:HB   | 2:BP:258:LEU:HD13 | 1.39        | 1.05     |
| 3:DJ:407:ILE:CB   | 6:DM:568:ASN:HD21 | 1.70        | 1.04     |
| 2:BP:209:LYS:HB3  | 2:BP:279:LEU:HD23 | 1.32        | 1.04     |
| 6:AF:519:VAL:HG21 | 6:AF:572:ILE:HD11 | 1.39        | 1.04     |
| 1:CO:137:HIS:NE2  | 8:CY:834:U:H3'    | 1.71        | 1.04     |
| 7:BG:745:CYS:SG   | 7:BG:760:VAL:HG11 | 1.97        | 1.04     |
| 3:AJ:408:VAL:HG22 | 6:AM:564:ILE:HG12 | 1.40        | 1.04     |
| 6:AM:547:THR:HG21 | 6:AM:562:VAL:HG23 | 1.29        | 1.04     |
| 1:DH:178:VAL:HG12 | 2:DI:264:ASN:HD21 | 1.13        | 1.04     |
| 5:DE:688:GLN:HG2  | 7:DG:760:VAL:HG23 | 1.39        | 1.04     |
| 5:BE:688:GLN:OE1  | 7:BG:757:ILE:CG2  | 2.06        | 1.04     |
| 5:AS:621:ILE:O    | 5:AS:624:TYR:HB3  | 1.58        | 1.04     |
| 4:BR:88:ASN:O     | 4:BR:91:GLN:HG3   | 1.55        | 1.04     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BL:678:MET:CE   | 6:BM:511:LEU:HD21 | 1.88        | 1.04     |
| 3:CC:353:LEU:CD2  | 3:CC:371:LYS:NZ   | 2.20        | 1.03     |
| 3:DJ:408:VAL:HG22 | 6:DM:564:ILE:CG2  | 1.87        | 1.03     |
| 5:CS:618:ILE:HG22 | 7:CU:709:LEU:HD21 | 1.41        | 1.03     |
| 4:AR:46:ILE:HD11  | 4:AR:58:LEU:HB2   | 1.10        | 1.03     |
| 2:AP:203:LEU:HD12 | 3:AQ:360:ASP:CG   | 1.77        | 1.03     |
| 5:BS:684:ILE:CG2  | 5:BS:687:LEU:HD21 | 1.87        | 1.03     |
| 5:BS:684:ILE:HG21 | 5:BS:687:LEU:HD21 | 1.35        | 1.03     |
| 3:AJ:408:VAL:HG12 | 3:AJ:410:LEU:HD22 | 1.40        | 1.03     |
| 2:BP:274:LEU:HD11 | 2:BP:279:LEU:HD11 | 1.35        | 1.03     |
| 2:BI:219:LEU:HD12 | 2:BI:223:THR:CG2  | 1.89        | 1.03     |
| 2:AI:280:LEU:HD13 | 2:AI:286:LYS:HB3  | 1.40        | 1.02     |
| 5:DS:674:LEU:HD12 | 5:DS:677:ILE:HD11 | 1.39        | 1.02     |
| 3:BJ:338:ASN:HB3  | 3:BJ:340:THR:HG23 | 1.06        | 1.02     |
| 8:DX:851:G:N2     | 8:DX:854:A:N7     | 2.06        | 1.02     |
| 3:CJ:329:LEU:HD12 | 3:CJ:359:PHE:CD2  | 1.93        | 1.02     |
| 5:CL:635:LEU:CD1  | 5:CL:687:LEU:HD21 | 1.87        | 1.02     |
| 1:DO:169:LEU:HD21 | 4:DR:80:ALA:HB1   | 1.37        | 1.02     |
| 2:CI:229:ILE:HA   | 2:CI:240:LEU:HD23 | 1.39        | 1.02     |
| 1:BH:179:SER:HB3  | 2:BI:258:LEU:HD11 | 1.38        | 1.02     |
| 6:AT:547:THR:HG21 | 6:AT:562:VAL:HG21 | 1.04        | 1.02     |
| 3:DQ:376:GLU:OE1  | 3:DQ:391:ASN:ND2  | 1.93        | 1.02     |
| 3:BJ:407:ILE:CA   | 6:BM:568:ASN:ND2  | 2.23        | 1.02     |
| 5:CS:618:ILE:HG22 | 7:CU:709:LEU:CD2  | 1.90        | 1.02     |
| 2:DB:283:VAL:HG12 | 2:DB:285:PRO:HD2  | 1.38        | 1.02     |
| 2:AI:280:LEU:HD22 | 2:AI:286:LYS:CE   | 1.90        | 1.02     |
| 1:AH:179:SER:HA   | 2:AI:259:SER:O    | 1.59        | 1.02     |
| 4:BR:85:SER:O     | 4:BR:89:LYS:HG2   | 1.58        | 1.02     |
| 3:CC:377:VAL:HG12 | 3:CC:390:VAL:H    | 1.24        | 1.02     |
| 2:DB:287:VAL:HG13 | 2:DB:290:LYS:HD3  | 1.41        | 1.02     |
| 4:BR:46:ILE:HD11  | 4:BR:58:LEU:HB2   | 1.37        | 1.01     |
| 3:CQ:410:LEU:HD21 | 6:CT:562:VAL:HG22 | 1.40        | 1.01     |
| 3:BJ:407:ILE:CB   | 6:BM:568:ASN:ND2  | 2.24        | 1.01     |
| 1:CO:182:VAL:HG23 | 2:CP:257:THR:HG23 | 1.41        | 1.01     |
| 2:BI:280:LEU:HD13 | 2:BI:286:LYS:HD2  | 1.40        | 1.01     |
| 5:DL:634:TRP:CZ2  | 5:DL:642:ARG:HD2  | 1.94        | 1.01     |
| 7:DU:719:LEU:HD23 | 7:DU:767:ILE:HD12 | 1.42        | 1.01     |
| 4:BR:80:ALA:HB3   | 4:BR:81:PRO:HD3   | 1.38        | 1.01     |
| 2:BP:280:LEU:CD2  | 2:BP:286:LYS:CE   | 2.39        | 1.00     |
| 2:DP:204:VAL:HG12 | 2:DP:236:MET:HE2  | 1.39        | 1.00     |
| 1:BO:137:HIS:NE2  | 8:BY:834:U:H2'    | 1.75        | 1.00     |
| 8:AV:857:U:O2'    | 8:CX:815:A:H1'    | 1.61        | 1.00     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BE:654:MET:O    | 5:BE:656:LEU:HD12 | 1.59        | 1.00     |
| 2:AP:293:GLU:CG   | 3:AQ:368:GLU:HB3  | 1.90        | 1.00     |
| 5:AL:624:TYR:HE2  | 7:AN:761:VAL:HG21 | 1.03        | 1.00     |
| 2:BP:280:LEU:HD22 | 2:BP:286:LYS:CE   | 1.91        | 1.00     |
| 6:BM:524:LYS:HG2  | 6:BM:570:LEU:HD13 | 1.39        | 1.00     |
| 3:BC:410:LEU:HD22 | 6:BF:562:VAL:HG22 | 1.41        | 1.00     |
| 3:BQ:363:CYS:SG   | 6:BT:565:ARG:HD3  | 2.02        | 1.00     |
| 7:CU:731:LEU:HD13 | 7:CU:740:LEU:HD22 | 1.44        | 1.00     |
| 5:CS:674:LEU:HD12 | 5:CS:677:ILE:HD11 | 1.43        | 1.00     |
| 5:BE:683:ASN:ND2  | 6:BF:570:LEU:HD11 | 1.77        | 0.99     |
| 5:AL:636:TYR:HD2  | 5:AL:685:THR:HG23 | 1.24        | 0.99     |
| 2:CI:276:LEU:CD1  | 3:CJ:357:LYS:NZ   | 2.24        | 0.99     |
| 2:BP:237:ASN:HD21 | 8:BY:835:U:H3     | 1.00        | 0.99     |
| 3:AJ:342:VAL:HG21 | 3:AJ:356:VAL:CG2  | 1.92        | 0.99     |
| 3:DQ:396:ILE:HB   | 3:DQ:399:MET:HE2  | 1.42        | 0.99     |
| 4:DR:88:ASN:O     | 4:DR:91:GLN:HG3   | 1.62        | 0.99     |
| 8:AX:866:U:H2'    | 8:AX:867:G:O4'    | 1.61        | 0.99     |
| 6:BT:524:LYS:CB   | 6:BT:570:LEU:HD21 | 1.91        | 0.99     |
| 7:AN:717:LEU:CD2  | 7:AN:772:ALA:HB2  | 1.92        | 0.99     |
| 2:BB:206:PHE:HD2  | 2:BB:276:LEU:HD22 | 1.26        | 0.99     |
| 2:AP:277:ASP:HB3  | 2:AP:290:LYS:NZ   | 1.76        | 0.99     |
| 3:DJ:342:VAL:HG21 | 3:DJ:356:VAL:HG23 | 1.38        | 0.99     |
| 5:BE:688:GLN:HE22 | 7:BG:757:ILE:HB   | 1.22        | 0.99     |
| 5:CL:678:MET:HB3  | 6:CM:572:ILE:HG22 | 1.42        | 0.99     |
| 7:BN:709:LEU:HD21 | 7:BN:734:PHE:HB2  | 1.43        | 0.99     |
| 2:CI:276:LEU:CD2  | 3:CJ:357:LYS:HZ3  | 1.71        | 0.99     |
| 3:BQ:328:PRO:CB   | 6:BT:563:LEU:CD1  | 2.41        | 0.99     |
| 5:CS:679:LEU:HD23 | 6:CT:571:TYR:HB2  | 1.44        | 0.99     |
| 2:DI:287:VAL:HA   | 2:DI:290:LYS:HE2  | 1.45        | 0.98     |
| 3:BQ:331:VAL:CG1  | 6:BT:543:GLN:HE22 | 1.74        | 0.98     |
| 3:DJ:408:VAL:HG22 | 6:DM:564:ILE:HG23 | 1.00        | 0.98     |
| 5:DS:667:LYS:O    | 5:DS:668:THR:HG22 | 1.64        | 0.98     |
| 2:DI:280:LEU:CD2  | 2:DI:286:LYS:HE2  | 1.93        | 0.98     |
| 5:CL:635:LEU:HD13 | 5:CL:687:LEU:HD21 | 1.36        | 0.98     |
| 1:AA:159:ALA:CB   | 8:AV:849:G:OP2    | 2.10        | 0.98     |
| 2:CI:276:LEU:CD1  | 3:CJ:357:LYS:CE   | 2.42        | 0.98     |
| 6:AM:547:THR:CG2  | 6:AM:562:VAL:CG2  | 2.41        | 0.98     |
| 7:AU:725:ARG:CZ   | 7:AU:749:ALA:CB   | 2.41        | 0.98     |
| 7:DU:717:LEU:HD23 | 7:DU:772:ALA:HB2  | 1.42        | 0.98     |
| 5:BL:618:ILE:N    | 7:BN:709:LEU:CD1  | 2.27        | 0.98     |
| 5:DS:634:TRP:HH2  | 5:DS:664:ILE:HD12 | 1.25        | 0.98     |
| 5:AE:621:ILE:CD1  | 7:AG:741:VAL:HG23 | 1.93        | 0.98     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CC:343:LEU:HD23 | 3:CC:410:LEU:HD12 | 1.46        | 0.98     |
| 3:BQ:328:PRO:HB3  | 6:BT:563:LEU:CD1  | 1.93        | 0.98     |
| 2:AI:206:PHE:CZ   | 2:AI:210:LEU:HD11 | 1.98        | 0.98     |
| 1:DA:167:LEU:HD22 | 4:DD:72:ILE:HD11  | 1.43        | 0.98     |
| 6:BF:547:THR:HG21 | 6:BF:562:VAL:CG2  | 1.94        | 0.97     |
| 4:AR:74:PRO:HG2   | 4:AR:77:LEU:HD11  | 1.47        | 0.97     |
| 2:BP:205:ARG:HA   | 2:BP:208:MET:HE2  | 1.44        | 0.97     |
| 8:AX:866:U:H3'    | 8:AX:867:G:H5''   | 1.47        | 0.97     |
| 5:DE:618:ILE:HG23 | 7:DG:709:LEU:HD21 | 1.46        | 0.97     |
| 4:DK:46:ILE:HD11  | 4:DK:58:LEU:HB2   | 1.46        | 0.97     |
| 6:AF:583:GLU:O    | 2:AP:295:VAL:HG12 | 1.64        | 0.97     |
| 8:CX:814:A:H2'    | 8:CX:815:A:C8     | 1.98        | 0.97     |
| 7:DN:758:GLY:CA   | 5:DS:630:ARG:HE   | 1.77        | 0.97     |
| 6:DF:525:TRP:HE3  | 6:DF:527:MET:SD   | 1.88        | 0.97     |
| 2:CI:276:LEU:HD22 | 3:CJ:357:LYS:NZ   | 1.73        | 0.97     |
| 6:DF:550:TYR:CA   | 6:DF:554:ALA:O    | 2.14        | 0.96     |
| 3:BJ:407:ILE:CB   | 6:BM:568:ASN:HD22 | 1.78        | 0.96     |
| 3:AJ:338:ASN:ND2  | 3:AJ:417:GLY:HA3  | 1.79        | 0.96     |
| 2:AP:277:ASP:HB3  | 2:AP:290:LYS:HZ3  | 1.27        | 0.96     |
| 2:AP:286:LYS:HD3  | 3:AQ:357:LYS:NZ   | 1.80        | 0.96     |
| 3:BJ:407:ILE:HG23 | 6:BM:568:ASN:HD22 | 1.21        | 0.96     |
| 8:BV:814:A:H2'    | 8:BV:815:A:C8     | 1.99        | 0.96     |
| 4:DD:27:VAL:HB    | 4:DD:49:THR:HB    | 1.46        | 0.96     |
| 1:CO:182:VAL:HG21 | 2:CP:257:THR:HG21 | 1.45        | 0.96     |
| 4:AR:80:ALA:CB    | 4:AR:81:PRO:HD2   | 1.94        | 0.96     |
| 3:AJ:348:ASN:HD21 | 8:AX:840:A:C4'    | 1.77        | 0.96     |
| 5:BS:634:TRP:HZ2  | 5:BS:642:ARG:HD2  | 1.29        | 0.96     |
| 2:DI:276:LEU:HD12 | 2:DI:290:LYS:CB   | 1.96        | 0.96     |
| 3:AJ:347:ARG:HD3  | 6:AM:525:TRP:CH2  | 2.00        | 0.96     |
| 3:BJ:408:VAL:CG1  | 6:BM:564:ILE:HG12 | 1.94        | 0.96     |
| 5:DS:674:LEU:HD12 | 5:DS:677:ILE:CD1  | 1.96        | 0.96     |
| 5:AL:624:TYR:CE2  | 7:AN:761:VAL:CG2  | 2.48        | 0.96     |
| 3:AJ:409:VAL:HG22 | 6:AM:563:LEU:HB3  | 1.45        | 0.96     |
| 4:CD:50:TYR:OH    | 7:CG:720:LYS:NZ   | 1.98        | 0.96     |
| 4:AK:5:VAL:HG13   | 4:AK:6:PRO:HD3    | 1.48        | 0.96     |
| 3:BJ:407:ILE:CA   | 6:BM:568:ASN:HD22 | 1.77        | 0.95     |
| 5:DL:634:TRP:HB3  | 5:DL:688:GLN:O    | 1.64        | 0.95     |
| 4:BD:12:GLU:CD    | 4:BD:79:ASN:HD22  | 1.69        | 0.95     |
| 2:AP:291:LYS:O    | 2:AP:295:VAL:CG2  | 2.15        | 0.95     |
| 2:CI:274:LEU:HD12 | 3:CJ:398:LYS:HZ1  | 1.29        | 0.95     |
| 5:CE:621:ILE:HD11 | 7:CG:733:GLY:CA   | 1.96        | 0.95     |
| 7:CN:705:HIS:CD2  | 7:CN:706:PRO:HD3  | 2.02        | 0.95     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CQ:342:VAL:HG11 | 3:CQ:409:VAL:HG13 | 0.97        | 0.95     |
| 3:DQ:376:GLU:HB2  | 3:DQ:391:ASN:CB   | 1.96        | 0.95     |
| 4:AD:46:ILE:HD11  | 4:AD:58:LEU:HB2   | 1.49        | 0.95     |
| 3:AQ:346:CYS:HB2  | 3:AQ:350:LYS:HG3  | 1.46        | 0.95     |
| 2:DB:274:LEU:HD11 | 2:DB:279:LEU:HD11 | 1.47        | 0.95     |
| 5:AS:674:LEU:HD12 | 6:AT:573:ARG:NE   | 1.79        | 0.95     |
| 2:AI:280:LEU:HD22 | 2:AI:286:LYS:HE3  | 1.45        | 0.95     |
| 5:CE:621:ILE:CD1  | 7:CG:733:GLY:HA3  | 1.96        | 0.95     |
| 7:AN:717:LEU:HD23 | 7:AN:772:ALA:HB2  | 1.47        | 0.95     |
| 5:CS:634:TRP:CZ2  | 5:CS:642:ARG:HD2  | 2.01        | 0.95     |
| 5:DE:690:VAL:O    | 5:DE:690:VAL:HG12 | 1.67        | 0.95     |
| 2:CI:276:LEU:HD11 | 3:CJ:357:LYS:HZ1  | 1.29        | 0.95     |
| 2:DB:276:LEU:HD11 | 3:DC:368:GLU:OE2  | 1.67        | 0.95     |
| 3:BJ:407:ILE:HG22 | 3:BJ:408:VAL:HG23 | 1.48        | 0.95     |
| 2:AI:204:VAL:HG12 | 2:AI:236:MET:SD   | 2.07        | 0.95     |
| 7:DN:717:LEU:HD23 | 7:DN:772:ALA:HA   | 1.49        | 0.95     |
| 1:DH:182:VAL:HG23 | 2:DI:257:THR:CG2  | 1.95        | 0.95     |
| 3:DJ:366:VAL:HG22 | 3:DJ:400:PHE:CE1  | 2.01        | 0.95     |
| 6:AF:584:MET:HA   | 2:AP:295:VAL:HG11 | 1.49        | 0.94     |
| 2:AB:283:VAL:HG13 | 2:AB:286:LYS:HB3  | 1.46        | 0.94     |
| 1:CA:169:LEU:HG   | 4:CD:73:LEU:HD12  | 1.45        | 0.94     |
| 3:DJ:332:LEU:HB2  | 3:DJ:359:PHE:CE1  | 2.01        | 0.94     |
| 3:DQ:370:VAL:HB   | 3:DQ:399:MET:CE   | 1.97        | 0.94     |
| 5:BE:688:GLN:CD   | 7:BG:757:ILE:HG21 | 1.86        | 0.94     |
| 3:AC:407:ILE:HG22 | 3:AC:408:VAL:HG23 | 1.50        | 0.94     |
| 8:BV:854:A:H3'    | 8:BV:855:C:H5''   | 1.46        | 0.94     |
| 2:AP:275:PRO:O    | 2:AP:279:LEU:HD13 | 1.67        | 0.94     |
| 5:AL:621:ILE:CD1  | 7:AN:741:VAL:HG23 | 1.97        | 0.94     |
| 7:AU:725:ARG:NE   | 7:AU:749:ALA:HB2  | 1.82        | 0.94     |
| 4:AK:13:ALA:CA    | 4:AK:16:HIS:CD2   | 2.51        | 0.94     |
| 1:CA:181:THR:HG23 | 2:CB:258:LEU:CD1  | 1.98        | 0.94     |
| 2:DP:277:ASP:HB2  | 2:DP:290:LYS:CE   | 1.98        | 0.94     |
| 1:DA:168:GLY:O    | 1:DA:170:VAL:HG23 | 1.68        | 0.94     |
| 3:DJ:407:ILE:HD11 | 6:DM:525:TRP:CZ2  | 2.03        | 0.94     |
| 3:DC:407:ILE:CD1  | 6:DF:525:TRP:CH2  | 2.49        | 0.94     |
| 1:AA:151:ILE:HG22 | 1:AA:152:LYS:H    | 1.31        | 0.94     |
| 2:BP:286:LYS:HZ3  | 3:BQ:358:ALA:HB2  | 1.23        | 0.94     |
| 3:BQ:328:PRO:CB   | 6:BT:563:LEU:HD11 | 1.98        | 0.94     |
| 3:BQ:331:VAL:HG11 | 6:BT:543:GLN:NE2  | 1.82        | 0.94     |
| 3:CQ:330:SER:OG   | 3:CQ:334:GLN:OE1  | 1.83        | 0.94     |
| 1:CH:181:THR:HB   | 2:CI:258:LEU:HD13 | 1.46        | 0.94     |
| 2:BI:229:ILE:HA   | 2:BI:240:LEU:CD2  | 1.98        | 0.94     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:AE:639:VAL:HG12 | 5:AE:639:VAL:O    | 1.68        | 0.94     |
| 2:CI:276:LEU:HD12 | 2:CI:290:LYS:HA   | 1.48        | 0.94     |
| 3:DJ:329:LEU:HA   | 3:DJ:359:PHE:HE2  | 1.31        | 0.94     |
| 2:CI:276:LEU:HD12 | 2:CI:290:LYS:CA   | 1.98        | 0.94     |
| 3:BJ:407:ILE:CG2  | 6:BM:568:ASN:ND2  | 2.26        | 0.94     |
| 5:CS:679:LEU:HD23 | 6:CT:571:TYR:CB   | 1.97        | 0.93     |
| 6:AM:517:LYS:NZ   | 6:AM:577:GLU:OE1  | 2.00        | 0.93     |
| 7:AU:712:PHE:HB3  | 7:AU:717:LEU:HD11 | 1.48        | 0.93     |
| 2:BB:203:LEU:HD11 | 3:BC:358:ALA:HB1  | 1.46        | 0.93     |
| 2:AP:293:GLU:HG3  | 3:AQ:368:GLU:CG   | 1.98        | 0.93     |
| 1:AA:151:ILE:HG21 | 8:CX:813:G:OP2    | 1.67        | 0.93     |
| 5:DL:683:ASN:HD22 | 6:DM:570:LEU:HD11 | 1.12        | 0.93     |
| 2:DI:277:ASP:CB   | 2:DI:290:LYS:NZ   | 2.32        | 0.93     |
| 3:DC:412:ASN:CB   | 3:DC:413:PRO:HD3  | 1.99        | 0.93     |
| 5:BS:624:TYR:CE1  | 7:BU:761:VAL:HG21 | 2.04        | 0.93     |
| 3:DJ:332:LEU:HB2  | 3:DJ:359:PHE:CE2  | 2.03        | 0.93     |
| 3:DJ:352:LEU:HD13 | 3:DJ:401:LEU:HD22 | 1.50        | 0.93     |
| 5:BL:678:MET:SD   | 6:BM:511:LEU:HD21 | 2.08        | 0.93     |
| 6:BF:511:LEU:HD21 | 6:BF:536:VAL:HG11 | 1.49        | 0.93     |
| 1:DH:153:PRO:HG3  | 1:DH:160:GLU:O    | 1.68        | 0.93     |
| 2:CP:207:LEU:HD13 | 2:CP:236:MET:SD   | 2.07        | 0.93     |
| 5:BE:632:GLN:NE2  | 5:CE:690:VAL:CG1  | 2.30        | 0.93     |
| 2:DP:210:LEU:HD21 | 2:DP:274:LEU:HD21 | 1.51        | 0.93     |
| 5:AE:644:GLU:O    | 5:AE:661:ALA:HA   | 1.69        | 0.93     |
| 2:BB:207:LEU:HD12 | 2:BB:236:MET:SD   | 2.08        | 0.93     |
| 3:DC:415:ILE:O    | 3:DC:418:LYS:HG3  | 1.67        | 0.93     |
| 1:BH:131:PHE:HZ   | 1:BH:134:PHE:HB3  | 1.33        | 0.92     |
| 2:BP:286:LYS:HD3  | 3:BQ:357:LYS:HZ3  | 1.26        | 0.92     |
| 1:CA:150:LYS:HG3  | 1:CA:162:GLU:HG3  | 0.93        | 0.92     |
| 3:CC:406:VAL:HG12 | 6:CF:565:ARG:HG3  | 1.48        | 0.92     |
| 5:DS:682:ASP:HA   | 7:DU:763:ARG:HH12 | 1.32        | 0.92     |
| 1:DO:115:TYR:HA   | 1:DO:186:PRO:CD   | 1.99        | 0.92     |
| 5:AS:686:LEU:HD22 | 7:AU:762:ILE:HG12 | 1.51        | 0.92     |
| 7:DG:729:GLY:HA3  | 7:DG:742:ILE:CG2  | 2.00        | 0.92     |
| 3:BJ:338:ASN:CB   | 3:BJ:340:THR:HG23 | 1.97        | 0.92     |
| 2:AP:232:VAL:HG22 | 2:AP:238:THR:HG23 | 1.52        | 0.92     |
| 3:AC:390:VAL:HG13 | 3:AC:392:LYS:HE2  | 1.49        | 0.92     |
| 3:AJ:347:ARG:HD3  | 6:AM:525:TRP:CZ2  | 2.05        | 0.92     |
| 6:DT:547:THR:HG21 | 6:DT:562:VAL:HG21 | 1.50        | 0.92     |
| 1:AA:121:LEU:CD2  | 1:AA:172:LEU:HD21 | 1.99        | 0.92     |
| 3:CC:410:LEU:HD22 | 6:CF:562:VAL:HG22 | 1.51        | 0.92     |
| 6:AF:583:GLU:O    | 2:AP:295:VAL:CG1  | 2.18        | 0.92     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:DH:182:VAL:HG23 | 2:DI:257:THR:HG23 | 1.52        | 0.92     |
| 3:CC:353:LEU:CD2  | 3:CC:371:LYS:HZ1  | 1.78        | 0.92     |
| 3:AJ:348:ASN:HD21 | 8:AX:840:A:H4'    | 1.14        | 0.92     |
| 6:DF:522:LYS:HD3  | 6:DF:571:TYR:HE2  | 1.33        | 0.92     |
| 3:DJ:407:ILE:CB   | 6:DM:568:ASN:ND2  | 2.30        | 0.92     |
| 5:BE:634:TRP:HZ2  | 5:BE:642:ARG:HD2  | 1.12        | 0.92     |
| 3:AC:340:THR:HG23 | 3:AC:414:LEU:HG   | 1.52        | 0.92     |
| 5:AS:683:ASN:HD22 | 6:AT:570:LEU:HD22 | 0.99        | 0.92     |
| 8:AY:839:C:H6     | 8:AY:839:C:H5''   | 1.32        | 0.92     |
| 3:DC:332:LEU:HD13 | 3:DC:359:PHE:HE1  | 1.33        | 0.91     |
| 3:BC:410:LEU:CD2  | 6:BF:562:VAL:HG22 | 2.00        | 0.91     |
| 2:AI:276:LEU:HD23 | 3:AJ:357:LYS:CD   | 1.99        | 0.91     |
| 6:CM:547:THR:HG21 | 6:CM:562:VAL:HG21 | 1.49        | 0.91     |
| 1:AA:179:SER:HB3  | 2:AB:258:LEU:HD11 | 1.53        | 0.91     |
| 5:AS:683:ASN:ND2  | 6:AT:570:LEU:CD2  | 2.30        | 0.91     |
| 2:BI:225:VAL:HG22 | 2:BI:245:MET:HG3  | 1.53        | 0.91     |
| 5:DE:618:ILE:CG2  | 7:DG:709:LEU:HD21 | 2.01        | 0.91     |
| 1:AO:194:ARG:HB3  | 4:AR:87:LYS:HG2   | 1.50        | 0.91     |
| 4:BK:59:GLU:HB2   | 7:BN:775:ARG:HH21 | 1.33        | 0.91     |
| 1:DH:178:VAL:CG1  | 2:DI:264:ASN:HD21 | 1.83        | 0.91     |
| 5:BS:634:TRP:CZ2  | 5:BS:642:ARG:HD2  | 2.05        | 0.91     |
| 3:DQ:332:LEU:O    | 3:DQ:336:VAL:HG23 | 1.70        | 0.91     |
| 3:DJ:344:ILE:CG2  | 3:DJ:406:VAL:HG13 | 1.99        | 0.91     |
| 2:AI:280:LEU:CD2  | 2:AI:283:VAL:HA   | 2.00        | 0.91     |
| 3:BQ:328:PRO:HB3  | 6:BT:563:LEU:HD13 | 1.52        | 0.91     |
| 5:CL:621:ILE:HD12 | 7:CN:741:VAL:CG2  | 1.99        | 0.91     |
| 3:AJ:329:LEU:O    | 3:AJ:333:THR:N    | 2.04        | 0.91     |
| 5:CE:634:TRP:HB3  | 5:CE:688:GLN:O    | 1.70        | 0.91     |
| 8:BX:806:G:H2'    | 8:BX:807:A:C8     | 2.04        | 0.91     |
| 3:CC:353:LEU:HD23 | 3:CC:371:LYS:HZ2  | 1.16        | 0.91     |
| 3:CJ:329:LEU:CD1  | 3:CJ:359:PHE:CE2  | 2.54        | 0.91     |
| 5:AE:610:VAL:HG11 | 5:AE:612:LYS:CE   | 1.99        | 0.91     |
| 3:CC:374:TRP:CH2  | 3:CC:394:ARG:HB2  | 2.05        | 0.91     |
| 2:AB:283:VAL:CG1  | 2:AB:286:LYS:HB3  | 2.00        | 0.91     |
| 1:CA:181:THR:HG22 | 2:CB:257:THR:O    | 1.69        | 0.91     |
| 4:CR:50:TYR:HD1   | 4:CR:54:ARG:O     | 1.54        | 0.91     |
| 2:AB:230:THR:HG21 | 2:AB:241:LYS:HG3  | 1.52        | 0.91     |
| 3:DJ:410:LEU:HD23 | 6:DM:562:VAL:HG13 | 1.52        | 0.91     |
| 6:AT:547:THR:CG2  | 6:AT:562:VAL:CG2  | 2.46        | 0.91     |
| 7:CG:725:ARG:HG2  | 7:CG:749:ALA:HB2  | 1.53        | 0.91     |
| 3:AQ:343:LEU:HD23 | 3:AQ:410:LEU:HD12 | 1.50        | 0.90     |
| 2:AP:293:GLU:CD   | 3:AQ:368:GLU:HB3  | 1.91        | 0.90     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:AH:179:SER:HB3  | 2:AI:258:LEU:CD1  | 2.02        | 0.90     |
| 8:AV:849:G:H21    | 8:CX:816:A:H1'    | 1.25        | 0.90     |
| 3:CJ:344:ILE:HG12 | 3:CJ:409:VAL:HG22 | 1.51        | 0.90     |
| 3:AC:343:LEU:HD23 | 3:AC:410:LEU:CD1  | 2.00        | 0.90     |
| 3:AJ:342:VAL:CG2  | 3:AJ:356:VAL:HG23 | 2.01        | 0.90     |
| 2:CB:203:LEU:HD21 | 3:CC:366:VAL:HG23 | 1.52        | 0.90     |
| 1:DO:130:THR:HG21 | 1:DO:132:LYS:HE2  | 1.53        | 0.90     |
| 1:CO:190:THR:O    | 1:CO:194:ARG:HG2  | 1.72        | 0.90     |
| 2:DB:249:ASN:HD21 | 8:DV:859:A:H4'    | 1.36        | 0.90     |
| 2:BB:205:ARG:HB3  | 2:BB:278:THR:HG21 | 1.54        | 0.90     |
| 8:CY:847:A:C2     | 8:CY:859:A:N6     | 2.40        | 0.90     |
| 6:DT:520:MET:SD   | 6:DT:575:VAL:HG21 | 2.11        | 0.90     |
| 4:BK:80:ALA:HB3   | 4:BK:81:PRO:HD3   | 1.54        | 0.90     |
| 7:AN:746:VAL:HG23 | 7:AN:755:ASN:O    | 1.71        | 0.90     |
| 2:DI:277:ASP:HB2  | 2:DI:290:LYS:HZ3  | 1.31        | 0.90     |
| 5:BE:621:ILE:CD1  | 7:BG:741:VAL:CG2  | 2.41        | 0.90     |
| 2:AI:280:LEU:CD2  | 2:AI:286:LYS:HE3  | 2.00        | 0.90     |
| 5:CE:625:LEU:HD21 | 7:CG:761:VAL:HG21 | 1.54        | 0.90     |
| 3:AC:332:LEU:HA   | 3:AC:359:PHE:HZ   | 1.34        | 0.90     |
| 2:CB:237:ASN:HD21 | 8:CV:835:U:H3     | 1.13        | 0.90     |
| 7:CN:712:PHE:HD2  | 7:CN:717:LEU:HD21 | 1.36        | 0.90     |
| 7:DN:758:GLY:HA2  | 5:DS:630:ARG:HE   | 1.36        | 0.90     |
| 2:DP:202:LYS:O    | 2:DP:280:LEU:HD11 | 1.73        | 0.89     |
| 2:BP:210:LEU:CD2  | 2:BP:279:LEU:CD1  | 2.51        | 0.89     |
| 4:DR:80:ALA:HB3   | 4:DR:81:PRO:HD3   | 1.54        | 0.89     |
| 5:CL:621:ILE:CD1  | 7:CN:741:VAL:HG23 | 2.01        | 0.89     |
| 3:DQ:363:CYS:SG   | 6:DT:565:ARG:HD3  | 2.12        | 0.89     |
| 5:CS:644:GLU:O    | 5:CS:661:ALA:HA   | 1.71        | 0.89     |
| 3:DC:357:LYS:HG3  | 3:DC:368:GLU:OE2  | 1.73        | 0.89     |
| 4:AD:82:MET:O     | 4:AD:86:MET:HG3   | 1.73        | 0.89     |
| 3:BC:377:VAL:HB   | 3:BC:390:VAL:HG22 | 1.54        | 0.89     |
| 3:AJ:348:ASN:ND2  | 8:AX:840:A:C4'    | 2.32        | 0.89     |
| 1:BO:155:ASN:HD21 | 8:DY:816:A:H61    | 1.20        | 0.89     |
| 7:DG:729:GLY:HA3  | 7:DG:742:ILE:HG21 | 1.55        | 0.89     |
| 3:DJ:366:VAL:HG22 | 3:DJ:400:PHE:CD1  | 2.07        | 0.89     |
| 8:AV:839:C:O2'    | 8:AV:840:A:H5'    | 1.72        | 0.89     |
| 1:DA:140:LEU:HD13 | 1:DA:180:MET:CE   | 2.01        | 0.89     |
| 2:BI:229:ILE:HA   | 2:BI:240:LEU:HD22 | 1.51        | 0.89     |
| 5:CE:636:TYR:OH   | 7:CG:725:ARG:NH1  | 2.06        | 0.89     |
| 8:CV:830:A:H4'    | 8:CV:831:A:OP2    | 1.72        | 0.89     |
| 2:BP:294:ALA:O    | 2:BP:295:VAL:HG23 | 1.73        | 0.89     |
| 8:DX:839:C:C2'    | 8:DX:840:A:H5'    | 2.03        | 0.89     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AQ:328:PRO:CB   | 6:AT:563:LEU:HD13 | 2.00        | 0.89     |
| 5:CL:678:MET:HE2  | 6:CM:572:ILE:CG2  | 2.03        | 0.89     |
| 2:DI:237:ASN:HD21 | 8:DX:835:U:H3     | 1.21        | 0.89     |
| 6:BM:524:LYS:HG2  | 6:BM:570:LEU:CD1  | 2.02        | 0.89     |
| 5:AS:650:PHE:HB3  | 5:AS:656:LEU:HD23 | 1.54        | 0.89     |
| 6:DF:519:VAL:HG11 | 6:DF:572:ILE:HD11 | 1.53        | 0.89     |
| 2:AI:225:VAL:HG22 | 2:AI:245:MET:HG3  | 1.53        | 0.89     |
| 3:BJ:344:ILE:CD1  | 3:BJ:365:MET:CE   | 2.51        | 0.89     |
| 2:BP:237:ASN:ND2  | 8:BY:835:U:H3     | 1.69        | 0.89     |
| 5:BE:634:TRP:CZ2  | 5:BE:642:ARG:CD   | 2.56        | 0.89     |
| 3:DC:347:ARG:NH2  | 8:DV:839:C:H4'    | 1.88        | 0.89     |
| 6:BM:524:LYS:HB3  | 8:BX:838:A:C2     | 2.07        | 0.89     |
| 5:AE:621:ILE:HD12 | 7:AG:741:VAL:CG2  | 2.02        | 0.89     |
| 5:CL:674:LEU:HD13 | 6:CM:573:ARG:HD3  | 1.54        | 0.89     |
| 5:BE:677:ILE:HG21 | 5:BE:679:LEU:HD21 | 1.55        | 0.89     |
| 5:CS:621:ILE:HD11 | 7:CU:741:VAL:HG21 | 1.55        | 0.89     |
| 2:DI:291:LYS:O    | 2:DI:295:VAL:HG23 | 1.73        | 0.89     |
| 4:CR:64:ARG:HH11  | 7:CU:738:MET:HG3  | 1.38        | 0.88     |
| 4:AK:13:ALA:CA    | 4:AK:16:HIS:HD2   | 1.85        | 0.88     |
| 1:BO:137:HIS:CE1  | 8:BY:834:U:C2     | 2.61        | 0.88     |
| 1:DH:150:LYS:CG   | 1:DH:163:GLU:O    | 2.22        | 0.88     |
| 1:AH:182:VAL:HG23 | 2:AI:257:THR:CG2  | 2.02        | 0.88     |
| 2:DP:277:ASP:HB2  | 2:DP:290:LYS:HE2  | 1.54        | 0.88     |
| 7:BN:742:ILE:HB   | 7:BN:760:VAL:HG12 | 1.53        | 0.88     |
| 5:DL:634:TRP:HZ2  | 5:DL:642:ARG:HD2  | 1.38        | 0.88     |
| 2:AP:286:LYS:HD3  | 3:AQ:357:LYS:HZ3  | 1.36        | 0.88     |
| 2:CI:280:LEU:HD13 | 2:CI:286:LYS:CG   | 2.02        | 0.88     |
| 1:DH:120:ILE:O    | 1:DH:178:VAL:CG2  | 2.20        | 0.88     |
| 3:BQ:410:LEU:CD2  | 6:BT:562:VAL:HG13 | 2.03        | 0.88     |
| 7:BN:709:LEU:HD21 | 7:BN:734:PHE:HB3  | 1.54        | 0.88     |
| 5:BL:678:MET:HE3  | 6:BM:511:LEU:HD21 | 1.52        | 0.88     |
| 2:BP:236:MET:CE   | 8:BY:836:U:O2     | 2.20        | 0.88     |
| 2:AB:280:LEU:HD12 | 2:BB:295:VAL:HG22 | 1.54        | 0.88     |
| 1:DA:179:SER:HB3  | 2:DB:258:LEU:HD11 | 1.53        | 0.88     |
| 2:DB:276:LEU:HD11 | 3:DC:398:LYS:NZ   | 1.88        | 0.88     |
| 2:BB:206:PHE:CD2  | 2:BB:276:LEU:HD22 | 2.09        | 0.88     |
| 3:AC:316:LEU:HD11 | 3:AC:337:LYS:CE   | 2.04        | 0.88     |
| 1:BO:155:ASN:ND2  | 8:DY:816:A:N6     | 2.21        | 0.88     |
| 4:DK:39:MET:HE2   | 4:DK:68:ILE:HD12  | 1.55        | 0.88     |
| 4:AR:46:ILE:CD1   | 4:AR:58:LEU:HB2   | 2.01        | 0.88     |
| 2:CI:225:VAL:HG22 | 2:CI:245:MET:HG3  | 1.56        | 0.88     |
| 7:AN:705:HIS:CG   | 7:AN:706:PRO:HD3  | 2.09        | 0.88     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:DP:287:VAL:HA   | 2:DP:290:LYS:HE3  | 1.55        | 0.88     |
| 3:BQ:332:LEU:HD13 | 3:BQ:409:VAL:HG11 | 1.54        | 0.88     |
| 3:CJ:342:VAL:CG1  | 3:CJ:409:VAL:HG13 | 2.04        | 0.88     |
| 2:AP:276:LEU:HD13 | 3:AQ:357:LYS:HE3  | 1.54        | 0.87     |
| 3:BJ:315:GLU:O    | 3:BJ:319:ARG:HG3  | 1.73        | 0.87     |
| 5:DL:678:MET:HE3  | 6:DM:511:LEU:CD2  | 2.02        | 0.87     |
| 7:BU:742:ILE:HG21 | 7:BU:745:CYS:HB3  | 1.55        | 0.87     |
| 8:BX:859:A:C8     | 8:DV:814:A:C2     | 2.62        | 0.87     |
| 3:DQ:410:LEU:HB3  | 6:DT:559:LEU:HD22 | 1.54        | 0.87     |
| 3:CC:359:PHE:HB3  | 3:CC:365:MET:CG   | 2.04        | 0.87     |
| 5:DS:656:LEU:HD11 | 5:DS:687:LEU:CD1  | 2.04        | 0.87     |
| 3:DQ:332:LEU:CD1  | 6:DT:563:LEU:HD22 | 2.04        | 0.87     |
| 3:DJ:407:ILE:HD11 | 6:DM:525:TRP:CH2  | 2.10        | 0.87     |
| 6:BT:524:LYS:HB2  | 6:BT:570:LEU:CD2  | 2.02        | 0.87     |
| 8:CV:806:G:N2     | 8:CV:823:C:O2     | 2.07        | 0.87     |
| 2:AP:293:GLU:HG3  | 3:AQ:368:GLU:HB3  | 1.50        | 0.87     |
| 2:CB:286:LYS:O    | 2:CB:289:SER:N    | 2.08        | 0.87     |
| 2:CB:286:LYS:CE   | 3:CC:336:VAL:HG12 | 2.04        | 0.87     |
| 2:AI:254:GLN:O    | 2:AI:255:LEU:HD23 | 1.74        | 0.87     |
| 4:DK:88:ASN:O     | 4:DK:91:GLN:HG3   | 1.74        | 0.87     |
| 2:DI:277:ASP:HB2  | 2:DI:290:LYS:HZ2  | 1.00        | 0.87     |
| 2:CI:276:LEU:HD13 | 3:CJ:357:LYS:NZ   | 1.87        | 0.87     |
| 4:BK:9:VAL:HG13   | 4:BK:10:LEU:HG    | 1.54        | 0.87     |
| 3:BJ:338:ASN:HB3  | 3:BJ:340:THR:CG2  | 2.00        | 0.87     |
| 2:BB:286:LYS:O    | 2:BB:290:LYS:HG2  | 1.75        | 0.87     |
| 3:DC:412:ASN:HB2  | 3:DC:413:PRO:HD3  | 1.55        | 0.87     |
| 2:BB:249:ASN:HD21 | 8:BV:859:A:C5'    | 1.87        | 0.87     |
| 6:CF:521:VAL:HG22 | 6:CF:572:ILE:CG1  | 2.05        | 0.87     |
| 3:DQ:374:TRP:CZ2  | 3:DQ:391:ASN:ND2  | 2.42        | 0.87     |
| 6:DF:577:GLU:O    | 6:DF:580:GLU:HG2  | 1.75        | 0.87     |
| 2:DI:276:LEU:HD22 | 3:DJ:357:LYS:HE3  | 1.55        | 0.87     |
| 5:AL:621:ILE:HD12 | 7:AN:741:VAL:CG2  | 2.05        | 0.87     |
| 5:DS:618:ILE:HG21 | 7:DU:713:MET:SD   | 2.13        | 0.86     |
| 5:BS:661:ALA:O    | 5:BS:673:GLN:HA   | 1.74        | 0.86     |
| 1:DA:140:LEU:HD13 | 1:DA:180:MET:HE3  | 1.53        | 0.86     |
| 2:AB:206:PHE:HA   | 2:AB:276:LEU:CD1  | 2.05        | 0.86     |
| 1:CO:109:MET:HE2  | 1:CO:109:MET:HA   | 1.55        | 0.86     |
| 5:DS:644:GLU:O    | 5:DS:661:ALA:HA   | 1.75        | 0.86     |
| 6:AT:566:CYS:SG   | 6:AT:566:CYS:O    | 2.32        | 0.86     |
| 3:DJ:407:ILE:CA   | 6:DM:568:ASN:HD21 | 1.88        | 0.86     |
| 3:AJ:410:LEU:HD12 | 6:AM:559:LEU:CD2  | 2.04        | 0.86     |
| 3:CJ:332:LEU:HB2  | 3:CJ:359:PHE:CE2  | 2.09        | 0.86     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BS:686:LEU:O    | 5:BS:687:LEU:HD23 | 1.74        | 0.86     |
| 1:DA:140:LEU:CD1  | 1:DA:180:MET:HE3  | 2.04        | 0.86     |
| 7:CN:739:ASN:OD1  | 7:CN:763:ARG:HA   | 1.75        | 0.86     |
| 3:AJ:342:VAL:HG21 | 3:AJ:356:VAL:HG21 | 1.57        | 0.86     |
| 8:CV:814:A:O5'    | 8:CV:814:A:H8     | 1.58        | 0.86     |
| 5:BE:688:GLN:HE22 | 7:BG:757:ILE:CB   | 1.86        | 0.86     |
| 2:AI:229:ILE:HA   | 2:AI:240:LEU:CD2  | 2.05        | 0.86     |
| 2:DP:210:LEU:HD21 | 2:DP:274:LEU:CD2  | 2.05        | 0.86     |
| 1:DA:120:ILE:HD12 | 1:DA:179:SER:HB2  | 1.57        | 0.86     |
| 2:AP:276:LEU:HD13 | 3:AQ:357:LYS:CE   | 2.05        | 0.86     |
| 5:AS:688:GLN:HB3  | 7:AU:757:ILE:HG21 | 1.55        | 0.86     |
| 2:DP:204:VAL:HG12 | 2:DP:236:MET:CE   | 2.04        | 0.86     |
| 5:CL:674:LEU:HD13 | 6:CM:573:ARG:CD   | 2.05        | 0.86     |
| 7:AG:750:THR:HG22 | 7:AG:750:THR:O    | 1.73        | 0.86     |
| 1:AO:116:ARG:HG2  | 1:AO:187:PRO:HD3  | 1.58        | 0.86     |
| 1:AH:157:LYS:HD3  | 1:AH:159:ALA:HB3  | 1.58        | 0.86     |
| 2:BP:280:LEU:CD2  | 2:BP:286:LYS:HE3  | 2.02        | 0.86     |
| 4:DK:46:ILE:HD12  | 4:DK:46:ILE:O     | 1.74        | 0.86     |
| 7:AU:709:LEU:HD12 | 7:AU:734:PHE:HB3  | 1.57        | 0.86     |
| 7:CG:738:MET:O    | 7:CG:740:LEU:HD12 | 1.75        | 0.86     |
| 1:AH:181:THR:HA   | 2:AI:257:THR:O    | 1.76        | 0.86     |
| 3:CJ:363:CYS:SG   | 6:CM:565:ARG:HD3  | 2.16        | 0.86     |
| 2:BP:209:LYS:CB   | 2:BP:279:LEU:HD23 | 2.06        | 0.86     |
| 7:CU:719:LEU:HD21 | 7:CU:740:LEU:HD12 | 1.58        | 0.86     |
| 5:DS:677:ILE:HG22 | 5:DS:679:LEU:CD2  | 2.05        | 0.86     |
| 2:AB:286:LYS:NZ   | 2:AB:289:SER:OG   | 2.09        | 0.86     |
| 5:CE:618:ILE:HD12 | 5:CE:618:ILE:O    | 1.75        | 0.86     |
| 5:CE:621:ILE:HG13 | 7:CG:741:VAL:HG23 | 1.57        | 0.85     |
| 3:DQ:410:LEU:HD23 | 6:DT:562:VAL:CG2  | 2.06        | 0.85     |
| 2:BB:279:LEU:O    | 2:BB:283:VAL:HG22 | 1.74        | 0.85     |
| 5:BL:634:TRP:HZ2  | 5:BL:642:ARG:HD2  | 1.40        | 0.85     |
| 2:AB:269:ILE:HD11 | 3:AC:394:ARG:NH2  | 1.90        | 0.85     |
| 8:AY:807:A:H2'    | 8:AY:808:C:H5''   | 1.58        | 0.85     |
| 2:BP:210:LEU:CD2  | 2:BP:279:LEU:HD13 | 2.05        | 0.85     |
| 1:AO:112:HIS:O    | 1:AO:115:TYR:HB2  | 1.76        | 0.85     |
| 3:AQ:331:VAL:HG21 | 6:AT:543:GLN:HE22 | 1.38        | 0.85     |
| 5:BE:690:VAL:HG13 | 5:CE:690:VAL:HG13 | 1.57        | 0.85     |
| 3:AJ:407:ILE:HD11 | 6:AM:525:TRP:CZ3  | 2.12        | 0.85     |
| 2:BB:207:LEU:O    | 2:BB:232:VAL:HG21 | 1.77        | 0.85     |
| 5:CS:688:GLN:HB3  | 7:CU:760:VAL:HG23 | 1.59        | 0.85     |
| 2:BI:204:VAL:HG22 | 2:BI:236:MET:CE   | 2.05        | 0.85     |
| 2:BP:223:THR:HG23 | 2:BP:247:LEU:HA   | 1.57        | 0.85     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CM:547:THR:CG2  | 6:CM:562:VAL:HG23 | 2.05        | 0.85     |
| 3:BJ:407:ILE:CG1  | 6:BM:568:ASN:HD21 | 1.90        | 0.85     |
| 4:DR:81:PRO:O     | 4:DR:85:SER:HB2   | 1.76        | 0.85     |
| 3:CJ:333:THR:O    | 3:CJ:336:VAL:HG12 | 1.75        | 0.85     |
| 4:BK:9:VAL:CA     | 4:BK:80:ALA:HB2   | 2.07        | 0.85     |
| 1:AA:141:ILE:HD11 | 1:AA:171:LEU:HD12 | 1.58        | 0.85     |
| 4:BD:16:HIS:O     | 4:BD:31:LYS:HA    | 1.76        | 0.85     |
| 3:CQ:410:LEU:HD23 | 6:CT:562:VAL:HG22 | 1.56        | 0.85     |
| 4:DK:33:ILE:HD11  | 4:DK:44:SER:OG    | 1.77        | 0.85     |
| 3:AC:379:LYS:HG2  | 3:AC:387:SER:CB   | 2.07        | 0.85     |
| 7:BG:745:CYS:SG   | 7:BG:760:VAL:CG1  | 2.64        | 0.85     |
| 4:BK:9:VAL:CB     | 4:BK:80:ALA:HB1   | 2.07        | 0.85     |
| 2:DB:217:ILE:HG21 | 2:DB:265:ILE:HD13 | 1.58        | 0.85     |
| 2:BP:283:VAL:O    | 2:BP:287:VAL:HG13 | 1.76        | 0.85     |
| 7:DG:712:PHE:HB3  | 7:DG:717:LEU:HD11 | 1.56        | 0.85     |
| 2:AP:276:LEU:HD12 | 2:AP:290:LYS:CB   | 2.07        | 0.85     |
| 2:CI:276:LEU:CD2  | 3:CJ:357:LYS:HZ1  | 1.84        | 0.85     |
| 3:AJ:407:ILE:HD11 | 6:AM:525:TRP:HZ3  | 1.39        | 0.85     |
| 8:CY:838:A:H2'    | 8:CY:839:C:C6     | 2.12        | 0.85     |
| 2:DP:209:LYS:HB2  | 2:DP:279:LEU:CD2  | 2.05        | 0.85     |
| 3:AC:410:LEU:HD22 | 6:AF:562:VAL:HG22 | 1.57        | 0.85     |
| 2:BP:277:ASP:HB2  | 2:BP:290:LYS:HE2  | 1.57        | 0.85     |
| 3:BQ:331:VAL:HG21 | 6:BT:543:GLN:NE2  | 1.92        | 0.85     |
| 2:CB:236:MET:SD   | 3:CC:402:ARG:NH1  | 2.50        | 0.85     |
| 3:CC:408:VAL:CG2  | 6:CF:564:ILE:HG23 | 2.04        | 0.85     |
| 5:DL:624:TYR:CE2  | 7:DN:761:VAL:HG21 | 2.11        | 0.85     |
| 2:AP:232:VAL:CG2  | 2:AP:238:THR:HG23 | 2.07        | 0.85     |
| 5:CE:686:LEU:CD2  | 7:CG:762:ILE:HG23 | 2.06        | 0.85     |
| 3:BC:373:MET:SD   | 6:BT:554:ALA:HB1  | 2.16        | 0.85     |
| 2:AI:280:LEU:HD22 | 2:AI:286:LYS:CG   | 2.07        | 0.85     |
| 2:DB:272:ASP:OD1  | 3:DC:397:SER:OG   | 1.94        | 0.85     |
| 5:AL:636:TYR:CD2  | 5:AL:685:THR:HG23 | 2.11        | 0.85     |
| 5:CS:634:TRP:HZ2  | 5:CS:642:ARG:HD2  | 1.41        | 0.85     |
| 6:AT:522:LYS:NZ   | 6:AT:526:GLY:HA2  | 1.91        | 0.85     |
| 8:DX:806:G:H2'    | 8:DX:807:A:C8     | 2.11        | 0.85     |
| 1:AA:155:ASN:ND2  | 8:CX:812:U:O2'    | 2.09        | 0.84     |
| 2:BP:280:LEU:HD23 | 2:BP:286:LYS:HG3  | 1.57        | 0.84     |
| 3:AJ:331:VAL:HG11 | 6:AM:543:GLN:OE1  | 1.76        | 0.84     |
| 7:BN:756:ASN:O    | 7:BN:757:ILE:HD13 | 1.77        | 0.84     |
| 4:BK:9:VAL:HB     | 4:BK:80:ALA:CB    | 2.07        | 0.84     |
| 1:AO:194:ARG:O    | 4:AR:87:LYS:HA    | 1.75        | 0.84     |
| 2:CI:280:LEU:HD22 | 2:CI:286:LYS:HB2  | 1.58        | 0.84     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:BP:236:MET:HE2  | 8:BY:836:U:H3     | 1.41        | 0.84     |
| 7:AU:741:VAL:CG2  | 7:AU:761:VAL:HG22 | 2.05        | 0.84     |
| 3:BC:407:ILE:HD13 | 6:BF:568:ASN:OD1  | 1.77        | 0.84     |
| 5:DS:634:TRP:CH2  | 5:DS:664:ILE:HD12 | 2.12        | 0.84     |
| 2:CB:219:LEU:HD12 | 2:CB:223:THR:HB   | 1.59        | 0.84     |
| 2:AP:293:GLU:HG3  | 3:AQ:368:GLU:HG2  | 1.57        | 0.84     |
| 6:BT:524:LYS:HA   | 6:BT:570:LEU:CD1  | 2.08        | 0.84     |
| 7:BN:742:ILE:HB   | 7:BN:760:VAL:CG1  | 2.07        | 0.84     |
| 1:AH:112:HIS:O    | 1:AH:115:TYR:HB2  | 1.78        | 0.84     |
| 4:DR:30:GLY:HA3   | 4:DR:46:ILE:HG22  | 1.56        | 0.84     |
| 3:AJ:341:GLN:HG3  | 3:AJ:414:LEU:HD22 | 1.60        | 0.84     |
| 1:DO:116:ARG:HB2  | 1:DO:184:GLY:O    | 1.77        | 0.84     |
| 4:BK:47:THR:CG2   | 4:BK:57:GLN:HE22  | 1.90        | 0.84     |
| 2:DP:276:LEU:HD13 | 3:DQ:357:LYS:HE2  | 0.88        | 0.84     |
| 1:CO:195:VAL:CG1  | 4:CR:92:GLY:N     | 2.41        | 0.84     |
| 7:BU:709:LEU:O    | 7:BU:713:MET:HB2  | 1.75        | 0.84     |
| 6:BF:539:TYR:CD2  | 6:BF:566:CYS:HB3  | 2.13        | 0.84     |
| 8:DX:858:A:O2'    | 8:DX:859:A:C8     | 2.30        | 0.84     |
| 7:AN:742:ILE:HB   | 7:AN:760:VAL:HG12 | 1.59        | 0.84     |
| 3:DQ:330:SER:O    | 3:DQ:333:THR:OG1  | 1.94        | 0.84     |
| 5:AL:651:ASP:HB3  | 6:AM:507:PRO:HD2  | 1.57        | 0.84     |
| 3:AQ:409:VAL:O    | 3:AQ:410:LEU:HD23 | 1.78        | 0.84     |
| 3:BQ:328:PRO:CB   | 6:BT:563:LEU:HD13 | 2.05        | 0.84     |
| 1:BH:178:VAL:CB   | 2:BI:264:ASN:ND2  | 2.41        | 0.84     |
| 1:AA:121:LEU:HD21 | 1:AA:172:LEU:CD2  | 2.06        | 0.84     |
| 3:DC:332:LEU:HD22 | 3:DC:359:PHE:CE1  | 2.12        | 0.84     |
| 6:BF:539:TYR:CE2  | 8:BV:837:G:C2     | 2.65        | 0.84     |
| 5:DL:663:GLU:HB2  | 5:DL:671:ARG:HB2  | 1.60        | 0.84     |
| 7:DN:742:ILE:HG21 | 7:DN:745:CYS:HB3  | 1.58        | 0.84     |
| 3:CQ:342:VAL:HG13 | 3:CQ:410:LEU:O    | 1.78        | 0.83     |
| 5:AL:621:ILE:HD11 | 7:AN:761:VAL:HG13 | 1.59        | 0.83     |
| 5:DE:667:LYS:O    | 5:DE:668:THR:CG2  | 2.23        | 0.83     |
| 5:CL:686:LEU:O    | 5:CL:687:LEU:HD23 | 1.76        | 0.83     |
| 6:AF:558:HIS:NE2  | 3:AQ:413:PRO:HD2  | 1.93        | 0.83     |
| 4:BD:48:VAL:HG12  | 4:BD:56:ALA:O     | 1.78        | 0.83     |
| 2:DI:261:ARG:NH1  | 2:DI:263:ASN:HB3  | 1.93        | 0.83     |
| 2:BP:218:GLU:OE1  | 2:BP:267:TYR:OH   | 1.95        | 0.83     |
| 1:AO:179:SER:HB3  | 2:AP:258:LEU:HD11 | 1.59        | 0.83     |
| 6:CM:514:LEU:HD12 | 6:CM:517:LYS:HD2  | 1.60        | 0.83     |
| 2:CI:276:LEU:CD1  | 2:CI:290:LYS:HA   | 2.08        | 0.83     |
| 3:BJ:408:VAL:HG22 | 6:BM:564:ILE:CG2  | 2.05        | 0.83     |
| 1:BO:169:LEU:HD21 | 4:BR:80:ALA:HB1   | 1.58        | 0.83     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BE:683:ASN:CG   | 6:BF:570:LEU:HD11 | 1.96        | 0.83     |
| 2:DI:274:LEU:C    | 2:DI:274:LEU:HD23 | 1.99        | 0.83     |
| 4:DK:48:VAL:CG1   | 4:DK:56:ALA:HB3   | 2.07        | 0.83     |
| 8:CX:847:A:O2'    | 8:CX:848:U:H5'    | 1.78        | 0.83     |
| 2:AP:247:LEU:HD23 | 2:AP:250:ARG:HG3  | 1.60        | 0.83     |
| 8:AX:813:G:N3     | 8:AX:815:A:OP1    | 2.11        | 0.83     |
| 3:DJ:407:ILE:HG23 | 6:DM:568:ASN:HD22 | 1.01        | 0.83     |
| 3:AC:410:LEU:CD2  | 6:AF:562:VAL:HG22 | 2.08        | 0.83     |
| 2:CB:207:LEU:HD12 | 2:CB:236:MET:HG3  | 1.60        | 0.83     |
| 6:BF:548:GLU:HB3  | 6:BF:555:LEU:HD11 | 1.60        | 0.83     |
| 3:DJ:410:LEU:HD23 | 6:DM:562:VAL:CG1  | 2.08        | 0.83     |
| 3:BQ:412:ASN:CG   | 3:BQ:413:PRO:HD2  | 1.99        | 0.83     |
| 5:CS:674:LEU:CD1  | 5:CS:677:ILE:HD11 | 2.08        | 0.83     |
| 2:BI:207:LEU:HD23 | 2:BI:210:LEU:HD12 | 1.59        | 0.83     |
| 4:BK:47:THR:HG23  | 4:BK:57:GLN:HE22  | 1.43        | 0.83     |
| 2:DP:267:TYR:HB2  | 3:DQ:400:PHE:O    | 1.77        | 0.83     |
| 1:BA:118:ARG:NH2  | 1:BA:183:GLU:OE1  | 2.10        | 0.83     |
| 3:BQ:328:PRO:HB2  | 6:BT:563:LEU:CD1  | 2.07        | 0.83     |
| 2:BP:202:LYS:HE3  | 2:BP:204:VAL:HG22 | 1.59        | 0.83     |
| 1:BA:130:THR:HG21 | 1:BA:132:LYS:HE2  | 1.61        | 0.83     |
| 2:AI:280:LEU:HB2  | 2:AI:286:LYS:HD3  | 1.58        | 0.83     |
| 6:BF:540:MET:HB2  | 6:BF:566:CYS:SG   | 2.19        | 0.83     |
| 5:AE:631:ILE:HD11 | 5:DE:628:ARG:HH12 | 1.42        | 0.83     |
| 6:CF:566:CYS:SG   | 6:CF:566:CYS:O    | 2.37        | 0.83     |
| 4:BR:8:LYS:O      | 4:BR:12:GLU:HG2   | 1.79        | 0.83     |
| 2:BP:240:LEU:CB   | 2:BP:243:VAL:HG21 | 2.08        | 0.83     |
| 2:BP:217:ILE:HG21 | 2:BP:265:ILE:HD13 | 1.58        | 0.83     |
| 5:AL:688:GLN:HG2  | 7:AN:760:VAL:HG23 | 1.60        | 0.83     |
| 2:CB:207:LEU:HD23 | 2:CB:210:LEU:HD12 | 1.60        | 0.83     |
| 4:CK:48:VAL:HG13  | 4:CK:56:ALA:HB3   | 1.59        | 0.83     |
| 6:BM:519:VAL:HG21 | 6:BM:572:ILE:HD11 | 1.60        | 0.83     |
| 7:CN:742:ILE:CG2  | 7:CN:745:CYS:HB3  | 2.08        | 0.83     |
| 5:BL:679:LEU:HD23 | 6:BM:571:TYR:CB   | 2.08        | 0.83     |
| 1:CA:181:THR:HG23 | 2:CB:258:LEU:HD13 | 1.59        | 0.83     |
| 3:DQ:352:LEU:CD1  | 3:DQ:401:LEU:HD22 | 2.08        | 0.83     |
| 6:DF:547:THR:CG2  | 6:DF:562:VAL:CG2  | 2.35        | 0.83     |
| 5:AS:673:GLN:O    | 5:AS:674:LEU:HD23 | 1.78        | 0.83     |
| 4:BK:28:TYR:OH    | 7:BN:769:MET:CE   | 2.27        | 0.83     |
| 5:BL:685:THR:O    | 5:BL:686:LEU:HD23 | 1.78        | 0.83     |
| 2:DP:271:PRO:HG2  | 2:DP:274:LEU:HB2  | 1.60        | 0.83     |
| 5:BL:618:ILE:N    | 7:BN:709:LEU:HD13 | 1.94        | 0.83     |
| 1:CH:121:LEU:HD11 | 1:CH:172:LEU:HD11 | 1.60        | 0.83     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:BO:137:HIS:NE2  | 8:BY:834:U:C2'    | 2.41        | 0.83     |
| 2:DB:249:ASN:HD21 | 8:DV:859:A:C5'    | 1.92        | 0.82     |
| 7:CG:705:HIS:HB3  | 7:CG:736:PRO:HA   | 1.61        | 0.82     |
| 3:DC:332:LEU:HD13 | 3:DC:359:PHE:CE1  | 2.14        | 0.82     |
| 1:BO:178:VAL:HG13 | 2:BP:264:ASN:HD21 | 1.41        | 0.82     |
| 2:BI:219:LEU:HD12 | 2:BI:223:THR:HG21 | 1.58        | 0.82     |
| 3:DQ:370:VAL:HB   | 3:DQ:399:MET:HE3  | 1.57        | 0.82     |
| 4:BK:59:GLU:HB2   | 7:BN:775:ARG:NH2  | 1.94        | 0.82     |
| 2:BI:270:LEU:HB3  | 2:BI:274:LEU:CD1  | 2.10        | 0.82     |
| 1:BO:120:ILE:O    | 1:BO:177:LEU:HD12 | 1.79        | 0.82     |
| 3:DC:330:SER:OG   | 3:DC:334:GLN:NE2  | 2.12        | 0.82     |
| 6:AT:547:THR:CG2  | 6:AT:562:VAL:HG21 | 2.00        | 0.82     |
| 5:CS:683:ASN:CG   | 6:CT:570:LEU:HD11 | 1.98        | 0.82     |
| 4:AK:5:VAL:CG1    | 4:AK:6:PRO:HD3    | 2.09        | 0.82     |
| 8:DX:858:A:O2'    | 8:DX:859:A:N7     | 2.12        | 0.82     |
| 8:CY:812:U:O2     | 8:CY:818:G:N2     | 2.12        | 0.82     |
| 1:DH:121:LEU:HD21 | 1:DH:172:LEU:HD11 | 1.61        | 0.82     |
| 2:BP:204:VAL:O    | 2:BP:208:MET:CE   | 2.26        | 0.82     |
| 3:AC:407:ILE:HG23 | 6:AF:568:ASN:CG   | 2.00        | 0.82     |
| 7:BU:742:ILE:CG2  | 7:BU:745:CYS:HB3  | 2.09        | 0.82     |
| 5:BL:661:ALA:CB   | 5:BL:677:ILE:HD12 | 2.10        | 0.82     |
| 4:CK:9:VAL:HG11   | 4:CK:73:LEU:HD13  | 1.62        | 0.82     |
| 4:AK:64:ARG:NE    | 4:AK:66:SER:OG    | 2.13        | 0.82     |
| 5:AE:688:GLN:HG2  | 7:AG:760:VAL:HG23 | 1.59        | 0.82     |
| 5:DL:621:ILE:HD13 | 7:DN:741:VAL:HG23 | 1.60        | 0.82     |
| 1:BO:121:LEU:HD21 | 1:BO:172:LEU:HD21 | 1.60        | 0.82     |
| 2:CI:223:THR:CG2  | 2:CI:247:LEU:HD23 | 2.09        | 0.82     |
| 5:DS:618:ILE:CG2  | 7:DU:713:MET:SD   | 2.68        | 0.82     |
| 5:DE:655:ASN:ND2  | 8:DV:831:A:N1     | 2.27        | 0.82     |
| 2:BP:280:LEU:HD23 | 2:BP:286:LYS:CE   | 2.09        | 0.82     |
| 1:DA:120:ILE:O    | 1:DA:177:LEU:HD12 | 1.80        | 0.82     |
| 2:BI:270:LEU:HB3  | 2:BI:274:LEU:HD12 | 1.61        | 0.82     |
| 2:BP:267:TYR:HB2  | 3:BQ:400:PHE:O    | 1.79        | 0.82     |
| 1:DO:181:THR:HB   | 2:DP:258:LEU:HD12 | 1.61        | 0.82     |
| 4:AK:63:ILE:HD11  | 7:AN:769:MET:HE1  | 1.61        | 0.82     |
| 2:AP:276:LEU:HB3  | 3:AQ:357:LYS:CE   | 2.10        | 0.82     |
| 3:CJ:361:ARG:NH2  | 8:CX:831:A:OP1    | 2.12        | 0.82     |
| 3:DQ:366:VAL:HG22 | 3:DQ:400:PHE:CE2  | 2.15        | 0.82     |
| 5:BS:624:TYR:CE1  | 7:BU:761:VAL:CG2  | 2.63        | 0.82     |
| 6:BF:528:GLU:HG2  | 6:BF:573:ARG:NH2  | 1.95        | 0.81     |
| 1:CA:121:LEU:HD21 | 1:CA:172:LEU:HD21 | 1.62        | 0.81     |
| 3:CQ:374:TRP:NE1  | 3:CQ:391:ASN:ND2  | 2.27        | 0.81     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:BM:539:TYR:CE1  | 8:BX:837:G:C6     | 2.67        | 0.81     |
| 1:DA:178:VAL:O    | 2:DB:260:ILE:HA   | 1.80        | 0.81     |
| 3:AC:330:SER:O    | 3:AC:334:GLN:HG2  | 1.80        | 0.81     |
| 6:CM:567:ASN:O    | 8:CX:838:A:C6     | 2.34        | 0.81     |
| 3:BJ:407:ILE:CG1  | 6:BM:568:ASN:ND2  | 2.44        | 0.81     |
| 3:BQ:336:VAL:HG22 | 3:BQ:356:VAL:HB   | 1.61        | 0.81     |
| 4:DD:29:ARG:NH2   | 4:DD:49:THR:OG1   | 2.12        | 0.81     |
| 6:CM:514:LEU:O    | 6:CM:533:LEU:HD23 | 1.79        | 0.81     |
| 8:AV:810:A:C2     | 8:AV:811:C:N3     | 2.49        | 0.81     |
| 1:DA:188:LYS:O    | 1:DA:192:ILE:HG12 | 1.80        | 0.81     |
| 2:CI:293:GLU:HB3  | 3:CJ:368:GLU:OE1  | 1.79        | 0.81     |
| 3:AC:343:LEU:CD2  | 3:AC:410:LEU:HD12 | 2.08        | 0.81     |
| 2:BP:276:LEU:CD1  | 3:BQ:357:LYS:HE3  | 2.09        | 0.81     |
| 3:BJ:402:ARG:NH2  | 8:BX:836:U:H1'    | 1.95        | 0.81     |
| 3:AC:346:CYS:O    | 6:AF:525:TRP:HH2  | 1.62        | 0.81     |
| 7:CN:709:LEU:HD13 | 7:CN:734:PHE:CB   | 2.10        | 0.81     |
| 8:AX:814:A:H2'    | 8:AX:815:A:C8     | 2.16        | 0.81     |
| 3:AJ:327:GLY:O    | 3:AJ:330:SER:N    | 2.13        | 0.81     |
| 7:DG:741:VAL:HG22 | 7:DG:761:VAL:HG22 | 1.60        | 0.81     |
| 4:AK:13:ALA:C     | 4:AK:16:HIS:CD2   | 2.51        | 0.81     |
| 3:BQ:412:ASN:OD1  | 3:BQ:413:PRO:HD2  | 1.80        | 0.81     |
| 5:DE:618:ILE:HD13 | 7:DG:709:LEU:HD23 | 1.62        | 0.81     |
| 3:AQ:332:LEU:O    | 3:AQ:336:VAL:HG23 | 1.81        | 0.81     |
| 2:CP:263:ASN:HB2  | 8:CY:835:U:O2'    | 1.80        | 0.81     |
| 5:BE:654:MET:O    | 5:BE:656:LEU:CD1  | 2.28        | 0.81     |
| 3:DQ:332:LEU:HD11 | 6:DT:563:LEU:CD2  | 2.10        | 0.81     |
| 6:AM:514:LEU:HD23 | 6:AM:514:LEU:O    | 1.81        | 0.81     |
| 1:CA:133:ALA:HB3  | 1:CA:141:ILE:HB   | 1.63        | 0.81     |
| 3:AJ:410:LEU:CD1  | 6:AM:559:LEU:HD22 | 2.08        | 0.81     |
| 1:DH:178:VAL:CG1  | 2:DI:264:ASN:ND2  | 2.40        | 0.81     |
| 4:DK:39:MET:CE    | 4:DK:68:ILE:HD12  | 2.10        | 0.81     |
| 5:BE:632:GLN:HE22 | 5:CE:690:VAL:HG12 | 1.44        | 0.81     |
| 8:AY:852:U:H4'    | 7:CU:706:PRO:HG2  | 1.61        | 0.81     |
| 3:DJ:407:ILE:CG1  | 6:DM:568:ASN:HD21 | 1.94        | 0.81     |
| 1:BH:118:ARG:HH12 | 1:BH:128:ILE:HD11 | 1.45        | 0.81     |
| 6:DM:511:LEU:O    | 6:DM:515:THR:HG23 | 1.81        | 0.81     |
| 3:BJ:407:ILE:HG12 | 6:BM:568:ASN:HD21 | 1.45        | 0.81     |
| 5:BS:671:ARG:NH2  | 8:BY:868:G:O2'    | 2.13        | 0.81     |
| 5:DE:657:VAL:O    | 5:DE:658:LEU:HD23 | 1.78        | 0.81     |
| 4:BK:47:THR:HG23  | 4:BK:57:GLN:NE2   | 1.96        | 0.81     |
| 2:BP:205:ARG:HA   | 2:BP:208:MET:CE   | 2.11        | 0.81     |
| 3:AJ:328:PRO:O    | 3:AJ:331:VAL:HG23 | 1.81        | 0.81     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:AD:83:LEU:HD23  | 4:AD:86:MET:CE    | 2.10        | 0.81     |
| 3:AJ:402:ARG:NH2  | 8:AX:836:U:H1'    | 1.97        | 0.81     |
| 2:BP:240:LEU:HB2  | 2:BP:243:VAL:HG21 | 1.60        | 0.81     |
| 7:CG:750:THR:HG22 | 7:CG:750:THR:O    | 1.79        | 0.81     |
| 5:DE:685:THR:O    | 5:DE:686:LEU:HD23 | 1.81        | 0.81     |
| 7:BN:765:ASN:HB2  | 8:BX:832:U:O2     | 1.79        | 0.80     |
| 6:CT:540:MET:HB2  | 6:CT:566:CYS:SG   | 2.21        | 0.80     |
| 3:CJ:410:LEU:CD2  | 6:CM:562:VAL:HG22 | 2.11        | 0.80     |
| 2:BP:236:MET:CE   | 8:BY:836:U:C2     | 2.64        | 0.80     |
| 5:CS:686:LEU:HD22 | 7:CU:762:ILE:HG12 | 1.61        | 0.80     |
| 3:DJ:352:LEU:CD1  | 3:DJ:401:LEU:CD2  | 2.59        | 0.80     |
| 2:DP:229:ILE:HA   | 2:DP:240:LEU:HD23 | 1.63        | 0.80     |
| 4:CR:9:VAL:HA     | 4:CR:79:ASN:HD22  | 1.46        | 0.80     |
| 5:CE:613:VAL:CG1  | 5:CE:616:GLN:HE22 | 1.94        | 0.80     |
| 4:BK:47:THR:CG2   | 4:BK:55:VAL:HG11  | 2.11        | 0.80     |
| 2:CI:229:ILE:HA   | 2:CI:240:LEU:CD2  | 2.10        | 0.80     |
| 8:BV:838:A:H8     | 8:BV:838:A:H5''   | 1.46        | 0.80     |
| 5:BS:667:LYS:O    | 5:BS:668:THR:HG22 | 1.81        | 0.80     |
| 3:CQ:369:ASN:ND2  | 3:CQ:395:TYR:OH   | 2.14        | 0.80     |
| 5:DL:635:LEU:HD22 | 5:DL:679:LEU:HD13 | 1.61        | 0.80     |
| 2:AI:276:LEU:HD23 | 3:AJ:357:LYS:HE2  | 1.61        | 0.80     |
| 6:BF:558:HIS:CD2  | 3:BQ:413:PRO:HD3  | 2.17        | 0.80     |
| 7:DG:709:LEU:HD22 | 7:DG:734:PHE:HD2  | 1.46        | 0.80     |
| 5:DL:621:ILE:HD13 | 7:DN:741:VAL:CG2  | 2.11        | 0.80     |
| 7:CN:741:VAL:HG22 | 7:CN:761:VAL:HG22 | 1.62        | 0.80     |
| 4:CK:15:GLY:N     | 4:CK:32:LEU:O     | 2.14        | 0.80     |
| 2:AI:276:LEU:HD23 | 3:AJ:357:LYS:HD3  | 1.61        | 0.80     |
| 3:AJ:333:THR:O    | 3:AJ:336:VAL:HG12 | 1.81        | 0.80     |
| 6:BT:526:GLY:HA3  | 8:BY:868:G:OP1    | 1.81        | 0.80     |
| 4:DK:80:ALA:HB3   | 4:DK:81:PRO:HD3   | 1.63        | 0.80     |
| 3:BJ:333:THR:HA   | 3:BJ:359:PHE:CZ   | 2.15        | 0.80     |
| 1:BA:114:ASP:OD2  | 4:BD:87:LYS:NZ    | 2.15        | 0.80     |
| 3:DJ:329:LEU:HA   | 3:DJ:359:PHE:CE2  | 2.15        | 0.80     |
| 2:CI:276:LEU:HD21 | 3:CJ:357:LYS:NZ   | 1.96        | 0.80     |
| 5:DL:678:MET:CE   | 6:DM:511:LEU:CD2  | 2.60        | 0.80     |
| 2:CB:291:LYS:O    | 2:CB:295:VAL:HG22 | 1.81        | 0.80     |
| 1:CH:120:ILE:HD12 | 1:CH:179:SER:HB2  | 1.63        | 0.80     |
| 7:DN:750:THR:HG22 | 7:DN:750:THR:O    | 1.81        | 0.80     |
| 5:BE:657:VAL:C    | 5:BE:658:LEU:HD23 | 2.01        | 0.80     |
| 2:AP:213:GLU:OE1  | 2:AP:213:GLU:HA   | 1.81        | 0.80     |
| 3:BC:319:ARG:HA   | 3:BC:322:GLU:HB3  | 1.63        | 0.80     |
| 4:BR:15:GLY:N     | 4:BR:32:LEU:O     | 2.14        | 0.80     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:DI:210:LEU:O    | 2:DI:229:ILE:HD12 | 1.80        | 0.80     |
| 3:AQ:407:ILE:HD11 | 6:AT:525:TRP:CZ3  | 2.16        | 0.80     |
| 2:BP:289:SER:HB3  | 3:BQ:357:LYS:HD3  | 1.64        | 0.80     |
| 5:BS:684:ILE:CG2  | 5:BS:687:LEU:CD2  | 2.59        | 0.80     |
| 2:CI:207:LEU:HD13 | 2:CI:236:MET:HG3  | 1.63        | 0.80     |
| 8:AY:839:C:H6     | 8:AY:839:C:C5'    | 1.94        | 0.80     |
| 2:CP:247:LEU:HD23 | 2:CP:250:ARG:HG3  | 1.63        | 0.80     |
| 2:DI:209:LYS:HB2  | 2:DI:279:LEU:CD2  | 2.11        | 0.80     |
| 8:AV:850:G:N2     | 8:AV:855:C:O2     | 2.13        | 0.80     |
| 3:BC:347:ARG:HA   | 6:BF:525:TRP:CZ2  | 2.15        | 0.80     |
| 1:AO:120:ILE:O    | 1:AO:177:LEU:HD12 | 1.82        | 0.80     |
| 8:BY:838:A:H5''   | 8:BY:838:A:H8     | 1.45        | 0.80     |
| 5:AS:621:ILE:HG21 | 7:AU:741:VAL:CG2  | 2.12        | 0.80     |
| 2:CB:220:LYS:HE2  | 3:CC:404:ASP:HB2  | 1.63        | 0.80     |
| 1:BO:181:THR:CB   | 2:BP:255:LEU:HD13 | 2.12        | 0.80     |
| 2:BP:280:LEU:CD2  | 2:BP:286:LYS:HE2  | 2.09        | 0.80     |
| 6:BT:558:HIS:C    | 6:BT:559:LEU:HD12 | 2.01        | 0.80     |
| 5:BE:662:GLU:HA   | 5:BE:672:LYS:O    | 1.81        | 0.80     |
| 8:CY:862:A:H2'    | 8:CY:863:G:H8     | 1.47        | 0.80     |
| 3:AJ:312:THR:HG23 | 3:AJ:313:PRO:HD3  | 1.64        | 0.80     |
| 3:DJ:407:ILE:CA   | 6:DM:568:ASN:ND2  | 2.43        | 0.79     |
| 2:DI:209:LYS:HB2  | 2:DI:279:LEU:HD22 | 1.64        | 0.79     |
| 3:DC:345:ASN:HD22 | 3:DC:408:VAL:HB   | 1.47        | 0.79     |
| 7:DU:705:HIS:O    | 7:DU:709:LEU:CD1  | 2.28        | 0.79     |
| 5:DS:677:ILE:CG2  | 5:DS:679:LEU:HD21 | 2.12        | 0.79     |
| 1:CA:128:ILE:HD12 | 1:CA:148:PHE:CE2  | 2.17        | 0.79     |
| 6:DF:524:LYS:HB2  | 6:DF:570:LEU:HD21 | 1.61        | 0.79     |
| 7:BN:716:LYS:HG3  | 7:BN:773:LEU:HD22 | 1.61        | 0.79     |
| 3:DJ:342:VAL:HG21 | 3:DJ:356:VAL:HG21 | 1.62        | 0.79     |
| 2:BP:206:PHE:CE1  | 2:BP:279:LEU:HB2  | 2.16        | 0.79     |
| 2:BP:236:MET:HE3  | 8:BY:836:U:C2     | 2.16        | 0.79     |
| 2:CB:203:LEU:HD13 | 3:CC:358:ALA:HB1  | 1.64        | 0.79     |
| 1:AH:135:ASP:OD2  | 1:AH:139:ASN:ND2  | 2.15        | 0.79     |
| 5:AS:679:LEU:HD23 | 6:AT:571:TYR:CB   | 2.12        | 0.79     |
| 5:BE:634:TRP:HZ2  | 5:BE:642:ARG:CD   | 1.92        | 0.79     |
| 3:CJ:410:LEU:HD23 | 6:CM:562:VAL:HG22 | 1.63        | 0.79     |
| 6:BM:539:TYR:CD1  | 8:BX:837:G:C6     | 2.70        | 0.79     |
| 2:BP:274:LEU:CD1  | 2:BP:279:LEU:HD11 | 2.11        | 0.79     |
| 1:DH:158:GLN:HE22 | 1:DH:160:GLU:HB3  | 1.46        | 0.79     |
| 1:AH:182:VAL:HG23 | 2:AI:257:THR:HG21 | 1.64        | 0.79     |
| 8:BV:847:A:C2     | 8:BV:859:A:N6     | 2.51        | 0.79     |
| 7:AU:748:MET:HG2  | 7:AU:753:GLN:HA   | 1.64        | 0.79     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:BU:719:LEU:HD23 | 7:BU:767:ILE:HD12 | 1.65        | 0.79     |
| 4:DR:81:PRO:HB2   | 4:DR:85:SER:OG    | 1.81        | 0.79     |
| 3:AQ:346:CYS:CB   | 3:AQ:350:LYS:HG3  | 2.12        | 0.79     |
| 3:DJ:352:LEU:HD13 | 3:DJ:401:LEU:CD2  | 2.12        | 0.79     |
| 5:BL:634:TRP:CZ2  | 5:BL:642:ARG:HD2  | 2.18        | 0.79     |
| 2:DP:237:ASN:HD21 | 8:DY:835:U:H3     | 1.31        | 0.79     |
| 3:AJ:396:ILE:HD12 | 3:AJ:399:MET:HE2  | 1.63        | 0.79     |
| 7:AN:718:SER:C    | 7:AN:719:LEU:HD12 | 2.02        | 0.79     |
| 3:DJ:361:ARG:HG2  | 8:DX:830:A:H5"    | 1.64        | 0.79     |
| 3:CJ:329:LEU:HD12 | 3:CJ:359:PHE:HE2  | 1.46        | 0.79     |
| 2:DB:287:VAL:O    | 2:DB:290:LYS:HG2  | 1.82        | 0.79     |
| 8:BV:838:A:OP2    | 8:BV:838:A:H4'    | 1.81        | 0.79     |
| 2:BI:204:VAL:HG22 | 2:BI:236:MET:HE2  | 1.62        | 0.79     |
| 1:DO:118:ARG:HB3  | 1:DO:181:THR:HG23 | 1.64        | 0.79     |
| 3:DJ:332:LEU:O    | 3:DJ:336:VAL:HG23 | 1.82        | 0.79     |
| 5:DE:688:GLN:HG2  | 7:DG:760:VAL:CG2  | 2.13        | 0.79     |
| 2:BP:276:LEU:HD12 | 2:BP:290:LYS:CA   | 2.13        | 0.79     |
| 5:DL:678:MET:CE   | 6:DM:511:LEU:HD21 | 2.08        | 0.79     |
| 6:DT:547:THR:CG2  | 6:DT:562:VAL:CG2  | 2.61        | 0.79     |
| 2:DB:219:LEU:CD2  | 2:DB:265:ILE:HG12 | 2.12        | 0.79     |
| 4:DR:88:ASN:O     | 4:DR:91:GLN:CG    | 2.30        | 0.79     |
| 1:CA:118:ARG:NH1  | 1:CA:128:ILE:HD11 | 1.98        | 0.79     |
| 7:DN:756:ASN:O    | 7:DN:757:ILE:HD13 | 1.82        | 0.79     |
| 6:BF:539:TYR:CD2  | 8:BV:837:G:N1     | 2.50        | 0.79     |
| 3:DQ:332:LEU:HD11 | 6:DT:563:LEU:HD22 | 1.63        | 0.79     |
| 5:BE:635:LEU:CD2  | 5:BE:679:LEU:HD13 | 2.12        | 0.79     |
| 3:BJ:415:ILE:HG13 | 6:BM:561:GLU:OE2  | 1.82        | 0.79     |
| 5:BE:644:GLU:O    | 5:BE:661:ALA:HA   | 1.82        | 0.79     |
| 3:AQ:328:PRO:CB   | 6:AT:563:LEU:CD1  | 2.55        | 0.79     |
| 5:DE:634:TRP:HZ2  | 5:DE:642:ARG:HD2  | 1.48        | 0.79     |
| 2:BP:280:LEU:HD23 | 2:BP:286:LYS:CG   | 2.11        | 0.79     |
| 7:BU:709:LEU:CD2  | 7:BU:713:MET:SD   | 2.69        | 0.79     |
| 2:DP:204:VAL:HA   | 2:DP:236:MET:HE1  | 1.63        | 0.79     |
| 2:BB:207:LEU:HD12 | 2:BB:236:MET:CE   | 2.12        | 0.79     |
| 5:BE:635:LEU:HD22 | 5:BE:679:LEU:HD13 | 1.63        | 0.79     |
| 1:DA:130:THR:HB   | 1:DA:143:CYS:HB2  | 1.64        | 0.79     |
| 2:AP:286:LYS:NZ   | 3:AQ:357:LYS:NZ   | 2.30        | 0.79     |
| 8:CY:814:A:C2     | 8:CY:815:A:C4     | 2.71        | 0.79     |
| 1:CO:182:VAL:HB   | 2:CP:257:THR:HG22 | 1.64        | 0.79     |
| 8:CV:866:U:H3'    | 8:CV:867:G:H5"    | 1.64        | 0.79     |
| 3:AQ:328:PRO:HB3  | 6:AT:563:LEU:HD11 | 1.65        | 0.78     |
| 6:CF:550:TYR:HA   | 6:CF:555:LEU:HA   | 1.64        | 0.78     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AC:361:ARG:CG   | 8:AV:830:A:H5''   | 2.09        | 0.78     |
| 2:DB:276:LEU:CD1  | 3:DC:368:GLU:OE2  | 2.30        | 0.78     |
| 2:AB:207:LEU:HD12 | 2:AB:236:MET:SD   | 2.23        | 0.78     |
| 6:CM:519:VAL:HG21 | 6:CM:572:ILE:HD11 | 1.64        | 0.78     |
| 7:BU:705:HIS:CD2  | 7:BU:736:PRO:O    | 2.36        | 0.78     |
| 3:DQ:331:VAL:HG21 | 6:DT:543:GLN:HE22 | 1.47        | 0.78     |
| 4:DR:46:ILE:HD13  | 4:DR:61:VAL:CG2   | 2.13        | 0.78     |
| 2:CP:203:LEU:HD21 | 3:CQ:400:PHE:HZ   | 1.46        | 0.78     |
| 1:CA:116:ARG:HB2  | 1:CA:184:GLY:HA3  | 1.64        | 0.78     |
| 3:BJ:342:VAL:CG1  | 3:BJ:409:VAL:HG13 | 2.12        | 0.78     |
| 3:CJ:370:VAL:HG11 | 3:CJ:399:MET:HE3  | 1.63        | 0.78     |
| 2:CI:284:GLU:HB3  | 2:CI:285:PRO:HD2  | 1.65        | 0.78     |
| 4:BK:47:THR:CB    | 4:BK:57:GLN:HE22  | 1.95        | 0.78     |
| 3:BJ:344:ILE:CD1  | 3:BJ:365:MET:HE1  | 2.08        | 0.78     |
| 1:DO:169:LEU:CD2  | 4:DR:80:ALA:HB1   | 2.12        | 0.78     |
| 3:AJ:342:VAL:HG21 | 3:AJ:356:VAL:HG23 | 1.62        | 0.78     |
| 2:AB:286:LYS:CE   | 3:AC:357:LYS:HG3  | 2.13        | 0.78     |
| 1:DO:115:TYR:HA   | 1:DO:186:PRO:HD3  | 1.64        | 0.78     |
| 2:BI:207:LEU:HD13 | 2:BI:236:MET:HG3  | 1.64        | 0.78     |
| 3:CC:417:GLY:O    | 3:CC:418:LYS:HG3  | 1.83        | 0.78     |
| 6:BM:539:TYR:CD1  | 8:BX:837:G:O6     | 2.36        | 0.78     |
| 1:DH:155:ASN:HB3  | 1:DH:158:GLN:O    | 1.81        | 0.78     |
| 4:DR:46:ILE:HD11  | 4:DR:61:VAL:CG1   | 2.13        | 0.78     |
| 8:BX:814:A:O2'    | 8:BX:815:A:O5'    | 2.02        | 0.78     |
| 6:AF:584:MET:HA   | 2:AP:295:VAL:CG1  | 2.14        | 0.78     |
| 2:AP:287:VAL:O    | 2:AP:291:LYS:HG3  | 1.82        | 0.78     |
| 2:CI:274:LEU:HD12 | 3:CJ:398:LYS:NZ   | 1.98        | 0.78     |
| 8:CX:814:A:H2'    | 8:CX:815:A:H8     | 1.44        | 0.78     |
| 8:AX:857:U:O2'    | 8:CV:814:A:C2     | 2.37        | 0.78     |
| 4:AR:5:VAL:HG12   | 4:AR:7:ILE:HG22   | 1.66        | 0.78     |
| 6:AF:511:LEU:HD13 | 6:AF:536:VAL:HG11 | 1.66        | 0.78     |
| 4:AK:84:LYS:HE2   | 4:AK:88:ASN:HD21  | 1.47        | 0.78     |
| 6:CM:558:HIS:C    | 6:CM:559:LEU:HD12 | 2.04        | 0.78     |
| 2:AB:286:LYS:HE3  | 3:AC:357:LYS:HG3  | 1.65        | 0.78     |
| 1:DH:150:LYS:HG2  | 1:DH:163:GLU:O    | 1.81        | 0.78     |
| 2:DI:271:PRO:O    | 3:DJ:398:LYS:HE2  | 1.83        | 0.78     |
| 4:CK:13:ALA:HA    | 4:CK:16:HIS:ND1   | 1.99        | 0.78     |
| 7:DN:705:HIS:N    | 7:DN:706:PRO:HD2  | 1.99        | 0.78     |
| 5:BL:635:LEU:HA   | 5:BL:687:LEU:HD23 | 1.66        | 0.78     |
| 2:DP:206:PHE:HZ   | 2:DP:276:LEU:HD23 | 1.49        | 0.78     |
| 5:BS:678:MET:HE1  | 6:BT:511:LEU:HD23 | 1.66        | 0.78     |
| 1:DO:169:LEU:HD23 | 4:DR:73:LEU:HB3   | 1.63        | 0.78     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:DJ:407:ILE:CG2  | 6:DM:568:ASN:HD22 | 1.73        | 0.78     |
| 2:DI:206:PHE:HE1  | 2:DI:210:LEU:HD11 | 1.47        | 0.78     |
| 1:BA:179:SER:HB3  | 2:BB:258:LEU:HD11 | 1.65        | 0.78     |
| 1:DH:153:PRO:HB3  | 1:DH:160:GLU:HG3  | 1.66        | 0.78     |
| 3:AC:352:LEU:HD22 | 3:AC:372:GLU:HB3  | 1.65        | 0.78     |
| 5:CE:621:ILE:HD12 | 7:CG:741:VAL:HG21 | 1.66        | 0.78     |
| 2:CB:220:LYS:HE3  | 2:CB:263:ASN:O    | 1.83        | 0.78     |
| 2:CI:212:HIS:ND1  | 2:CI:228:THR:HG21 | 1.99        | 0.78     |
| 2:BB:207:LEU:HD12 | 2:BB:236:MET:HE1  | 1.66        | 0.78     |
| 7:CN:705:HIS:CG   | 7:CN:706:PRO:HD3  | 2.18        | 0.78     |
| 7:AU:705:HIS:HB2  | 7:AU:706:PRO:HD3  | 1.64        | 0.78     |
| 5:BL:642:ARG:HE   | 5:BL:664:ILE:HG21 | 1.49        | 0.78     |
| 1:AH:115:TYR:CD2  | 1:AH:185:PRO:HG3  | 2.19        | 0.78     |
| 3:BQ:376:GLU:HB2  | 3:BQ:391:ASN:HB2  | 1.65        | 0.78     |
| 8:BV:809:G:C6     | 8:BV:810:A:N6     | 2.52        | 0.78     |
| 4:BK:9:VAL:CB     | 4:BK:80:ALA:CB    | 2.62        | 0.78     |
| 5:BS:686:LEU:CD2  | 7:BU:762:ILE:HG12 | 2.14        | 0.78     |
| 2:CP:284:GLU:CG   | 2:CP:285:PRO:HD3  | 2.14        | 0.78     |
| 3:BC:408:VAL:CG1  | 6:BF:562:VAL:HG13 | 2.14        | 0.78     |
| 2:DI:276:LEU:HB3  | 3:DJ:357:LYS:HE2  | 1.65        | 0.77     |
| 6:AF:567:ASN:O    | 8:AV:838:A:C6     | 2.37        | 0.77     |
| 1:BO:169:LEU:CD2  | 4:BR:80:ALA:HB1   | 2.12        | 0.77     |
| 4:BR:81:PRO:HB3   | 4:BR:84:LYS:HB3   | 1.64        | 0.77     |
| 5:BL:678:MET:SD   | 6:BM:511:LEU:CD2  | 2.71        | 0.77     |
| 3:DC:412:ASN:HB2  | 3:DC:413:PRO:CD   | 2.15        | 0.77     |
| 2:AB:269:ILE:HG22 | 2:AB:269:ILE:O    | 1.82        | 0.77     |
| 1:AO:181:THR:HG21 | 2:AP:255:LEU:HD13 | 1.66        | 0.77     |
| 6:BF:552:ASP:O    | 3:BQ:392:LYS:HA   | 1.84        | 0.77     |
| 4:CK:80:ALA:HB3   | 4:CK:81:PRO:HD3   | 1.66        | 0.77     |
| 2:DP:280:LEU:HD22 | 2:DP:286:LYS:CE   | 2.12        | 0.77     |
| 2:CB:293:GLU:OE2  | 3:CC:369:ASN:CG   | 2.23        | 0.77     |
| 3:BC:342:VAL:CG1  | 3:BC:409:VAL:HG13 | 2.15        | 0.77     |
| 2:BB:270:LEU:CD1  | 3:BC:398:LYS:HE2  | 2.13        | 0.77     |
| 8:CV:804:G:O5'    | 8:CV:804:G:H8     | 1.66        | 0.77     |
| 7:BN:762:ILE:HG21 | 7:BN:767:ILE:HD11 | 1.66        | 0.77     |
| 5:CL:635:LEU:HD12 | 5:CL:687:LEU:CD2  | 2.12        | 0.77     |
| 5:AE:684:ILE:HG23 | 5:AE:687:LEU:HD21 | 1.66        | 0.77     |
| 3:AC:347:ARG:O    | 6:AF:525:TRP:HZ2  | 1.67        | 0.77     |
| 6:DF:522:LYS:HD3  | 6:DF:571:TYR:CE2  | 2.19        | 0.77     |
| 2:AI:274:LEU:HD12 | 2:AI:275:PRO:CD   | 2.15        | 0.77     |
| 5:AE:613:VAL:HG23 | 5:AE:614:MET:HG3  | 1.66        | 0.77     |
| 6:DM:506:ASN:O    | 6:DM:509:PRO:HD2  | 1.84        | 0.77     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:CX:807:A:H2     | 8:CX:822:G:H22    | 1.30        | 0.77     |
| 2:CB:269:ILE:HD12 | 3:CC:396:ILE:HD13 | 1.65        | 0.77     |
| 1:DO:169:LEU:HD23 | 4:DR:73:LEU:CB    | 2.15        | 0.77     |
| 3:CC:377:VAL:CG1  | 3:CC:390:VAL:H    | 1.95        | 0.77     |
| 1:DH:182:VAL:CG2  | 2:DI:257:THR:HG21 | 2.15        | 0.77     |
| 4:BK:19:THR:HG23  | 4:BK:29:ARG:HG2   | 1.66        | 0.77     |
| 2:DI:245:MET:O    | 2:DI:252:PRO:HA   | 1.84        | 0.77     |
| 3:DC:407:ILE:HD11 | 6:DF:525:TRP:CZ2  | 2.18        | 0.77     |
| 5:BE:690:VAL:HG12 | 5:BE:690:VAL:O    | 1.82        | 0.77     |
| 3:BJ:407:ILE:HG12 | 6:BM:568:ASN:ND2  | 1.99        | 0.77     |
| 2:BP:209:LYS:HB3  | 2:BP:279:LEU:CD2  | 2.14        | 0.77     |
| 2:AB:212:HIS:ND1  | 2:BB:212:HIS:HB2  | 1.99        | 0.77     |
| 2:DB:249:ASN:HD21 | 8:DV:859:A:C4'    | 1.96        | 0.77     |
| 5:DE:674:LEU:HD12 | 5:DE:677:ILE:CD1  | 2.15        | 0.77     |
| 2:AI:274:LEU:HD12 | 2:AI:275:PRO:HD2  | 1.66        | 0.77     |
| 1:CO:136:LYS:HD2  | 8:CY:801:G:O2'    | 1.84        | 0.77     |
| 2:DI:276:LEU:HD13 | 3:DJ:357:LYS:HD2  | 1.67        | 0.77     |
| 8:AV:841:G:H2'    | 8:AV:842:U:H6     | 1.49        | 0.77     |
| 3:BC:387:SER:HB3  | 8:BY:866:U:H4'    | 1.65        | 0.77     |
| 2:BI:230:THR:HG21 | 2:BI:241:LYS:HG3  | 1.65        | 0.77     |
| 5:DE:639:VAL:O    | 5:DE:639:VAL:HG12 | 1.84        | 0.77     |
| 5:DL:683:ASN:HD22 | 6:DM:570:LEU:CD1  | 1.96        | 0.77     |
| 8:CY:837:G:O3'    | 8:CY:838:A:O4'    | 2.03        | 0.77     |
| 2:BP:234:VAL:HG21 | 8:BY:829:C:N4     | 1.99        | 0.77     |
| 5:CS:657:VAL:O    | 5:CS:658:LEU:HD23 | 1.84        | 0.77     |
| 7:DU:719:LEU:HD21 | 7:DU:740:LEU:CD1  | 2.14        | 0.77     |
| 2:AB:263:ASN:HB2  | 8:AV:835:U:O2'    | 1.85        | 0.77     |
| 1:DO:130:THR:CG2  | 1:DO:132:LYS:HE2  | 2.14        | 0.77     |
| 3:AJ:341:GLN:O    | 3:AJ:414:LEU:HD22 | 1.85        | 0.77     |
| 3:BJ:389:PRO:O    | 3:BJ:390:VAL:HG23 | 1.84        | 0.77     |
| 6:CM:547:THR:CG2  | 6:CM:562:VAL:CG2  | 2.59        | 0.77     |
| 2:CP:283:VAL:HG22 | 2:CP:287:VAL:CG2  | 2.15        | 0.77     |
| 5:AE:631:ILE:HD11 | 5:DE:628:ARG:NH1  | 2.00        | 0.77     |
| 1:AH:178:VAL:HG13 | 2:AI:264:ASN:ND2  | 1.99        | 0.77     |
| 2:CP:280:LEU:HD13 | 2:CP:286:LYS:HE2  | 1.67        | 0.77     |
| 4:AK:47:THR:HG23  | 4:AK:55:VAL:HG13  | 1.66        | 0.77     |
| 8:DX:867:G:H5'    | 8:DX:867:G:H8     | 1.50        | 0.77     |
| 7:CG:741:VAL:HG22 | 7:CG:761:VAL:HG22 | 1.66        | 0.77     |
| 3:BQ:328:PRO:HB2  | 6:BT:563:LEU:HD11 | 1.63        | 0.77     |
| 1:CA:179:SER:HA   | 2:CB:259:SER:O    | 1.85        | 0.77     |
| 1:AA:180:MET:O    | 2:AB:258:LEU:HD12 | 1.84        | 0.77     |
| 8:BX:847:A:O2'    | 8:BX:848:U:H5'    | 1.85        | 0.77     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:DJ:342:VAL:HG23 | 3:DJ:356:VAL:HG23 | 1.64        | 0.76     |
| 7:CU:705:HIS:HB2  | 7:CU:706:PRO:HD3  | 1.67        | 0.76     |
| 8:CY:838:A:P      | 8:CY:838:A:O4'    | 2.44        | 0.76     |
| 4:CK:9:VAL:HA     | 4:CK:80:ALA:CB    | 2.14        | 0.76     |
| 5:DE:624:TYR:CE2  | 7:DG:761:VAL:HG21 | 2.20        | 0.76     |
| 5:DL:674:LEU:HD12 | 5:DL:677:ILE:HD11 | 1.67        | 0.76     |
| 2:BP:205:ARG:CA   | 2:BP:208:MET:HE2  | 2.13        | 0.76     |
| 7:CN:767:ILE:HG21 | 7:CN:770:LEU:HD11 | 1.67        | 0.76     |
| 8:AX:813:G:C2     | 8:AX:815:A:OP1    | 2.39        | 0.76     |
| 7:AU:729:GLY:HA3  | 7:AU:742:ILE:HG21 | 1.66        | 0.76     |
| 2:AP:286:LYS:CD   | 3:AQ:357:LYS:NZ   | 2.47        | 0.76     |
| 6:DT:558:HIS:C    | 6:DT:559:LEU:HD12 | 2.06        | 0.76     |
| 2:AB:236:MET:HE2  | 2:AB:236:MET:HA   | 1.68        | 0.76     |
| 5:DL:621:ILE:CD1  | 7:DN:741:VAL:HG23 | 2.14        | 0.76     |
| 3:DQ:352:LEU:HD12 | 3:DQ:401:LEU:HD22 | 1.67        | 0.76     |
| 3:BQ:378:PRO:HB3  | 3:BQ:388:LYS:HA   | 1.67        | 0.76     |
| 7:AN:709:LEU:CD1  | 7:AN:713:MET:HB2  | 2.14        | 0.76     |
| 3:DJ:409:VAL:HG21 | 6:DM:563:LEU:HD23 | 1.67        | 0.76     |
| 5:BL:655:ASN:ND2  | 8:BX:831:A:C2     | 2.53        | 0.76     |
| 2:AB:203:LEU:CD2  | 3:AC:400:PHE:HZ   | 1.88        | 0.76     |
| 8:AV:857:U:O2'    | 8:CX:815:A:C1'    | 2.33        | 0.76     |
| 3:DQ:326:THR:HG21 | 3:DQ:329:LEU:HD12 | 1.67        | 0.76     |
| 3:AC:346:CYS:O    | 6:AF:525:TRP:CH2  | 2.38        | 0.76     |
| 2:CB:237:ASN:ND2  | 8:CV:835:U:H3     | 1.83        | 0.76     |
| 2:CI:212:HIS:ND1  | 2:CI:228:THR:CG2  | 2.48        | 0.76     |
| 5:CL:621:ILE:HD12 | 7:CN:741:VAL:HG23 | 1.62        | 0.76     |
| 2:AP:210:LEU:HD13 | 2:AP:274:LEU:HD13 | 0.77        | 0.76     |
| 6:AF:547:THR:HG21 | 6:AF:562:VAL:HB   | 1.65        | 0.76     |
| 2:CB:261:ARG:NH1  | 2:CB:263:ASN:HB3  | 1.99        | 0.76     |
| 5:DE:618:ILE:HG21 | 7:DG:709:LEU:CD2  | 2.15        | 0.76     |
| 2:DI:207:LEU:HD12 | 2:DI:236:MET:SD   | 2.26        | 0.76     |
| 7:AN:709:LEU:HD12 | 7:AN:713:MET:HB2  | 1.68        | 0.76     |
| 1:DA:159:ALA:HB2  | 8:DV:848:U:O2'    | 1.85        | 0.76     |
| 3:BJ:394:ARG:NH2  | 3:BJ:396:ILE:HD11 | 2.01        | 0.76     |
| 5:DL:618:ILE:HG23 | 5:DL:619:ASN:OD1  | 1.86        | 0.76     |
| 2:DP:210:LEU:CD2  | 2:DP:279:LEU:HD11 | 2.15        | 0.76     |
| 3:BJ:344:ILE:HD13 | 3:BJ:365:MET:HE3  | 1.66        | 0.76     |
| 2:BP:204:VAL:O    | 2:BP:208:MET:HE1  | 1.84        | 0.76     |
| 5:AS:691:SER:HB3  | 7:AU:757:ILE:HG23 | 1.65        | 0.76     |
| 4:AR:48:VAL:HG12  | 4:AR:56:ALA:O     | 1.85        | 0.76     |
| 2:DP:210:LEU:HD21 | 2:DP:279:LEU:HD11 | 1.67        | 0.76     |
| 2:DP:286:LYS:O    | 3:DQ:357:LYS:NZ   | 2.19        | 0.76     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:BF:539:TYR:CD1  | 8:BV:837:G:C6     | 2.73        | 0.76     |
| 2:CB:286:LYS:HE3  | 3:CC:336:VAL:HG12 | 1.66        | 0.76     |
| 2:CB:223:THR:CG2  | 2:CB:247:LEU:HD23 | 2.15        | 0.76     |
| 6:BF:552:ASP:O    | 3:BQ:392:LYS:HG2  | 1.86        | 0.76     |
| 3:BC:415:ILE:HG22 | 3:BC:415:ILE:O    | 1.84        | 0.76     |
| 2:AP:210:LEU:HD11 | 2:AP:274:LEU:HD13 | 1.65        | 0.76     |
| 4:CR:64:ARG:NH1   | 7:CU:738:MET:HG3  | 2.01        | 0.76     |
| 3:CC:357:LYS:HB3  | 3:CC:366:VAL:O    | 1.86        | 0.76     |
| 2:AB:238:THR:HG22 | 2:AB:240:LEU:HD21 | 1.66        | 0.76     |
| 2:BB:282:ASP:OD1  | 2:BB:283:VAL:HG13 | 1.86        | 0.76     |
| 3:AC:316:LEU:HD11 | 3:AC:337:LYS:HE3  | 1.67        | 0.76     |
| 4:AR:15:GLY:N     | 4:AR:32:LEU:O     | 2.19        | 0.76     |
| 5:DS:691:SER:OG   | 7:DU:757:ILE:HD12 | 1.85        | 0.76     |
| 7:BN:729:GLY:HA3  | 7:BN:742:ILE:CG2  | 2.16        | 0.76     |
| 2:AI:276:LEU:HD22 | 2:AI:290:LYS:HA   | 1.68        | 0.76     |
| 1:DA:181:THR:HG23 | 2:DB:257:THR:O    | 1.86        | 0.76     |
| 6:BF:506:ASN:HB2  | 6:BF:507:PRO:HD3  | 1.67        | 0.76     |
| 1:AO:179:SER:HA   | 2:AP:259:SER:O    | 1.86        | 0.76     |
| 4:AD:20:CYS:SG    | 4:AD:71:LEU:HD21  | 2.26        | 0.76     |
| 3:AQ:362:HIS:ND1  | 8:AY:836:U:H2'    | 2.01        | 0.76     |
| 1:AA:114:ASP:OD2  | 4:AD:87:LYS:HE2   | 1.85        | 0.76     |
| 6:DF:547:THR:HG21 | 6:DF:562:VAL:HG21 | 1.64        | 0.76     |
| 3:CJ:357:LYS:NZ   | 3:CJ:368:GLU:OE2  | 2.16        | 0.76     |
| 6:CF:519:VAL:HG21 | 6:CF:572:ILE:CD1  | 2.10        | 0.76     |
| 3:AC:361:ARG:HG2  | 8:AV:830:A:C5'    | 2.11        | 0.76     |
| 7:CU:740:LEU:HD11 | 7:CU:770:LEU:HD21 | 1.67        | 0.76     |
| 4:DD:27:VAL:HG11  | 4:DD:29:ARG:NH2   | 1.99        | 0.76     |
| 3:CQ:330:SER:O    | 3:CQ:334:GLN:HB2  | 1.85        | 0.76     |
| 5:DE:685:THR:HG22 | 5:DE:686:LEU:HG   | 1.67        | 0.76     |
| 1:BA:137:HIS:NE2  | 8:BV:834:U:H3'    | 2.00        | 0.76     |
| 5:BE:688:GLN:NE2  | 7:BG:757:ILE:HB   | 2.01        | 0.75     |
| 3:DC:351:LYS:O    | 3:DC:352:LEU:HD23 | 1.85        | 0.75     |
| 1:BH:140:LEU:HD11 | 1:BH:180:MET:SD   | 2.25        | 0.75     |
| 8:CV:814:A:H2'    | 8:CV:815:A:C8     | 2.20        | 0.75     |
| 1:BH:143:CYS:SG   | 4:BK:84:LYS:HG2   | 2.26        | 0.75     |
| 2:AI:280:LEU:HD22 | 2:AI:286:LYS:HG2  | 1.67        | 0.75     |
| 5:BS:640:ASN:O    | 5:BS:666:SER:HB3  | 1.85        | 0.75     |
| 3:AQ:376:GLU:HB3  | 3:AQ:390:VAL:HA   | 1.66        | 0.75     |
| 8:DV:829:C:H1'    | 8:DV:830:A:OP2    | 1.87        | 0.75     |
| 5:CL:630:ARG:O    | 5:CL:631:ILE:HD13 | 1.87        | 0.75     |
| 3:AC:342:VAL:CG2  | 3:AC:409:VAL:HG13 | 2.17        | 0.75     |
| 3:BQ:332:LEU:CD1  | 3:BQ:409:VAL:HG11 | 2.16        | 0.75     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:CA:137:HIS:NE2  | 8:CV:834:U:H3'    | 2.01        | 0.75     |
| 5:CE:686:LEU:HD11 | 7:CG:721:LEU:CD2  | 2.17        | 0.75     |
| 8:CY:811:C:H2'    | 8:CY:812:U:O4'    | 1.86        | 0.75     |
| 1:AH:108:LYS:O    | 1:AH:111:GLN:HG2  | 1.86        | 0.75     |
| 5:AL:657:VAL:C    | 5:AL:658:LEU:HD23 | 2.07        | 0.75     |
| 6:DM:539:TYR:CD2  | 6:DM:566:CYS:HB3  | 2.21        | 0.75     |
| 2:CP:207:LEU:HD12 | 2:CP:236:MET:SD   | 2.23        | 0.75     |
| 2:DI:287:VAL:HA   | 2:DI:290:LYS:CE   | 2.15        | 0.75     |
| 3:DQ:396:ILE:HB   | 3:DQ:399:MET:CE   | 2.15        | 0.75     |
| 2:AB:283:VAL:HG13 | 2:AB:286:LYS:CB   | 2.16        | 0.75     |
| 3:CC:370:VAL:HG11 | 3:CC:399:MET:SD   | 2.26        | 0.75     |
| 3:CQ:353:LEU:HD12 | 3:CQ:354:GLY:N    | 2.01        | 0.75     |
| 7:BN:712:PHE:HB3  | 7:BN:717:LEU:HD21 | 1.68        | 0.75     |
| 2:AB:271:PRO:HD2  | 2:AB:274:LEU:HD11 | 1.68        | 0.75     |
| 3:CQ:374:TRP:HE1  | 3:CQ:391:ASN:ND2  | 1.83        | 0.75     |
| 3:DQ:357:LYS:HB3  | 3:DQ:366:VAL:O    | 1.86        | 0.75     |
| 1:BH:118:ARG:NH1  | 1:BH:128:ILE:CD1  | 2.47        | 0.75     |
| 3:BQ:409:VAL:O    | 3:BQ:410:LEU:HD23 | 1.87        | 0.75     |
| 2:AI:229:ILE:HA   | 2:AI:240:LEU:HD22 | 1.68        | 0.75     |
| 1:CH:173:ARG:HD2  | 4:CK:68:ILE:O     | 1.86        | 0.75     |
| 7:AU:719:LEU:HD21 | 7:AU:740:LEU:CD1  | 2.15        | 0.75     |
| 8:BX:805:U:H3'    | 8:BX:806:G:H5''   | 1.66        | 0.75     |
| 4:CK:14:GLU:HA    | 4:CK:32:LEU:O     | 1.86        | 0.75     |
| 4:DR:12:GLU:O     | 4:DR:16:HIS:CE1   | 2.39        | 0.75     |
| 6:AM:539:TYR:CD1  | 6:AM:566:CYS:HB3  | 2.22        | 0.75     |
| 7:DN:758:GLY:HA3  | 5:DS:630:ARG:HE   | 1.50        | 0.75     |
| 1:CA:140:LEU:HD11 | 1:CA:180:MET:SD   | 2.27        | 0.75     |
| 2:BB:229:ILE:HA   | 2:BB:240:LEU:HD22 | 1.68        | 0.75     |
| 3:AJ:347:ARG:O    | 6:AM:525:TRP:CH2  | 2.40        | 0.75     |
| 3:CQ:376:GLU:HB2  | 3:CQ:391:ASN:HB2  | 1.66        | 0.75     |
| 5:AL:621:ILE:CD1  | 7:AN:741:VAL:CG2  | 2.64        | 0.75     |
| 3:DQ:342:VAL:HG11 | 3:DQ:409:VAL:CG1  | 2.16        | 0.75     |
| 2:BB:249:ASN:HD21 | 8:BV:859:A:H4'    | 1.50        | 0.75     |
| 4:DR:46:ILE:HD13  | 4:DR:61:VAL:HG22  | 1.69        | 0.75     |
| 8:DX:839:C:H2'    | 8:DX:840:A:H5'    | 1.67        | 0.75     |
| 2:DP:276:LEU:HB2  | 2:DP:290:LYS:HB3  | 1.67        | 0.75     |
| 7:DU:709:LEU:HD11 | 7:DU:734:PHE:CE2  | 2.21        | 0.75     |
| 3:BQ:336:VAL:HG22 | 3:BQ:356:VAL:CB   | 2.17        | 0.75     |
| 5:DS:674:LEU:CD1  | 5:DS:677:ILE:HD11 | 2.15        | 0.75     |
| 7:CN:740:LEU:HD21 | 7:CN:770:LEU:HD21 | 1.69        | 0.75     |
| 5:AE:639:VAL:CG1  | 5:AE:639:VAL:O    | 2.34        | 0.75     |
| 3:CJ:327:GLY:O    | 3:CJ:330:SER:N    | 2.20        | 0.75     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:CD:8:LYS:O      | 4:CD:12:GLU:HG2   | 1.86        | 0.75     |
| 5:CL:690:VAL:HG12 | 5:CL:690:VAL:O    | 1.86        | 0.75     |
| 3:AC:343:LEU:HB3  | 3:AC:410:LEU:HB2  | 1.69        | 0.75     |
| 5:BS:677:ILE:HA   | 6:BT:572:ILE:O    | 1.87        | 0.75     |
| 5:DS:657:VAL:HG22 | 5:DS:678:MET:HG3  | 1.68        | 0.75     |
| 2:DB:276:LEU:HD13 | 3:DC:357:LYS:HG3  | 1.69        | 0.75     |
| 1:CA:181:THR:HG23 | 2:CB:258:LEU:HD12 | 1.67        | 0.75     |
| 5:DS:690:VAL:O    | 5:DS:690:VAL:HG12 | 1.86        | 0.75     |
| 1:AH:118:ARG:O    | 1:AH:180:MET:HA   | 1.87        | 0.75     |
| 3:AQ:365:MET:CE   | 3:AQ:367:LEU:HD21 | 2.17        | 0.74     |
| 8:DX:839:C:O5'    | 8:DX:839:C:H6     | 1.68        | 0.74     |
| 6:AT:519:VAL:HG11 | 6:AT:572:ILE:HD11 | 1.69        | 0.74     |
| 6:AT:547:THR:HG21 | 6:AT:562:VAL:HG23 | 1.64        | 0.74     |
| 8:BV:838:A:H2'    | 8:BV:839:C:O4'    | 1.86        | 0.74     |
| 2:BB:203:LEU:O    | 2:BB:206:PHE:HB3  | 1.86        | 0.74     |
| 7:AN:705:HIS:CD2  | 7:AN:706:PRO:HD3  | 2.22        | 0.74     |
| 5:DE:683:ASN:HD22 | 6:DF:570:LEU:HD22 | 1.52        | 0.74     |
| 3:DQ:407:ILE:HG22 | 3:DQ:408:VAL:HG23 | 1.68        | 0.74     |
| 3:BQ:408:VAL:HG11 | 3:BQ:410:LEU:HD21 | 1.68        | 0.74     |
| 1:BH:178:VAL:HB   | 2:BI:264:ASN:HD21 | 1.48        | 0.74     |
| 3:AC:407:ILE:HD13 | 6:AF:568:ASN:OD1  | 1.87        | 0.74     |
| 1:CA:130:THR:HG21 | 1:CA:132:LYS:HE2  | 1.69        | 0.74     |
| 2:DB:261:ARG:NH1  | 2:DB:263:ASN:HB3  | 2.00        | 0.74     |
| 2:BI:212:HIS:CD2  | 2:BI:228:THR:HG21 | 2.21        | 0.74     |
| 3:AC:342:VAL:HG21 | 3:AC:409:VAL:HG13 | 1.69        | 0.74     |
| 3:BQ:328:PRO:O    | 3:BQ:331:VAL:HG22 | 1.87        | 0.74     |
| 4:CD:24:THR:O     | 4:CD:51:ARG:NH1   | 2.20        | 0.74     |
| 4:AD:83:LEU:HD23  | 4:AD:86:MET:HE3   | 1.70        | 0.74     |
| 1:BH:167:LEU:HD22 | 4:BK:72:ILE:HD11  | 1.68        | 0.74     |
| 4:DK:26:GLU:OE1   | 7:DN:769:MET:HE3  | 1.87        | 0.74     |
| 3:DC:410:LEU:CD1  | 6:DF:559:LEU:HD13 | 2.09        | 0.74     |
| 4:BK:9:VAL:HA     | 4:BK:80:ALA:CB    | 2.14        | 0.74     |
| 4:DR:81:PRO:O     | 4:DR:85:SER:CB    | 2.34        | 0.74     |
| 2:DB:276:LEU:HD11 | 3:DC:398:LYS:HZ1  | 1.47        | 0.74     |
| 2:BB:286:LYS:HE2  | 3:BC:357:LYS:O    | 1.87        | 0.74     |
| 8:BX:853:A:C6     | 8:BX:854:A:N1     | 2.56        | 0.74     |
| 4:DR:27:VAL:O     | 4:DR:48:VAL:HA    | 1.88        | 0.74     |
| 5:AS:685:THR:HG22 | 5:AS:686:LEU:HG   | 1.67        | 0.74     |
| 5:DE:630:ARG:O    | 5:DE:631:ILE:HD13 | 1.87        | 0.74     |
| 1:DO:108:LYS:O    | 1:DO:112:HIS:ND1  | 2.21        | 0.74     |
| 2:DI:229:ILE:HA   | 2:DI:240:LEU:CD2  | 2.17        | 0.74     |
| 5:BE:624:TYR:CE1  | 7:BG:761:VAL:HG21 | 2.22        | 0.74     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:CY:839:C:O2'    | 8:CY:840:A:H5'    | 1.86        | 0.74     |
| 5:DE:688:GLN:CG   | 7:DG:760:VAL:HG23 | 2.17        | 0.74     |
| 6:CF:550:TYR:HB3  | 6:CF:555:LEU:HB3  | 1.70        | 0.74     |
| 1:AA:148:PHE:CZ   | 1:AA:150:LYS:O    | 2.41        | 0.74     |
| 1:DH:182:VAL:CG2  | 2:DI:257:THR:CG2  | 2.64        | 0.74     |
| 1:CA:181:THR:CG2  | 2:CB:258:LEU:HD13 | 2.17        | 0.74     |
| 3:DC:324:PHE:CZ   | 3:DC:329:LEU:HD13 | 2.22        | 0.74     |
| 3:DJ:407:ILE:CD1  | 6:DM:525:TRP:CH2  | 2.70        | 0.74     |
| 6:DM:539:TYR:CE2  | 8:DX:837:G:C2     | 2.75        | 0.74     |
| 5:DL:635:LEU:HD22 | 5:DL:679:LEU:CD1  | 2.17        | 0.74     |
| 5:BS:684:ILE:HG21 | 5:BS:687:LEU:CD2  | 2.17        | 0.74     |
| 1:DA:192:ILE:O    | 1:DA:195:VAL:HG12 | 1.88        | 0.74     |
| 3:CC:352:LEU:HD23 | 3:CC:372:GLU:HB3  | 1.70        | 0.74     |
| 1:AO:130:THR:HB   | 1:AO:143:CYS:HB2  | 1.69        | 0.74     |
| 5:DE:621:ILE:HD11 | 7:DG:741:VAL:HG23 | 1.68        | 0.74     |
| 5:AE:684:ILE:CG2  | 5:AE:687:LEU:HD21 | 2.17        | 0.74     |
| 2:CB:263:ASN:HB2  | 8:CV:835:U:O2'    | 1.87        | 0.74     |
| 2:AB:275:PRO:O    | 2:AB:276:LEU:HD23 | 1.88        | 0.74     |
| 5:DE:618:ILE:CG2  | 7:DG:709:LEU:CD2  | 2.66        | 0.74     |
| 3:AC:357:LYS:HD3  | 3:AC:366:VAL:HG11 | 1.69        | 0.74     |
| 5:BE:674:LEU:HD12 | 5:BE:677:ILE:HD11 | 1.68        | 0.74     |
| 2:BP:227:GLY:HA3  | 2:BP:243:VAL:HG22 | 1.69        | 0.74     |
| 7:BN:718:SER:OG   | 7:BN:726:HIS:NE2  | 2.20        | 0.74     |
| 2:AP:280:LEU:HD22 | 2:AP:286:LYS:HE3  | 1.69        | 0.74     |
| 4:AR:46:ILE:HG13  | 4:AR:58:LEU:O     | 1.86        | 0.74     |
| 7:DN:758:GLY:HA2  | 5:DS:630:ARG:NE   | 2.03        | 0.74     |
| 3:BC:412:ASN:HD21 | 6:BF:559:LEU:CD2  | 2.01        | 0.74     |
| 3:AC:316:LEU:CD1  | 3:AC:337:LYS:NZ   | 2.50        | 0.74     |
| 3:AQ:407:ILE:CD1  | 6:AT:525:TRP:CZ3  | 2.71        | 0.74     |
| 5:CL:655:ASN:ND2  | 8:CX:831:A:C2     | 2.56        | 0.74     |
| 5:DL:674:LEU:HD13 | 6:DM:573:ARG:CD   | 2.17        | 0.74     |
| 4:DK:19:THR:CB    | 4:DK:72:ILE:HD12  | 2.17        | 0.74     |
| 3:DC:412:ASN:CB   | 3:DC:413:PRO:CD   | 2.66        | 0.74     |
| 8:DX:866:U:C2'    | 8:DX:867:G:H5''   | 2.18        | 0.74     |
| 6:DT:510:PHE:O    | 6:DT:514:LEU:HG   | 1.88        | 0.74     |
| 5:DS:618:ILE:HG22 | 7:DU:709:LEU:HD23 | 1.70        | 0.73     |
| 3:BJ:347:ARG:HG3  | 6:BM:525:TRP:CH2  | 2.23        | 0.73     |
| 2:DB:208:MET:HA   | 2:DB:232:VAL:HB   | 1.68        | 0.73     |
| 3:AJ:329:LEU:HD11 | 3:AJ:361:ARG:HA   | 1.69        | 0.73     |
| 7:CG:737:PHE:HE1  | 8:CV:833:U:H5''   | 1.53        | 0.73     |
| 2:BB:250:ARG:NH2  | 8:BV:860:G:OP2    | 2.21        | 0.73     |
| 5:BE:642:ARG:HH22 | 5:BE:668:THR:HA   | 1.53        | 0.73     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:BK:28:TYR:CZ    | 7:BN:769:MET:HE1  | 2.23        | 0.73     |
| 6:CM:506:ASN:HB2  | 6:CM:507:PRO:HD3  | 1.70        | 0.73     |
| 3:DQ:410:LEU:CD2  | 6:DT:562:VAL:HG22 | 2.15        | 0.73     |
| 2:CI:207:LEU:HD23 | 2:CI:210:LEU:HD12 | 1.69        | 0.73     |
| 6:BF:547:THR:CG2  | 6:BF:562:VAL:CG2  | 2.66        | 0.73     |
| 5:CS:634:TRP:HZ2  | 5:CS:642:ARG:CD   | 2.00        | 0.73     |
| 7:DN:742:ILE:CG2  | 7:DN:745:CYS:HB3  | 2.17        | 0.73     |
| 2:DP:213:GLU:O    | 2:DP:228:THR:HG23 | 1.87        | 0.73     |
| 3:CC:353:LEU:HD23 | 3:CC:371:LYS:HZ1  | 0.92        | 0.73     |
| 4:BK:63:ILE:HD11  | 7:BN:769:MET:HE1  | 1.69        | 0.73     |
| 7:BN:769:MET:C    | 7:BN:770:LEU:HD12 | 2.08        | 0.73     |
| 1:DH:178:VAL:HA   | 2:DI:264:ASN:HD22 | 1.52        | 0.73     |
| 5:AE:635:LEU:CD1  | 5:AE:687:LEU:CD2  | 2.65        | 0.73     |
| 2:BB:249:ASN:HD21 | 8:BV:859:A:C4'    | 2.02        | 0.73     |
| 7:DN:769:MET:O    | 7:DN:770:LEU:HD12 | 1.89        | 0.73     |
| 3:BJ:412:ASN:HB3  | 3:BJ:413:PRO:HD3  | 1.68        | 0.73     |
| 2:DB:292:ARG:O    | 2:DB:295:VAL:O    | 2.07        | 0.73     |
| 3:BC:326:THR:O    | 3:BC:330:SER:HB2  | 1.88        | 0.73     |
| 2:BP:276:LEU:CD1  | 2:BP:290:LYS:HA   | 2.15        | 0.73     |
| 6:BM:566:CYS:O    | 6:BM:566:CYS:SG   | 2.47        | 0.73     |
| 5:DE:688:GLN:NE2  | 7:DG:747:GLU:OE2  | 2.17        | 0.73     |
| 2:AI:280:LEU:HD13 | 2:AI:286:LYS:CB   | 2.19        | 0.73     |
| 2:DP:209:LYS:HB2  | 2:DP:279:LEU:HD22 | 1.68        | 0.73     |
| 3:DJ:352:LEU:CD1  | 3:DJ:401:LEU:HD21 | 2.16        | 0.73     |
| 3:DJ:409:VAL:HB   | 6:DM:563:LEU:HB3  | 1.71        | 0.73     |
| 2:DI:280:LEU:HD22 | 2:DI:286:LYS:CE   | 2.12        | 0.73     |
| 5:BL:621:ILE:HD12 | 7:BN:739:ASN:CB   | 2.19        | 0.73     |
| 5:CL:635:LEU:HD22 | 5:CL:679:LEU:HD13 | 1.71        | 0.73     |
| 1:DA:140:LEU:CD1  | 1:DA:180:MET:CE   | 2.65        | 0.73     |
| 5:DS:677:ILE:HG22 | 5:DS:679:LEU:HD23 | 1.70        | 0.73     |
| 8:BX:854:A:H8     | 8:BX:854:A:O5'    | 1.71        | 0.73     |
| 3:DQ:388:LYS:N    | 3:DQ:389:PRO:HD2  | 2.04        | 0.73     |
| 5:AS:679:LEU:HD23 | 6:AT:571:TYR:HB3  | 1.71        | 0.73     |
| 4:AK:68:ILE:HD13  | 4:AK:71:LEU:HD11  | 1.70        | 0.73     |
| 5:DL:635:LEU:CD2  | 5:DL:679:LEU:HD13 | 2.18        | 0.73     |
| 6:BM:547:THR:HG21 | 6:BM:562:VAL:HB   | 1.69        | 0.73     |
| 3:BJ:347:ARG:NH1  | 8:BX:840:A:H5'    | 2.03        | 0.73     |
| 3:BQ:409:VAL:C    | 3:BQ:410:LEU:HD23 | 2.09        | 0.73     |
| 3:BQ:410:LEU:HD22 | 6:BT:562:VAL:HG13 | 1.69        | 0.73     |
| 3:AJ:333:THR:N    | 3:AJ:359:PHE:CZ   | 2.56        | 0.73     |
| 8:DY:830:A:H62    | 8:DY:836:U:H5'    | 1.53        | 0.73     |
| 2:DP:232:VAL:HG13 | 2:DP:237:ASN:O    | 1.88        | 0.73     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:CH:108:LYS:O    | 1:CH:112:HIS:ND1  | 2.21        | 0.73     |
| 5:DS:621:ILE:HD11 | 7:DU:761:VAL:HG13 | 1.71        | 0.73     |
| 3:AQ:329:LEU:O    | 3:AQ:333:THR:HG23 | 1.89        | 0.73     |
| 1:CO:137:HIS:NE2  | 8:CY:834:U:C3'    | 2.51        | 0.73     |
| 6:BT:524:LYS:N    | 6:BT:570:LEU:HG   | 2.04        | 0.73     |
| 2:CB:293:GLU:OE2  | 3:CC:369:ASN:OD1  | 2.05        | 0.73     |
| 8:DX:853:A:H2'    | 8:DX:854:A:C8     | 2.24        | 0.73     |
| 6:BF:506:ASN:CB   | 6:BF:507:PRO:HD3  | 2.18        | 0.73     |
| 2:BI:262:GLY:HA2  | 2:BI:265:ILE:HD12 | 1.70        | 0.73     |
| 1:AO:118:ARG:HB3  | 1:AO:181:THR:HG23 | 1.69        | 0.73     |
| 8:AX:814:A:O2'    | 8:AX:815:A:H5'    | 1.88        | 0.73     |
| 3:BJ:390:VAL:HG12 | 3:BJ:391:ASN:N    | 2.04        | 0.73     |
| 6:AM:506:ASN:O    | 6:AM:509:PRO:HD2  | 1.89        | 0.73     |
| 4:AR:67:LYS:HE2   | 7:AU:767:ILE:O    | 1.88        | 0.73     |
| 1:CO:140:LEU:CD1  | 1:CO:180:MET:HE1  | 2.19        | 0.73     |
| 2:CI:276:LEU:HD12 | 2:CI:290:LYS:CB   | 2.19        | 0.73     |
| 2:CI:276:LEU:HD12 | 2:CI:290:LYS:HB2  | 1.69        | 0.73     |
| 5:AS:674:LEU:CD1  | 6:AT:573:ARG:HH11 | 1.75        | 0.73     |
| 2:DB:220:LYS:HB2  | 3:DC:347:ARG:NH1  | 2.04        | 0.73     |
| 5:BL:678:MET:CE   | 6:BM:511:LEU:CD2  | 2.66        | 0.73     |
| 3:AJ:342:VAL:HG23 | 3:AJ:356:VAL:HG23 | 1.71        | 0.73     |
| 3:AC:370:VAL:HB   | 3:AC:399:MET:CE   | 2.19        | 0.73     |
| 1:AO:151:ILE:HB   | 1:AO:161:ARG:O    | 1.88        | 0.73     |
| 4:AD:19:THR:HG23  | 4:AD:29:ARG:HG2   | 1.71        | 0.73     |
| 6:CF:504:PRO:O    | 6:CF:505:LEU:HD23 | 1.87        | 0.73     |
| 3:CC:347:ARG:NE   | 8:CV:839:C:O2'    | 2.21        | 0.73     |
| 2:AI:229:ILE:HA   | 2:AI:240:LEU:HD23 | 1.70        | 0.73     |
| 5:BE:680:LYS:NZ   | 6:BF:566:CYS:SG   | 2.60        | 0.73     |
| 3:DQ:342:VAL:CG1  | 3:DQ:409:VAL:CG1  | 2.67        | 0.73     |
| 1:CA:151:ILE:O    | 1:CA:151:ILE:HG22 | 1.87        | 0.73     |
| 3:BJ:361:ARG:HG2  | 8:BX:830:A:H5'    | 1.68        | 0.73     |
| 6:AM:524:LYS:HA   | 6:AM:570:LEU:HD11 | 1.71        | 0.73     |
| 3:BJ:386:LYS:HG2  | 3:BJ:387:SER:H    | 1.52        | 0.73     |
| 3:DC:410:LEU:CD1  | 6:DF:559:LEU:CD1  | 2.66        | 0.72     |
| 2:AP:276:LEU:HD12 | 2:AP:290:LYS:HA   | 1.70        | 0.72     |
| 1:AH:179:SER:OG   | 2:AI:258:LEU:HD11 | 1.87        | 0.72     |
| 3:AC:345:ASN:HD21 | 3:AC:410:LEU:HD11 | 1.54        | 0.72     |
| 2:AB:207:LEU:HD23 | 2:AB:210:LEU:CD1  | 2.19        | 0.72     |
| 8:AY:809:G:O6     | 8:AY:810:A:N6     | 2.22        | 0.72     |
| 3:CC:341:GLN:HB2  | 3:CC:355:ARG:NH1  | 2.04        | 0.72     |
| 4:BK:55:VAL:HG12  | 4:BK:57:GLN:HE21  | 1.53        | 0.72     |
| 1:BA:118:ARG:HB3  | 1:BA:181:THR:HG22 | 1.70        | 0.72     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BQ:358:ALA:HB3  | 3:BQ:366:VAL:CG2  | 2.19        | 0.72     |
| 2:AI:206:PHE:CE1  | 2:AI:210:LEU:HD21 | 2.24        | 0.72     |
| 2:BB:229:ILE:HA   | 2:BB:240:LEU:CD2  | 2.19        | 0.72     |
| 2:BP:219:LEU:HD12 | 2:BP:223:THR:HB   | 1.71        | 0.72     |
| 2:AI:246:THR:OG1  | 2:AI:252:PRO:HB3  | 1.89        | 0.72     |
| 2:CP:226:HIS:O    | 2:CP:243:VAL:HG13 | 1.89        | 0.72     |
| 1:CO:182:VAL:CB   | 2:CP:257:THR:CG2  | 2.66        | 0.72     |
| 6:DF:527:MET:HG2  | 6:DF:551:ILE:CD1  | 2.19        | 0.72     |
| 5:DE:621:ILE:CD1  | 7:DG:741:VAL:HG23 | 2.20        | 0.72     |
| 2:DB:236:MET:HG2  | 3:DC:402:ARG:HH12 | 1.53        | 0.72     |
| 2:BI:279:LEU:HD12 | 2:BI:279:LEU:O    | 1.89        | 0.72     |
| 2:CI:295:VAL:O    | 2:CI:295:VAL:HG12 | 1.89        | 0.72     |
| 3:CJ:408:VAL:HG22 | 6:CM:564:ILE:HG12 | 1.70        | 0.72     |
| 6:BM:524:LYS:HD3  | 8:BX:838:A:C2     | 2.25        | 0.72     |
| 5:CS:635:LEU:HD22 | 5:CS:679:LEU:HD13 | 1.70        | 0.72     |
| 5:CS:634:TRP:CZ2  | 5:CS:642:ARG:CD   | 2.72        | 0.72     |
| 8:AY:839:C:H5"    | 8:AY:839:C:C6     | 2.21        | 0.72     |
| 8:BV:858:A:H5"    | 8:BV:859:A:OP2    | 1.89        | 0.72     |
| 2:AI:219:LEU:HD13 | 2:AI:264:ASN:HD21 | 1.54        | 0.72     |
| 4:DR:50:TYR:CE1   | 4:DR:54:ARG:HD2   | 2.24        | 0.72     |
| 1:CO:182:VAL:HB   | 2:CP:257:THR:CG2  | 2.19        | 0.72     |
| 7:BG:741:VAL:HG12 | 7:BG:759:MET:SD   | 2.30        | 0.72     |
| 3:BJ:347:ARG:HG3  | 6:BM:525:TRP:HH2  | 1.52        | 0.72     |
| 2:CB:269:ILE:CD1  | 3:CC:396:ILE:CD1  | 2.67        | 0.72     |
| 5:CS:657:VAL:C    | 5:CS:658:LEU:HD23 | 2.09        | 0.72     |
| 2:AP:276:LEU:HD12 | 2:AP:290:LYS:HB2  | 1.71        | 0.72     |
| 2:DI:203:LEU:HD11 | 3:DJ:358:ALA:HB1  | 1.71        | 0.72     |
| 2:CI:276:LEU:CD1  | 3:CJ:357:LYS:HE3  | 2.03        | 0.72     |
| 2:DP:270:LEU:HD22 | 2:DP:271:PRO:HD2  | 1.72        | 0.72     |
| 1:BA:180:MET:O    | 2:BB:258:LEU:HA   | 1.90        | 0.72     |
| 5:BL:688:GLN:OE1  | 7:BN:757:ILE:CG2  | 2.36        | 0.72     |
| 6:CF:524:LYS:HG2  | 8:CV:838:A:N6     | 2.05        | 0.72     |
| 3:BC:347:ARG:O    | 6:BF:525:TRP:HZ2  | 1.73        | 0.72     |
| 1:AA:178:VAL:HG22 | 2:AB:264:ASN:HD21 | 1.53        | 0.72     |
| 1:DH:150:LYS:HG3  | 1:DH:163:GLU:O    | 1.89        | 0.72     |
| 8:DX:805:U:H3'    | 8:DX:806:G:H5"    | 1.70        | 0.72     |
| 6:AF:520:MET:CE   | 6:AF:575:VAL:HG12 | 2.19        | 0.72     |
| 8:DX:856:C:H6     | 8:DX:856:C:O5'    | 1.72        | 0.72     |
| 1:BA:107:SER:O    | 1:BA:111:GLN:HG2  | 1.90        | 0.72     |
| 3:DJ:332:LEU:CD1  | 3:DJ:359:PHE:CD2  | 2.66        | 0.72     |
| 1:CO:138:MET:HG2  | 8:CY:835:U:C5     | 2.25        | 0.72     |
| 7:BN:719:LEU:CD2  | 7:BN:762:ILE:HD12 | 2.20        | 0.72     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:DA:120:ILE:HG23 | 1:DA:126:ILE:HD13 | 1.70        | 0.72     |
| 8:BV:836:U:H6     | 8:BV:836:U:H5'    | 1.53        | 0.72     |
| 2:DI:236:MET:HG2  | 3:DJ:402:ARG:NH1  | 2.04        | 0.72     |
| 3:DQ:335:SER:HB2  | 3:DQ:340:THR:OG1  | 1.89        | 0.72     |
| 1:DO:122:GLN:HE22 | 8:DY:839:C:H5'    | 1.55        | 0.72     |
| 3:CC:352:LEU:CD2  | 3:CC:372:GLU:HB3  | 2.19        | 0.72     |
| 5:AS:655:ASN:ND2  | 8:AY:831:A:N1     | 2.33        | 0.72     |
| 3:CC:353:LEU:CD2  | 3:CC:371:LYS:HZ2  | 1.94        | 0.72     |
| 2:CP:236:MET:O    | 2:CP:236:MET:HG3  | 1.90        | 0.72     |
| 5:AS:674:LEU:HD11 | 6:AT:573:ARG:HH11 | 0.89        | 0.72     |
| 1:CH:130:THR:HG22 | 1:CH:132:LYS:HD3  | 1.72        | 0.72     |
| 5:AS:624:TYR:CE2  | 7:AU:761:VAL:HG21 | 2.25        | 0.72     |
| 5:CL:690:VAL:HG13 | 5:CS:631:ILE:HD13 | 1.72        | 0.72     |
| 3:BJ:412:ASN:HB3  | 3:BJ:413:PRO:CD   | 2.19        | 0.72     |
| 2:CI:230:THR:HG21 | 2:CI:241:LYS:HG3  | 1.72        | 0.72     |
| 2:AP:286:LYS:HE2  | 3:AQ:358:ALA:HB2  | 1.71        | 0.72     |
| 7:AN:738:MET:HB2  | 7:AN:764:GLY:HA3  | 1.71        | 0.72     |
| 8:AV:847:A:N1     | 8:CX:814:A:N6     | 2.35        | 0.72     |
| 5:DL:674:LEU:HB2  | 5:DL:677:ILE:HD11 | 1.71        | 0.72     |
| 5:BS:677:ILE:HG21 | 5:BS:679:LEU:HD21 | 1.71        | 0.72     |
| 4:AK:46:ILE:HD11  | 4:AK:58:LEU:HB2   | 1.70        | 0.72     |
| 5:CE:636:TYR:O    | 5:CE:685:THR:HG22 | 1.88        | 0.72     |
| 4:CR:50:TYR:CD1   | 4:CR:54:ARG:HG3   | 2.24        | 0.72     |
| 3:AC:333:THR:HA   | 3:AC:336:VAL:HG12 | 1.69        | 0.72     |
| 2:BI:207:LEU:CD1  | 2:BI:236:MET:HG3  | 2.20        | 0.72     |
| 5:CL:690:VAL:CG1  | 5:CS:631:ILE:HD13 | 2.20        | 0.72     |
| 7:BG:731:LEU:HD13 | 7:BG:740:LEU:CD2  | 2.20        | 0.72     |
| 5:DS:677:ILE:CG2  | 5:DS:679:LEU:CD2  | 2.67        | 0.72     |
| 7:CN:719:LEU:HD23 | 7:CN:767:ILE:HD12 | 1.72        | 0.72     |
| 2:CI:223:THR:HG23 | 2:CI:247:LEU:HD23 | 1.71        | 0.72     |
| 1:CH:120:ILE:O    | 1:CH:177:LEU:HD12 | 1.89        | 0.72     |
| 2:DP:220:LYS:O    | 2:DP:266:ARG:NH2  | 2.21        | 0.72     |
| 8:CX:808:C:O2'    | 8:CX:809:G:O4'    | 2.08        | 0.72     |
| 7:AN:753:GLN:HG3  | 7:AN:753:GLN:O    | 1.90        | 0.72     |
| 1:BO:141:ILE:HD11 | 1:BO:171:LEU:HD12 | 1.72        | 0.72     |
| 3:CQ:380:SER:HA   | 3:CQ:386:LYS:HG2  | 1.72        | 0.72     |
| 8:CV:858:A:H4'    | 8:CV:859:A:OP2    | 1.90        | 0.71     |
| 7:AU:718:SER:OG   | 7:AU:726:HIS:NE2  | 2.23        | 0.71     |
| 5:BE:647:ILE:HD12 | 5:BE:656:LEU:HD23 | 1.70        | 0.71     |
| 8:AX:866:U:H3'    | 8:AX:867:G:C5'    | 2.17        | 0.71     |
| 3:BC:406:VAL:CG1  | 6:BF:565:ARG:HG3  | 2.20        | 0.71     |
| 1:BA:173:ARG:CZ   | 8:BV:834:U:O2     | 2.38        | 0.71     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BE:642:ARG:HH21 | 5:BE:664:ILE:HG21 | 1.53        | 0.71     |
| 6:DT:547:THR:HG21 | 6:DT:562:VAL:HG23 | 1.70        | 0.71     |
| 2:BI:205:ARG:HA   | 2:BI:208:MET:SD   | 2.30        | 0.71     |
| 1:CO:109:MET:HE1  | 2:CP:239:HIS:CE1  | 2.25        | 0.71     |
| 7:AN:742:ILE:HB   | 7:AN:760:VAL:CG1  | 2.20        | 0.71     |
| 5:BL:674:LEU:HD13 | 6:BM:573:ARG:HD3  | 1.72        | 0.71     |
| 4:CR:9:VAL:CA     | 4:CR:79:ASN:HD22  | 2.02        | 0.71     |
| 1:BO:178:VAL:CG1  | 2:BP:264:ASN:ND2  | 2.48        | 0.71     |
| 7:BN:745:CYS:SG   | 7:BN:757:ILE:HB   | 2.29        | 0.71     |
| 1:DA:178:VAL:HB   | 2:DB:264:ASN:ND2  | 2.06        | 0.71     |
| 6:CF:540:MET:HB2  | 6:CF:566:CYS:SG   | 2.30        | 0.71     |
| 1:CA:121:LEU:HD11 | 1:CA:172:LEU:HD11 | 1.72        | 0.71     |
| 6:DF:547:THR:HG21 | 6:DF:562:VAL:HG23 | 0.72        | 0.71     |
| 4:CK:9:VAL:CA     | 4:CK:80:ALA:HB1   | 2.20        | 0.71     |
| 2:DP:203:LEU:HD21 | 3:DQ:358:ALA:CB   | 2.20        | 0.71     |
| 2:DB:293:GLU:HG3  | 3:DC:398:LYS:HZ3  | 1.55        | 0.71     |
| 6:DM:506:ASN:HB3  | 6:DM:509:PRO:CD   | 2.21        | 0.71     |
| 4:CD:12:GLU:CG    | 4:CD:79:ASN:HD22  | 2.04        | 0.71     |
| 1:BH:192:ILE:HA   | 4:BK:91:GLN:HG3   | 1.72        | 0.71     |
| 7:CG:741:VAL:CG2  | 7:CG:761:VAL:HG22 | 2.21        | 0.71     |
| 3:CC:406:VAL:HG12 | 6:CF:565:ARG:CG   | 2.19        | 0.71     |
| 2:CP:283:VAL:CG2  | 2:CP:287:VAL:HG23 | 2.19        | 0.71     |
| 2:BI:276:LEU:O    | 2:BI:280:LEU:HD12 | 1.91        | 0.71     |
| 6:BF:506:ASN:HB2  | 6:BF:507:PRO:CD   | 2.19        | 0.71     |
| 2:DB:274:LEU:HD11 | 2:DB:279:LEU:CD1  | 2.19        | 0.71     |
| 2:AB:269:ILE:HD11 | 3:AC:394:ARG:HH21 | 1.56        | 0.71     |
| 4:CR:9:VAL:N      | 4:CR:79:ASN:ND2   | 2.39        | 0.71     |
| 2:AI:295:VAL:HG12 | 2:AI:295:VAL:O    | 1.90        | 0.71     |
| 3:AQ:410:LEU:HD13 | 6:AT:559:LEU:CD2  | 2.15        | 0.71     |
| 6:CM:506:ASN:HB2  | 6:CM:507:PRO:CD   | 2.21        | 0.71     |
| 2:AB:204:VAL:HA   | 2:AB:236:MET:HE1  | 1.73        | 0.71     |
| 4:DD:46:ILE:HD11  | 4:DD:58:LEU:HB2   | 1.72        | 0.71     |
| 5:AE:657:VAL:C    | 5:AE:658:LEU:HD23 | 2.11        | 0.71     |
| 2:AI:289:SER:O    | 2:AI:293:GLU:HG2  | 1.90        | 0.71     |
| 5:AS:659:ASP:OD2  | 5:AS:676:ARG:NH1  | 2.24        | 0.71     |
| 3:AJ:348:ASN:HD22 | 8:AX:840:A:H4'    | 1.55        | 0.71     |
| 5:CL:683:ASN:CG   | 6:CM:570:LEU:HD22 | 2.11        | 0.71     |
| 7:AU:725:ARG:NH1  | 7:AU:749:ALA:HB2  | 2.04        | 0.71     |
| 2:DP:202:LYS:O    | 2:DP:280:LEU:CD1  | 2.38        | 0.71     |
| 7:DU:734:PHE:HD1  | 7:DU:740:LEU:HD23 | 1.56        | 0.71     |
| 2:CB:270:LEU:HD11 | 3:CC:400:PHE:HB2  | 1.73        | 0.71     |
| 2:DB:293:GLU:HG3  | 3:DC:398:LYS:NZ   | 2.05        | 0.71     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:CA:169:LEU:CG   | 4:CD:73:LEU:HD12  | 2.21        | 0.71     |
| 6:AM:577:GLU:HG2  | 6:AM:578:GLU:N    | 2.05        | 0.71     |
| 2:DB:249:ASN:ND2  | 8:DV:859:A:H4'    | 2.04        | 0.71     |
| 2:CB:295:VAL:HG23 | 2:CB:295:VAL:O    | 1.89        | 0.71     |
| 7:DU:756:ASN:O    | 7:DU:757:ILE:HD13 | 1.90        | 0.71     |
| 7:BG:750:THR:HG22 | 7:BG:750:THR:O    | 1.91        | 0.71     |
| 1:BH:116:ARG:N    | 1:BH:186:PRO:HD3  | 2.05        | 0.71     |
| 3:CJ:334:GLN:NE2  | 3:CJ:418:LYS:OXT  | 2.24        | 0.71     |
| 3:BQ:407:ILE:HD11 | 6:BT:525:TRP:CH2  | 2.26        | 0.71     |
| 7:AG:756:ASN:O    | 7:AG:757:ILE:HD13 | 1.90        | 0.71     |
| 6:CF:567:ASN:OD1  | 6:CF:568:ASN:ND2  | 2.24        | 0.71     |
| 2:AB:207:LEU:HD23 | 2:AB:210:LEU:HD12 | 1.71        | 0.71     |
| 2:BB:286:LYS:HE3  | 3:BC:336:VAL:HG21 | 1.72        | 0.71     |
| 3:DJ:355:ARG:O    | 3:DJ:367:LEU:HD22 | 1.89        | 0.71     |
| 2:AP:286:LYS:NZ   | 3:AQ:357:LYS:HZ2  | 1.89        | 0.71     |
| 2:DI:277:ASP:CB   | 2:DI:290:LYS:HZ2  | 1.92        | 0.71     |
| 3:DC:362:HIS:HD1  | 8:DV:836:U:H2'    | 1.55        | 0.71     |
| 7:DU:705:HIS:CD2  | 7:DU:736:PRO:HA   | 2.25        | 0.71     |
| 7:DU:719:LEU:HD23 | 7:DU:767:ILE:CD1  | 2.18        | 0.71     |
| 8:AV:849:G:H21    | 8:CX:816:A:C1'    | 2.02        | 0.71     |
| 4:BR:80:ALA:CB    | 4:BR:81:PRO:HD3   | 2.18        | 0.71     |
| 5:BE:635:LEU:HD22 | 5:BE:679:LEU:CD1  | 2.21        | 0.71     |
| 3:AJ:341:GLN:O    | 3:AJ:414:LEU:CD2  | 2.38        | 0.71     |
| 2:BP:276:LEU:HB2  | 2:BP:290:LYS:HB2  | 1.71        | 0.70     |
| 2:BP:236:MET:HE2  | 8:BY:836:U:N3     | 2.06        | 0.70     |
| 5:AE:688:GLN:CG   | 7:AG:760:VAL:HG23 | 2.20        | 0.70     |
| 1:BO:118:ARG:HB3  | 1:BO:181:THR:HG23 | 1.73        | 0.70     |
| 3:BJ:333:THR:CA   | 3:BJ:359:PHE:CZ   | 2.73        | 0.70     |
| 4:CR:9:VAL:HG12   | 4:CR:79:ASN:HB3   | 1.72        | 0.70     |
| 1:CH:178:VAL:HB   | 2:CI:264:ASN:ND2  | 2.05        | 0.70     |
| 3:CC:370:VAL:HG11 | 3:CC:399:MET:CE   | 2.21        | 0.70     |
| 6:AT:511:LEU:O    | 6:AT:511:LEU:HD12 | 1.91        | 0.70     |
| 2:AI:212:HIS:HA   | 2:AI:228:THR:HG22 | 1.71        | 0.70     |
| 2:DB:207:LEU:O    | 2:DB:232:VAL:HG21 | 1.91        | 0.70     |
| 5:DE:690:VAL:CG1  | 5:DE:690:VAL:O    | 2.38        | 0.70     |
| 8:AX:860:G:H2'    | 8:AX:861:G:C8     | 2.26        | 0.70     |
| 7:AG:750:THR:CG2  | 7:AG:750:THR:O    | 2.39        | 0.70     |
| 2:CP:276:LEU:HD12 | 2:CP:290:LYS:HA   | 1.72        | 0.70     |
| 3:AJ:347:ARG:HD3  | 6:AM:525:TRP:HH2  | 1.55        | 0.70     |
| 2:BP:286:LYS:HZ1  | 3:BQ:358:ALA:HB2  | 1.55        | 0.70     |
| 2:AI:206:PHE:CD1  | 2:AI:279:LEU:HB3  | 2.27        | 0.70     |
| 2:AB:204:VAL:HG12 | 2:AB:236:MET:HE3  | 1.72        | 0.70     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BL:664:ILE:HG22 | 5:BL:665:HIS:N    | 2.06        | 0.70     |
| 6:BF:520:MET:HB3  | 6:BF:550:TYR:OH   | 1.90        | 0.70     |
| 3:BC:331:VAL:HG13 | 3:BC:332:LEU:HG   | 1.71        | 0.70     |
| 7:BG:704:ALA:O    | 7:BG:708:GLU:HG2  | 1.91        | 0.70     |
| 3:DJ:409:VAL:O    | 6:DM:562:VAL:HG13 | 1.91        | 0.70     |
| 1:DH:140:LEU:HD13 | 1:DH:180:MET:HE3  | 1.74        | 0.70     |
| 1:BH:178:VAL:HB   | 2:BI:264:ASN:HD22 | 1.54        | 0.70     |
| 5:AE:635:LEU:HD13 | 5:AE:687:LEU:CD2  | 2.21        | 0.70     |
| 6:AF:525:TRP:NE1  | 8:AV:839:C:N3     | 2.38        | 0.70     |
| 8:AX:865:C:O2'    | 8:AX:866:U:H5'    | 1.90        | 0.70     |
| 6:CT:579:GLU:O    | 6:CT:582:GLY:N    | 2.24        | 0.70     |
| 8:BY:807:A:H2'    | 8:BY:808:C:H5''   | 1.74        | 0.70     |
| 2:AP:280:LEU:HD23 | 2:AP:286:LYS:CG   | 2.21        | 0.70     |
| 5:BL:655:ASN:O    | 5:BL:656:LEU:HD23 | 1.92        | 0.70     |
| 5:CL:655:ASN:ND2  | 8:CX:831:A:N1     | 2.40        | 0.70     |
| 1:AA:159:ALA:C    | 8:AV:849:G:OP2    | 2.29        | 0.70     |
| 2:BP:280:LEU:HD23 | 2:BP:286:LYS:CD   | 2.21        | 0.70     |
| 5:BS:686:LEU:HD22 | 7:BU:762:ILE:HG12 | 1.74        | 0.70     |
| 2:DB:219:LEU:HD23 | 2:DB:265:ILE:HG12 | 1.74        | 0.70     |
| 3:DJ:366:VAL:HG22 | 3:DJ:400:PHE:HE1  | 1.55        | 0.70     |
| 1:CA:181:THR:OG1  | 2:CB:255:LEU:HD13 | 1.90        | 0.70     |
| 2:BI:287:VAL:O    | 2:BI:291:LYS:CG   | 2.40        | 0.70     |
| 5:AL:655:ASN:O    | 5:AL:656:LEU:HD23 | 1.92        | 0.70     |
| 5:BE:621:ILE:HD11 | 7:BG:741:VAL:HG23 | 1.67        | 0.70     |
| 6:CT:547:THR:HG21 | 6:CT:562:VAL:HG23 | 1.72        | 0.70     |
| 5:CE:644:GLU:O    | 5:CE:661:ALA:HA   | 1.91        | 0.70     |
| 5:CE:674:LEU:HD13 | 6:CF:573:ARG:HD3  | 1.72        | 0.70     |
| 5:BS:661:ALA:CB   | 5:BS:677:ILE:HD12 | 2.20        | 0.70     |
| 1:CH:137:HIS:NE2  | 8:CX:834:U:H3'    | 2.06        | 0.70     |
| 1:AA:178:VAL:HG22 | 2:AB:264:ASN:ND2  | 2.07        | 0.70     |
| 3:AJ:335:SER:OG   | 3:AJ:411:ARG:NH2  | 2.24        | 0.70     |
| 1:BO:120:ILE:HD12 | 1:BO:179:SER:HB2  | 1.73        | 0.70     |
| 3:CJ:370:VAL:CG1  | 3:CJ:399:MET:HE3  | 2.20        | 0.70     |
| 5:DL:647:ILE:HA   | 5:DL:658:LEU:HD23 | 1.72        | 0.70     |
| 4:CK:74:PRO:HD2   | 4:CK:77:LEU:HD11  | 1.72        | 0.70     |
| 1:CH:125:ARG:NH1  | 1:CH:147:GLU:OE2  | 2.24        | 0.70     |
| 3:DC:340:THR:HG21 | 3:DC:414:LEU:HD22 | 1.74        | 0.70     |
| 3:AQ:357:LYS:HD3  | 3:AQ:366:VAL:CG1  | 2.22        | 0.70     |
| 2:CI:276:LEU:CG   | 3:CJ:357:LYS:HZ1  | 2.05        | 0.70     |
| 1:BO:178:VAL:HG13 | 2:BP:264:ASN:CG   | 2.11        | 0.70     |
| 5:DS:657:VAL:C    | 5:DS:658:LEU:HD23 | 2.12        | 0.70     |
| 1:DO:170:VAL:CG1  | 4:DR:70:PHE:HB2   | 2.21        | 0.70     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BL:643:ILE:HA   | 5:BL:662:GLU:O    | 1.91        | 0.70     |
| 3:CC:342:VAL:CG1  | 3:CC:409:VAL:HG13 | 2.21        | 0.70     |
| 6:DT:547:THR:CG2  | 6:DT:562:VAL:HG21 | 2.22        | 0.70     |
| 5:CL:635:LEU:HD12 | 5:CL:687:LEU:HD23 | 1.72        | 0.70     |
| 2:DB:236:MET:HG2  | 3:DC:402:ARG:NH1  | 2.07        | 0.70     |
| 2:DP:247:LEU:HD23 | 2:DP:249:ASN:H    | 1.55        | 0.70     |
| 8:AY:842:U:H2'    | 8:AY:843:C:O4'    | 1.92        | 0.70     |
| 7:CN:744:GLU:N    | 7:CN:758:GLY:O    | 2.20        | 0.70     |
| 7:AU:730:ILE:HG21 | 7:AU:732:ARG:NH2  | 2.07        | 0.70     |
| 4:CR:19:THR:HB    | 4:CR:72:ILE:HB    | 1.71        | 0.70     |
| 2:AP:280:LEU:HG   | 2:AP:282:ASP:H    | 1.57        | 0.70     |
| 1:AA:177:LEU:HD12 | 1:AA:178:VAL:H    | 1.56        | 0.70     |
| 7:BN:750:THR:O    | 7:BN:750:THR:HG22 | 1.89        | 0.70     |
| 5:AS:674:LEU:HD13 | 6:AT:573:ARG:HD3  | 0.75        | 0.70     |
| 4:BK:38:ASN:ND2   | 8:BX:833:U:O4     | 2.25        | 0.70     |
| 2:BP:277:ASP:N    | 2:BP:290:LYS:HD3  | 2.06        | 0.70     |
| 2:BP:210:LEU:HD23 | 2:BP:279:LEU:HD22 | 1.72        | 0.70     |
| 5:DL:690:VAL:CG1  | 5:DS:631:ILE:HD12 | 2.21        | 0.70     |
| 3:AJ:331:VAL:HG11 | 6:AM:543:GLN:CD   | 2.10        | 0.70     |
| 3:AJ:334:GLN:HG2  | 3:AJ:418:LYS:HB2  | 1.73        | 0.70     |
| 2:DI:236:MET:HG2  | 3:DJ:402:ARG:HH12 | 1.56        | 0.70     |
| 3:BJ:333:THR:HG1  | 3:BJ:359:PHE:HZ   | 1.37        | 0.70     |
| 3:AJ:370:VAL:HG11 | 3:AJ:399:MET:HE3  | 1.73        | 0.70     |
| 1:DO:188:LYS:O    | 1:DO:192:ILE:HG13 | 1.92        | 0.70     |
| 2:DI:287:VAL:CA   | 2:DI:290:LYS:HE2  | 2.22        | 0.69     |
| 6:CF:519:VAL:CG2  | 6:CF:572:ILE:HD11 | 2.12        | 0.69     |
| 3:CJ:329:LEU:CD1  | 3:CJ:359:PHE:CD2  | 2.73        | 0.69     |
| 2:BP:205:ARG:O    | 2:BP:208:MET:HB2  | 1.92        | 0.69     |
| 3:BC:413:PRO:O    | 3:BC:414:LEU:HD23 | 1.92        | 0.69     |
| 5:BS:642:ARG:HG3  | 5:BS:664:ILE:HB   | 1.74        | 0.69     |
| 5:BL:661:ALA:CB   | 5:BL:677:ILE:CD1  | 2.70        | 0.69     |
| 3:CJ:340:THR:HG21 | 3:CJ:414:LEU:HD12 | 1.74        | 0.69     |
| 3:DJ:411:ARG:HH12 | 6:DM:563:LEU:HD22 | 1.57        | 0.69     |
| 3:DJ:407:ILE:HA   | 6:DM:568:ASN:HD21 | 1.56        | 0.69     |
| 7:AN:741:VAL:HG13 | 7:AN:760:VAL:O    | 1.91        | 0.69     |
| 2:BP:286:LYS:NZ   | 3:BQ:358:ALA:CB   | 2.52        | 0.69     |
| 6:BM:530:LYS:O    | 6:BM:548:GLU:N    | 2.23        | 0.69     |
| 6:DT:547:THR:CG2  | 6:DT:562:VAL:HG23 | 2.21        | 0.69     |
| 2:BB:286:LYS:CE   | 3:BC:336:VAL:HG21 | 2.22        | 0.69     |
| 1:CA:137:HIS:CE1  | 8:CV:834:U:C2     | 2.79        | 0.69     |
| 5:BE:677:ILE:HG21 | 5:BE:679:LEU:CD2  | 2.21        | 0.69     |
| 8:BV:851:G:N2     | 8:BV:853:A:H3'    | 2.07        | 0.69     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BC:348:ASN:HB3  | 3:BC:350:LYS:HG3  | 1.73        | 0.69     |
| 5:AL:634:TRP:CZ3  | 5:AL:644:GLU:HB2  | 2.27        | 0.69     |
| 2:AP:226:HIS:O    | 2:AP:243:VAL:HG13 | 1.92        | 0.69     |
| 2:AP:271:PRO:O    | 3:AQ:398:LYS:HD2  | 1.92        | 0.69     |
| 3:DJ:329:LEU:CA   | 3:DJ:359:PHE:HE2  | 2.04        | 0.69     |
| 5:BL:635:LEU:HD22 | 5:BL:679:LEU:HD13 | 1.73        | 0.69     |
| 8:BY:866:U:H3'    | 8:BY:867:G:H5''   | 1.73        | 0.69     |
| 2:BI:207:LEU:CB   | 2:BI:232:VAL:HG11 | 2.22        | 0.69     |
| 1:AH:154:LYS:HB2  | 8:CV:813:G:H5''   | 1.72        | 0.69     |
| 3:AJ:344:ILE:HD13 | 3:AJ:365:MET:HE1  | 1.73        | 0.69     |
| 3:DJ:329:LEU:O    | 3:DJ:359:PHE:CZ   | 2.45        | 0.69     |
| 3:DJ:407:ILE:HG12 | 6:DM:568:ASN:HD21 | 1.56        | 0.69     |
| 1:CO:109:MET:CE   | 2:CP:239:HIS:CE1  | 2.76        | 0.69     |
| 6:CM:567:ASN:HD22 | 8:CX:837:G:H1'    | 1.57        | 0.69     |
| 2:AI:280:LEU:HD22 | 2:AI:286:LYS:HD3  | 1.70        | 0.69     |
| 6:CT:519:VAL:HG21 | 6:CT:572:ILE:HD11 | 1.73        | 0.69     |
| 2:BB:232:VAL:HG22 | 2:BB:238:THR:HG23 | 1.75        | 0.69     |
| 5:DL:663:GLU:O    | 5:DL:671:ARG:HB2  | 1.91        | 0.69     |
| 8:AY:866:U:H2'    | 8:AY:867:G:H5''   | 1.74        | 0.69     |
| 6:AT:558:HIS:C    | 6:AT:559:LEU:HD12 | 2.13        | 0.69     |
| 4:BK:62:TYR:O     | 7:BN:769:MET:HA   | 1.92        | 0.69     |
| 2:BP:286:LYS:HD3  | 3:BQ:357:LYS:HZ2  | 1.58        | 0.69     |
| 5:DL:661:ALA:HB3  | 5:DL:677:ILE:HD12 | 1.75        | 0.69     |
| 5:BS:635:LEU:HD22 | 5:BS:679:LEU:HD13 | 1.74        | 0.69     |
| 3:AC:348:ASN:HA   | 8:AV:840:A:H4'    | 1.74        | 0.69     |
| 4:DK:19:THR:HB    | 4:DK:72:ILE:HD12  | 1.74        | 0.69     |
| 3:AJ:333:THR:CA   | 3:AJ:359:PHE:HZ   | 2.06        | 0.69     |
| 3:BC:391:ASN:CB   | 6:BT:552:ASP:HB2  | 2.23        | 0.69     |
| 8:BX:853:A:C5     | 8:BX:854:A:C6     | 2.81        | 0.69     |
| 5:CE:650:PHE:O    | 6:CF:505:LEU:CD2  | 2.40        | 0.69     |
| 8:AY:865:C:O2'    | 8:AY:866:U:H5'    | 1.91        | 0.69     |
| 6:BM:518:PRO:HG2  | 6:BM:575:VAL:HB   | 1.74        | 0.69     |
| 1:DH:102:THR:HA   | 1:DH:107:SER:HB2  | 1.75        | 0.69     |
| 8:CV:858:A:O2'    | 8:CV:859:A:C8     | 2.43        | 0.69     |
| 3:BC:358:ALA:HB3  | 3:BC:366:VAL:CG2  | 2.22        | 0.69     |
| 5:DS:667:LYS:O    | 5:DS:668:THR:CG2  | 2.40        | 0.69     |
| 4:BD:12:GLU:CD    | 4:BD:79:ASN:ND2   | 2.46        | 0.69     |
| 2:CB:223:THR:HG23 | 2:CB:247:LEU:HA   | 1.73        | 0.69     |
| 3:BJ:390:VAL:CG1  | 3:BJ:391:ASN:N    | 2.55        | 0.69     |
| 8:BX:851:G:H21    | 8:BX:854:A:H62    | 1.40        | 0.69     |
| 5:DS:686:LEU:CD2  | 7:DU:762:ILE:HG12 | 2.21        | 0.69     |
| 4:BR:47:THR:HG23  | 4:BR:57:GLN:OE1   | 1.93        | 0.69     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:CP:235:SER:O    | 2:CP:236:MET:HB3  | 1.92        | 0.69     |
| 3:CC:401:LEU:HD21 | 3:CC:406:VAL:CG2  | 2.22        | 0.69     |
| 3:CQ:333:THR:O    | 3:CQ:337:LYS:HG2  | 1.92        | 0.69     |
| 6:AM:577:GLU:O    | 6:AM:580:GLU:N    | 2.25        | 0.69     |
| 3:DQ:332:LEU:HD12 | 6:DT:563:LEU:HD22 | 1.73        | 0.69     |
| 7:CG:725:ARG:HG2  | 7:CG:749:ALA:CB   | 2.23        | 0.69     |
| 4:CR:50:TYR:HE1   | 4:CR:56:ALA:HB2   | 1.57        | 0.69     |
| 6:DF:580:GLU:O    | 6:DF:584:MET:HG3  | 1.93        | 0.69     |
| 3:CJ:334:GLN:HG2  | 3:CJ:417:GLY:N    | 2.08        | 0.69     |
| 8:AY:859:A:C8     | 8:AY:860:G:C8     | 2.81        | 0.69     |
| 6:DM:548:GLU:HB3  | 6:DM:555:LEU:HD11 | 1.75        | 0.69     |
| 2:DI:206:PHE:CE1  | 2:DI:210:LEU:HD11 | 2.27        | 0.69     |
| 3:AJ:407:ILE:O    | 6:AM:564:ILE:HG23 | 1.92        | 0.69     |
| 8:CX:837:G:O5'    | 8:CX:837:G:H8     | 1.75        | 0.69     |
| 2:BP:210:LEU:CD2  | 2:BP:279:LEU:HD11 | 2.21        | 0.69     |
| 8:AV:835:U:O2'    | 8:AV:836:U:H4'    | 1.92        | 0.69     |
| 1:BO:143:CYS:SG   | 1:BO:169:LEU:CD1  | 2.81        | 0.69     |
| 2:DB:276:LEU:HD12 | 2:DB:290:LYS:HB2  | 1.75        | 0.69     |
| 3:DC:368:GLU:HG2  | 3:DC:398:LYS:HZ3  | 1.57        | 0.69     |
| 7:DN:741:VAL:CG1  | 7:DN:759:MET:SD   | 2.80        | 0.69     |
| 7:DN:712:PHE:CE2  | 7:DN:772:ALA:HB2  | 2.28        | 0.69     |
| 5:BE:663:GLU:OE2  | 6:BF:571:TYR:OH   | 2.08        | 0.69     |
| 2:BB:249:ASN:ND2  | 8:BV:859:A:H4'    | 2.07        | 0.69     |
| 1:DO:118:ARG:HD2  | 1:DO:181:THR:CG2  | 2.23        | 0.69     |
| 1:CA:121:LEU:HD21 | 1:CA:172:LEU:HD11 | 1.75        | 0.69     |
| 2:BI:287:VAL:O    | 2:BI:291:LYS:HG3  | 1.93        | 0.69     |
| 7:CN:756:ASN:O    | 7:CN:757:ILE:HD13 | 1.93        | 0.69     |
| 8:AY:814:A:O5'    | 8:AY:814:A:H8     | 1.76        | 0.69     |
| 1:CO:121:LEU:HD21 | 1:CO:172:LEU:HD11 | 1.74        | 0.69     |
| 3:DJ:329:LEU:O    | 3:DJ:359:PHE:HZ   | 1.76        | 0.69     |
| 3:CQ:408:VAL:HG13 | 6:CT:562:VAL:HG13 | 1.75        | 0.69     |
| 2:AI:280:LEU:HD21 | 2:AI:283:VAL:CA   | 2.14        | 0.69     |
| 2:BP:210:LEU:HD22 | 2:BP:274:LEU:HD11 | 1.75        | 0.69     |
| 8:CV:858:A:O2'    | 8:CV:859:A:N7     | 2.23        | 0.69     |
| 7:BN:729:GLY:HA3  | 7:BN:742:ILE:HG23 | 1.75        | 0.69     |
| 2:CB:207:LEU:HD23 | 2:CB:210:LEU:CD1  | 2.23        | 0.69     |
| 4:CR:28:TYR:CZ    | 7:CU:769:MET:SD   | 2.86        | 0.69     |
| 3:BC:347:ARG:C    | 6:BF:525:TRP:HZ2  | 1.95        | 0.69     |
| 5:DE:618:ILE:HG21 | 7:DG:709:LEU:HD23 | 1.74        | 0.69     |
| 7:DG:709:LEU:HD22 | 7:DG:734:PHE:CD2  | 2.28        | 0.69     |
| 5:AL:680:LYS:NZ   | 8:AX:831:A:N3     | 2.40        | 0.69     |
| 4:BD:5:VAL:HB     | 4:BD:6:PRO:HD3    | 1.73        | 0.69     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:BH:103:VAL:O    | 1:BH:107:SER:OG   | 2.09        | 0.69     |
| 2:CI:270:LEU:HB3  | 3:CJ:398:LYS:HZ1  | 1.57        | 0.69     |
| 2:BP:209:LYS:O    | 2:BP:279:LEU:CD2  | 2.41        | 0.69     |
| 3:CC:394:ARG:CZ   | 3:CC:396:ILE:HD11 | 2.22        | 0.69     |
| 5:BL:632:GLN:HE21 | 5:BL:644:GLU:CG   | 2.05        | 0.69     |
| 8:CY:814:A:C6     | 8:CY:815:A:C6     | 2.81        | 0.69     |
| 1:AA:137:HIS:ND1  | 1:AA:137:HIS:O    | 2.25        | 0.69     |
| 6:BT:508:LYS:HB2  | 6:BT:509:PRO:HD3  | 1.75        | 0.69     |
| 2:CB:284:GLU:HB3  | 2:CB:285:PRO:HD3  | 1.75        | 0.69     |
| 3:DC:343:LEU:HD23 | 3:DC:410:LEU:HD12 | 1.75        | 0.68     |
| 2:AP:210:LEU:CD1  | 2:AP:274:LEU:CD1  | 2.35        | 0.68     |
| 1:AA:121:LEU:HD11 | 1:AA:172:LEU:HD11 | 1.74        | 0.68     |
| 7:BU:705:HIS:N    | 7:BU:706:PRO:HD2  | 2.09        | 0.68     |
| 7:CN:738:MET:O    | 7:CN:764:GLY:CA   | 2.41        | 0.68     |
| 3:DQ:342:VAL:HG13 | 3:DQ:409:VAL:HG12 | 1.75        | 0.68     |
| 6:DF:514:LEU:O    | 6:DF:517:LYS:HB2  | 1.93        | 0.68     |
| 4:AD:27:VAL:O     | 4:AD:48:VAL:HA    | 1.93        | 0.68     |
| 2:BP:209:LYS:CB   | 2:BP:279:LEU:CD2  | 2.70        | 0.68     |
| 2:BP:210:LEU:HD23 | 2:BP:279:LEU:CD2  | 2.22        | 0.68     |
| 1:CH:173:ARG:CZ   | 8:CX:834:U:O2     | 2.41        | 0.68     |
| 2:DP:204:VAL:CG1  | 2:DP:236:MET:HE2  | 2.20        | 0.68     |
| 4:DD:27:VAL:HG12  | 4:DD:27:VAL:O     | 1.93        | 0.68     |
| 1:CA:168:GLY:O    | 1:CA:170:VAL:HG23 | 1.93        | 0.68     |
| 7:AU:739:ASN:ND2  | 8:AY:832:U:O4     | 2.22        | 0.68     |
| 2:CI:284:GLU:HB3  | 2:CI:285:PRO:CD   | 2.23        | 0.68     |
| 5:AS:635:LEU:HD12 | 5:AS:636:TYR:N    | 2.08        | 0.68     |
| 4:AK:66:SER:HB3   | 8:AX:833:U:O2     | 1.93        | 0.68     |
| 3:CC:347:ARG:NH2  | 8:CV:839:C:O3'    | 2.27        | 0.68     |
| 2:BB:276:LEU:HD21 | 2:BB:278:THR:HB   | 1.75        | 0.68     |
| 7:DN:717:LEU:CD2  | 7:DN:772:ALA:HA   | 2.23        | 0.68     |
| 8:AV:810:A:C2     | 8:AV:811:C:C4     | 2.82        | 0.68     |
| 1:DO:131:PHE:HZ   | 1:DO:134:PHE:HB3  | 1.59        | 0.68     |
| 6:CT:565:ARG:NH2  | 8:CY:837:G:C2     | 2.61        | 0.68     |
| 5:AE:610:VAL:HG12 | 5:AE:612:LYS:HG2  | 1.76        | 0.68     |
| 6:CF:541:ASN:OD1  | 6:CF:565:ARG:HA   | 1.94        | 0.68     |
| 6:BF:539:TYR:CE1  | 8:BV:837:G:C6     | 2.82        | 0.68     |
| 6:BF:539:TYR:CE2  | 8:BV:837:G:N1     | 2.61        | 0.68     |
| 4:BK:59:GLU:CB    | 7:BN:775:ARG:NH2  | 2.56        | 0.68     |
| 8:BY:839:C:C2'    | 8:BY:840:A:H5'    | 2.23        | 0.68     |
| 3:AJ:313:PRO:O    | 3:AJ:317:GLN:HG3  | 1.93        | 0.68     |
| 1:AA:137:HIS:NE2  | 8:AV:834:U:H3'    | 2.08        | 0.68     |
| 8:CY:806:G:H2'    | 8:CY:807:A:C8     | 2.28        | 0.68     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:BD:19:THR:HB    | 4:BD:72:ILE:HB    | 1.75        | 0.68     |
| 2:AP:202:LYS:NZ   | 2:AP:282:ASP:OD2  | 2.23        | 0.68     |
| 3:DJ:407:ILE:HA   | 6:DM:568:ASN:ND2  | 2.08        | 0.68     |
| 2:DI:276:LEU:HD12 | 2:DI:290:LYS:HB2  | 1.72        | 0.68     |
| 5:BL:655:ASN:HD21 | 8:BX:831:A:H2     | 1.39        | 0.68     |
| 7:DN:717:LEU:HD12 | 7:DN:731:LEU:HB2  | 1.76        | 0.68     |
| 2:AI:266:ARG:O    | 3:AJ:402:ARG:N    | 2.27        | 0.68     |
| 1:AH:185:PRO:O    | 1:AH:187:PRO:HD3  | 1.93        | 0.68     |
| 2:DI:271:PRO:O    | 3:DJ:398:LYS:CE   | 2.42        | 0.68     |
| 1:DO:181:THR:HG21 | 2:DP:255:LEU:HD13 | 1.75        | 0.68     |
| 3:CC:417:GLY:O    | 3:CC:418:LYS:CG   | 2.42        | 0.68     |
| 1:BO:171:LEU:HD23 | 1:BO:171:LEU:O    | 1.92        | 0.68     |
| 3:DQ:353:LEU:HD23 | 3:DQ:371:LYS:HD2  | 1.75        | 0.68     |
| 1:AH:121:LEU:HD22 | 1:AH:176:ASN:HB3  | 1.73        | 0.68     |
| 5:BS:661:ALA:CB   | 5:BS:677:ILE:CD1  | 2.72        | 0.68     |
| 2:AI:217:ILE:CG2  | 2:AI:265:ILE:HG23 | 2.23        | 0.68     |
| 3:BJ:361:ARG:HG2  | 8:BX:830:A:C5'    | 2.24        | 0.68     |
| 2:CI:214:THR:HA   | 2:CI:227:GLY:O    | 1.94        | 0.68     |
| 3:CQ:343:LEU:HD11 | 3:CQ:351:LYS:HB3  | 1.75        | 0.68     |
| 2:CP:236:MET:HG2  | 3:CQ:402:ARG:HH12 | 1.57        | 0.68     |
| 2:CI:271:PRO:HD2  | 2:CI:274:LEU:HD11 | 1.75        | 0.68     |
| 3:AJ:343:LEU:O    | 3:AJ:410:LEU:HD23 | 1.94        | 0.68     |
| 5:CL:680:LYS:HD3  | 6:CM:566:CYS:SG   | 2.34        | 0.68     |
| 3:BQ:328:PRO:HA   | 6:BT:543:GLN:OE1  | 1.94        | 0.68     |
| 8:AV:841:G:H2'    | 8:AV:842:U:C6     | 2.29        | 0.68     |
| 6:DF:580:GLU:O    | 6:DF:583:GLU:HG2  | 1.94        | 0.68     |
| 6:AT:522:LYS:HZ3  | 6:AT:526:GLY:HA2  | 1.57        | 0.68     |
| 5:BE:671:ARG:C    | 5:BE:672:LYS:HG2  | 2.14        | 0.68     |
| 1:DO:146:ASP:OD1  | 1:DO:166:VAL:HG13 | 1.94        | 0.68     |
| 2:AB:205:ARG:HD3  | 2:AB:278:THR:OG1  | 1.94        | 0.68     |
| 7:BU:712:PHE:HB3  | 7:BU:717:LEU:HD11 | 1.76        | 0.68     |
| 4:DK:64:ARG:HD3   | 4:DK:67:LYS:HE2   | 1.75        | 0.68     |
| 4:AK:19:THR:HB    | 4:AK:72:ILE:HB    | 1.76        | 0.68     |
| 5:CS:662:GLU:HA   | 5:CS:673:GLN:HA   | 1.76        | 0.68     |
| 8:DX:840:A:H2'    | 8:DX:841:G:O4'    | 1.94        | 0.68     |
| 3:DC:358:ALA:HB3  | 3:DC:366:VAL:CG2  | 2.23        | 0.68     |
| 3:DC:412:ASN:HB3  | 3:DC:413:PRO:HD3  | 1.74        | 0.68     |
| 5:BE:686:LEU:HD21 | 7:BG:721:LEU:HD21 | 1.75        | 0.68     |
| 4:AK:40:ASN:HB3   | 4:AK:62:TYR:CZ    | 2.28        | 0.68     |
| 5:DL:674:LEU:HD12 | 5:DL:677:ILE:CD1  | 2.23        | 0.68     |
| 3:BJ:347:ARG:HA   | 6:BM:525:TRP:CH2  | 2.29        | 0.68     |
| 3:BC:407:ILE:HG22 | 3:BC:408:VAL:HG23 | 1.76        | 0.68     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BL:663:GLU:OE2  | 5:BL:674:LEU:HD11 | 1.94        | 0.68     |
| 4:BR:13:ALA:O     | 4:BR:32:LEU:HD23  | 1.93        | 0.68     |
| 5:BE:671:ARG:O    | 5:BE:672:LYS:HG2  | 1.94        | 0.68     |
| 3:CQ:358:ALA:HB3  | 3:CQ:366:VAL:CG2  | 2.24        | 0.68     |
| 2:CI:280:LEU:HG   | 2:CI:283:VAL:H    | 1.59        | 0.68     |
| 4:CK:9:VAL:HA     | 4:CK:80:ALA:HB2   | 1.76        | 0.68     |
| 8:CV:847:A:C5     | 8:CV:858:A:C2     | 2.81        | 0.68     |
| 3:BC:346:CYS:O    | 6:BF:525:TRP:HH2  | 1.76        | 0.68     |
| 2:BB:207:LEU:CD1  | 2:BB:236:MET:SD   | 2.81        | 0.68     |
| 7:BU:742:ILE:HB   | 7:BU:760:VAL:HG12 | 1.75        | 0.68     |
| 2:BP:218:GLU:OE1  | 2:BP:267:TYR:CZ   | 2.47        | 0.68     |
| 1:AO:152:LYS:NZ   | 8:CY:814:A:C8     | 2.62        | 0.68     |
| 5:DE:621:ILE:CD1  | 7:DG:741:VAL:CG2  | 2.72        | 0.67     |
| 2:DP:276:LEU:HD12 | 2:DP:290:LYS:HA   | 1.76        | 0.67     |
| 3:CC:407:ILE:HD12 | 6:CF:525:TRP:CH2  | 2.29        | 0.67     |
| 6:BF:547:THR:CG2  | 6:BF:562:VAL:HG23 | 2.24        | 0.67     |
| 7:AN:717:LEU:HD22 | 7:AN:772:ALA:HB2  | 1.76        | 0.67     |
| 5:DE:674:LEU:HD12 | 5:DE:677:ILE:HD11 | 1.74        | 0.67     |
| 7:CN:742:ILE:HG21 | 7:CN:745:CYS:HB3  | 1.76        | 0.67     |
| 7:BN:769:MET:O    | 7:BN:770:LEU:HD12 | 1.94        | 0.67     |
| 3:CJ:342:VAL:CG1  | 3:CJ:409:VAL:CG1  | 2.71        | 0.67     |
| 6:CF:519:VAL:HA   | 6:CF:575:VAL:HG23 | 1.75        | 0.67     |
| 3:AC:410:LEU:HD22 | 6:AF:562:VAL:CG2  | 2.23        | 0.67     |
| 4:BK:9:VAL:CA     | 4:BK:80:ALA:CB    | 2.72        | 0.67     |
| 6:BM:524:LYS:HD3  | 8:BX:838:A:N1     | 2.09        | 0.67     |
| 3:DC:363:CYS:SG   | 6:DF:565:ARG:NH1  | 2.66        | 0.67     |
| 3:AQ:331:VAL:CG2  | 6:AT:543:GLN:HE22 | 2.06        | 0.67     |
| 5:BL:621:ILE:HD12 | 7:BN:739:ASN:HB3  | 1.73        | 0.67     |
| 1:CO:188:LYS:O    | 1:CO:191:GLY:N    | 2.26        | 0.67     |
| 1:DH:179:SER:HB3  | 2:DI:258:LEU:HD11 | 1.76        | 0.67     |
| 1:BH:131:PHE:HE2  | 1:BH:140:LEU:HD22 | 1.60        | 0.67     |
| 1:BH:179:SER:CB   | 2:BI:258:LEU:HD11 | 2.21        | 0.67     |
| 1:BA:131:PHE:HZ   | 1:BA:134:PHE:HB3  | 1.59        | 0.67     |
| 3:DQ:342:VAL:CG1  | 3:DQ:409:VAL:HG12 | 2.24        | 0.67     |
| 3:BC:391:ASN:HB2  | 6:BT:552:ASP:HB2  | 1.76        | 0.67     |
| 6:AF:520:MET:HG3  | 6:AF:575:VAL:CG1  | 2.24        | 0.67     |
| 3:DJ:363:CYS:SG   | 6:DM:565:ARG:HD3  | 2.34        | 0.67     |
| 7:AN:729:GLY:HA3  | 7:AN:742:ILE:CG2  | 2.24        | 0.67     |
| 5:BE:632:GLN:HE21 | 5:CE:690:VAL:HG12 | 1.59        | 0.67     |
| 5:BE:680:LYS:HB3  | 6:BF:570:LEU:O    | 1.93        | 0.67     |
| 3:BC:412:ASN:HB2  | 3:BC:413:PRO:HD3  | 1.77        | 0.67     |
| 1:AO:181:THR:HB   | 2:AP:258:LEU:HD13 | 1.76        | 0.67     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:AF:555:LEU:HD23 | 3:AQ:353:LEU:HD22 | 1.76        | 0.67     |
| 3:CJ:385:LYS:O    | 3:CJ:386:LYS:HG3  | 1.94        | 0.67     |
| 2:AP:286:LYS:CD   | 3:AQ:357:LYS:HZ3  | 2.04        | 0.67     |
| 7:AN:729:GLY:HA3  | 7:AN:742:ILE:HG21 | 1.76        | 0.67     |
| 7:DU:717:LEU:CD2  | 7:DU:772:ALA:HB2  | 2.22        | 0.67     |
| 5:BS:655:ASN:ND2  | 8:BY:831:A:C2     | 2.52        | 0.67     |
| 6:BT:519:VAL:HG21 | 6:BT:572:ILE:HD11 | 1.75        | 0.67     |
| 3:AC:347:ARG:O    | 6:AF:525:TRP:CZ2  | 2.48        | 0.67     |
| 5:DL:634:TRP:HZ2  | 5:DL:642:ARG:CD   | 2.08        | 0.67     |
| 6:BF:547:THR:HG21 | 6:BF:562:VAL:HG21 | 1.74        | 0.67     |
| 2:AI:225:VAL:HG22 | 2:AI:245:MET:CG   | 2.25        | 0.67     |
| 6:AT:522:LYS:HZ2  | 6:AT:526:GLY:HA2  | 1.58        | 0.67     |
| 1:BA:137:HIS:NE2  | 8:BV:834:U:H2'    | 2.09        | 0.67     |
| 6:DF:533:LEU:HD12 | 6:DF:544:LEU:HD23 | 1.77        | 0.67     |
| 1:AA:190:THR:OG1  | 1:AA:191:GLY:N    | 2.28        | 0.67     |
| 5:AL:674:LEU:HB2  | 5:AL:677:ILE:HD11 | 1.77        | 0.67     |
| 3:DJ:357:LYS:HD2  | 3:DJ:368:GLU:OE2  | 1.95        | 0.67     |
| 6:CM:524:LYS:N    | 6:CM:568:ASN:O    | 2.26        | 0.67     |
| 3:CC:357:LYS:HD2  | 3:CC:368:GLU:OE2  | 1.95        | 0.67     |
| 1:BA:131:PHE:HE1  | 1:BA:140:LEU:HD22 | 1.60        | 0.67     |
| 7:BG:722:ASN:OD1  | 7:BG:723:GLY:N    | 2.27        | 0.67     |
| 5:CE:640:ASN:ND2  | 5:CE:666:SER:OG   | 2.28        | 0.67     |
| 1:CO:140:LEU:CD1  | 1:CO:180:MET:CE   | 2.73        | 0.67     |
| 8:CY:838:A:H4'    | 8:CY:839:C:OP2    | 1.93        | 0.67     |
| 1:CH:132:LYS:CB   | 4:CK:84:LYS:HD3   | 2.24        | 0.67     |
| 2:DP:209:LYS:CB   | 2:DP:279:LEU:CD2  | 2.72        | 0.67     |
| 5:AE:674:LEU:CD1  | 6:AF:573:ARG:HD3  | 2.24        | 0.67     |
| 3:AC:407:ILE:HA   | 6:AF:568:ASN:ND2  | 2.10        | 0.67     |
| 7:AU:731:LEU:HD13 | 7:AU:740:LEU:HD22 | 1.76        | 0.67     |
| 3:AC:390:VAL:HG13 | 3:AC:392:LYS:CE   | 2.24        | 0.67     |
| 7:CG:737:PHE:CE1  | 8:CV:833:U:H5''   | 2.29        | 0.67     |
| 8:BY:841:G:O2'    | 8:BY:842:U:H5'    | 1.95        | 0.67     |
| 5:CL:668:THR:O    | 5:CL:668:THR:HG22 | 1.94        | 0.67     |
| 2:AB:208:MET:O    | 2:AB:208:MET:SD   | 2.53        | 0.67     |
| 6:AT:512:ASN:OD1  | 6:AT:513:GLY:N    | 2.28        | 0.67     |
| 1:BO:115:TYR:CE2  | 1:BO:185:PRO:HG3  | 2.30        | 0.67     |
| 7:AN:726:HIS:ND1  | 7:AN:748:MET:HE3  | 2.10        | 0.67     |
| 3:AQ:333:THR:HG22 | 3:AQ:359:PHE:HZ   | 1.60        | 0.67     |
| 3:DJ:410:LEU:CD2  | 6:DM:562:VAL:CG2  | 2.73        | 0.67     |
| 5:AE:661:ALA:O    | 5:AE:674:LEU:N    | 2.25        | 0.67     |
| 7:CN:712:PHE:CD2  | 7:CN:717:LEU:HD21 | 2.25        | 0.67     |
| 7:CN:717:LEU:HD23 | 7:CN:772:ALA:HA   | 1.75        | 0.67     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BC:342:VAL:HG13 | 3:BC:409:VAL:HG13 | 1.75        | 0.67     |
| 1:DH:182:VAL:HG23 | 2:DI:257:THR:HG21 | 1.74        | 0.67     |
| 3:AC:316:LEU:O    | 3:AC:320:GLU:HG3  | 1.95        | 0.67     |
| 8:DX:855:C:H2'    | 8:DX:856:C:C6     | 2.29        | 0.67     |
| 1:CH:109:MET:O    | 1:CH:113:ILE:CD1  | 2.43        | 0.67     |
| 1:BH:151:ILE:HG22 | 1:BH:153:PRO:CD   | 2.25        | 0.67     |
| 1:BH:135:ASP:OD1  | 1:BH:139:ASN:N    | 2.27        | 0.67     |
| 6:AM:521:VAL:HG12 | 6:AM:522:LYS:N    | 2.09        | 0.67     |
| 2:AP:276:LEU:HD12 | 2:AP:290:LYS:CA   | 2.24        | 0.67     |
| 7:BG:756:ASN:OD1  | 7:BG:757:ILE:N    | 2.28        | 0.67     |
| 8:CY:838:A:C4'    | 8:CY:838:A:OP2    | 2.44        | 0.67     |
| 3:CJ:407:ILE:HA   | 6:CM:568:ASN:ND2  | 2.10        | 0.67     |
| 5:AS:624:TYR:CE2  | 7:AU:761:VAL:CG2  | 2.78        | 0.67     |
| 1:DA:179:SER:HB3  | 2:DB:258:LEU:CD1  | 2.24        | 0.67     |
| 5:DL:690:VAL:HG11 | 5:DS:631:ILE:HD12 | 1.77        | 0.67     |
| 2:AI:220:LYS:HA   | 2:AI:266:ARG:CG   | 2.25        | 0.67     |
| 1:AA:114:ASP:CG   | 4:AD:87:LYS:HE2   | 2.15        | 0.67     |
| 4:BK:47:THR:HG22  | 4:BK:55:VAL:HG13  | 1.71        | 0.66     |
| 1:DH:181:THR:HB   | 2:DI:258:LEU:HD13 | 1.77        | 0.66     |
| 7:AG:762:ILE:HG21 | 7:AG:767:ILE:HD11 | 1.77        | 0.66     |
| 1:DO:132:LYS:HE3  | 4:DR:84:LYS:HB2   | 1.76        | 0.66     |
| 6:BF:539:TYR:CD1  | 8:BV:837:G:O6     | 2.48        | 0.66     |
| 3:BC:412:ASN:HD21 | 6:BF:559:LEU:HD23 | 1.60        | 0.66     |
| 2:BI:230:THR:HG21 | 2:BI:241:LYS:CG   | 2.25        | 0.66     |
| 2:CB:202:LYS:HE3  | 2:CB:204:VAL:HG22 | 1.76        | 0.66     |
| 3:DQ:343:LEU:HG   | 3:DQ:410:LEU:HD12 | 1.77        | 0.66     |
| 1:DA:178:VAL:HG12 | 2:DB:264:ASN:ND2  | 2.10        | 0.66     |
| 2:BB:274:LEU:HD13 | 2:BB:294:ALA:HB2  | 1.76        | 0.66     |
| 2:BI:229:ILE:HA   | 2:BI:240:LEU:HD23 | 1.76        | 0.66     |
| 1:CH:149:ARG:H    | 1:CH:164:LYS:HD2  | 1.58        | 0.66     |
| 8:AX:844:U:H2'    | 8:AX:845:C:C6     | 2.30        | 0.66     |
| 2:BI:287:VAL:O    | 2:BI:291:LYS:CD   | 2.44        | 0.66     |
| 5:CE:639:VAL:O    | 5:CE:639:VAL:HG12 | 1.95        | 0.66     |
| 7:BG:768:ILE:HG22 | 7:BG:769:MET:CE   | 2.26        | 0.66     |
| 5:CL:653:TYR:HD1  | 8:CX:832:U:OP1    | 1.79        | 0.66     |
| 3:CC:363:CYS:HB2  | 6:CF:565:ARG:NH1  | 2.10        | 0.66     |
| 5:DS:673:GLN:O    | 5:DS:674:LEU:HD23 | 1.95        | 0.66     |
| 2:DB:287:VAL:CG1  | 2:DB:290:LYS:HD3  | 2.21        | 0.66     |
| 3:DC:357:LYS:C    | 3:DC:357:LYS:HD3  | 2.16        | 0.66     |
| 2:BB:202:LYS:NZ   | 2:BB:282:ASP:OD2  | 2.28        | 0.66     |
| 3:DJ:374:TRP:CZ2  | 3:DJ:392:LYS:HD3  | 2.29        | 0.66     |
| 7:CG:738:MET:O    | 7:CG:740:LEU:CD1  | 2.42        | 0.66     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:AA:108:LYS:NZ   | 2:AB:230:THR:O    | 2.23        | 0.66     |
| 2:BI:204:VAL:HG22 | 2:BI:236:MET:HE3  | 1.76        | 0.66     |
| 8:AX:814:A:H2'    | 8:AX:815:A:H8     | 1.60        | 0.66     |
| 7:DU:745:CYS:SG   | 7:DU:760:VAL:HG11 | 2.35        | 0.66     |
| 6:BM:579:GLU:O    | 6:BM:583:GLU:HB2  | 1.96        | 0.66     |
| 3:CC:327:GLY:O    | 3:CC:330:SER:OG   | 2.12        | 0.66     |
| 2:CB:279:LEU:C    | 2:CB:279:LEU:HD23 | 2.16        | 0.66     |
| 3:CQ:390:VAL:HG12 | 3:CQ:391:ASN:H    | 1.61        | 0.66     |
| 8:CV:864:A:C2     | 8:CV:865:C:C2     | 2.84        | 0.66     |
| 2:AI:276:LEU:CD2  | 3:AJ:357:LYS:CE   | 2.69        | 0.66     |
| 3:CJ:401:LEU:HD12 | 3:CJ:402:ARG:H    | 1.60        | 0.66     |
| 7:AN:717:LEU:HD23 | 7:AN:772:ALA:CB   | 2.25        | 0.66     |
| 2:DI:204:VAL:HG23 | 2:DI:236:MET:SD   | 2.35        | 0.66     |
| 8:BV:854:A:H3'    | 8:BV:855:C:C5'    | 2.25        | 0.66     |
| 2:BI:229:ILE:CA   | 2:BI:240:LEU:HD22 | 2.25        | 0.66     |
| 5:AS:650:PHE:CB   | 5:AS:656:LEU:HD23 | 2.25        | 0.66     |
| 2:CB:295:VAL:O    | 2:CB:296:ALA:CB   | 2.43        | 0.66     |
| 6:AT:546:ASN:OD1  | 6:AT:546:ASN:O    | 2.13        | 0.66     |
| 8:CV:809:G:H2'    | 8:CV:810:A:C8     | 2.31        | 0.66     |
| 2:DI:286:LYS:HD2  | 3:DJ:357:LYS:NZ   | 2.11        | 0.66     |
| 1:BA:118:ARG:O    | 1:BA:180:MET:HA   | 1.95        | 0.66     |
| 2:AI:276:LEU:HD23 | 3:AJ:357:LYS:HE3  | 1.75        | 0.66     |
| 1:CH:181:THR:CB   | 2:CI:258:LEU:HD13 | 2.22        | 0.66     |
| 8:AX:857:U:O2'    | 8:CV:814:A:H2     | 1.75        | 0.66     |
| 6:DM:506:ASN:HB2  | 6:DM:509:PRO:HG2  | 1.76        | 0.66     |
| 4:AK:19:THR:HB    | 4:AK:72:ILE:HD12  | 1.78        | 0.66     |
| 1:AO:173:ARG:NH2  | 8:AY:834:U:C2     | 2.64        | 0.66     |
| 4:CD:88:ASN:O     | 4:CD:91:GLN:NE2   | 2.27        | 0.66     |
| 3:CQ:359:PHE:HB3  | 3:CQ:365:MET:HG2  | 1.78        | 0.66     |
| 6:CT:567:ASN:O    | 8:CY:838:A:N6     | 2.29        | 0.66     |
| 7:DG:727:VAL:HG13 | 7:DG:746:VAL:O    | 1.96        | 0.66     |
| 6:BM:539:TYR:CE2  | 8:BX:837:G:N1     | 2.64        | 0.66     |
| 1:DA:178:VAL:HB   | 2:DB:264:ASN:HD21 | 1.60        | 0.66     |
| 3:DC:357:LYS:O    | 3:DC:357:LYS:HD3  | 1.96        | 0.66     |
| 1:DO:116:ARG:H    | 1:DO:186:PRO:HD3  | 1.60        | 0.66     |
| 3:BJ:333:THR:OG1  | 3:BJ:359:PHE:HZ   | 1.79        | 0.66     |
| 6:CF:505:LEU:O    | 6:CF:509:PRO:HD2  | 1.95        | 0.66     |
| 5:AL:635:LEU:HD22 | 5:AL:679:LEU:CD1  | 2.25        | 0.66     |
| 2:AP:293:GLU:CG   | 3:AQ:368:GLU:CB   | 2.54        | 0.66     |
| 3:DJ:407:ILE:HG23 | 6:DM:568:ASN:CG   | 2.12        | 0.66     |
| 5:AS:635:LEU:HD12 | 5:AS:636:TYR:H    | 1.60        | 0.66     |
| 5:AS:685:THR:O    | 5:AS:686:LEU:HD23 | 1.95        | 0.66     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:AS:634:TRP:HZ2  | 5:AS:642:ARG:HD2  | 1.61        | 0.66     |
| 6:BF:541:ASN:OD1  | 6:BF:565:ARG:HA   | 1.95        | 0.66     |
| 1:AO:116:ARG:HG2  | 1:AO:187:PRO:CD   | 2.26        | 0.66     |
| 3:BJ:331:VAL:CG1  | 6:BM:563:LEU:HD22 | 2.26        | 0.66     |
| 4:AK:85:SER:HA    | 4:AK:88:ASN:HB2   | 1.77        | 0.66     |
| 1:DA:171:LEU:HD23 | 1:DA:171:LEU:C    | 2.17        | 0.66     |
| 7:AG:709:LEU:HD11 | 7:AG:713:MET:SD   | 2.36        | 0.66     |
| 3:DJ:410:LEU:CD2  | 6:DM:562:VAL:HG22 | 2.26        | 0.66     |
| 2:CI:215:VAL:HG12 | 2:CI:271:PRO:HD3  | 1.76        | 0.66     |
| 3:AJ:347:ARG:NH2  | 3:AJ:404:ASP:O    | 2.29        | 0.66     |
| 8:AV:831:A:OP1    | 8:AV:837:G:O6     | 2.13        | 0.66     |
| 3:AJ:396:ILE:CD1  | 3:AJ:399:MET:HE2  | 2.25        | 0.66     |
| 8:AY:857:U:O2'    | 8:CY:815:A:C2     | 2.49        | 0.66     |
| 4:BR:36:GLU:OE2   | 7:BU:708:GLU:HG3  | 1.96        | 0.66     |
| 5:AL:690:VAL:HG12 | 5:AL:690:VAL:O    | 1.95        | 0.66     |
| 2:AP:286:LYS:HD3  | 3:AQ:357:LYS:HZ1  | 1.61        | 0.66     |
| 6:DM:540:MET:HB2  | 6:DM:566:CYS:SG   | 2.36        | 0.66     |
| 5:BE:688:GLN:NE2  | 7:BG:757:ILE:CB   | 2.59        | 0.66     |
| 3:AJ:408:VAL:HG13 | 6:AM:562:VAL:HG13 | 1.78        | 0.66     |
| 3:BQ:360:ASP:OD1  | 3:BQ:364:ASN:N    | 2.29        | 0.66     |
| 5:BS:624:TYR:CZ   | 7:BU:761:VAL:CG2  | 2.78        | 0.66     |
| 5:BS:684:ILE:HG23 | 5:BS:687:LEU:HD21 | 1.73        | 0.66     |
| 7:CU:743:ASP:OD1  | 7:CU:759:MET:HE2  | 1.96        | 0.66     |
| 1:BO:181:THR:OG1  | 2:BP:255:LEU:HD13 | 1.95        | 0.66     |
| 1:DH:158:GLN:NE2  | 1:DH:160:GLU:HB3  | 2.10        | 0.66     |
| 6:CF:539:TYR:CD2  | 6:CF:566:CYS:HB3  | 2.31        | 0.66     |
| 5:CL:634:TRP:CZ2  | 5:CL:642:ARG:HD3  | 2.31        | 0.66     |
| 4:AR:5:VAL:CG1    | 4:AR:7:ILE:HG22   | 2.26        | 0.66     |
| 6:CF:508:LYS:HB2  | 6:CF:509:PRO:CD   | 2.25        | 0.66     |
| 4:DK:85:SER:O     | 4:DK:89:LYS:HG2   | 1.96        | 0.66     |
| 2:AP:280:LEU:HD23 | 2:AP:286:LYS:HG3  | 1.77        | 0.65     |
| 5:BL:679:LEU:HD23 | 6:BM:571:TYR:HB3  | 1.77        | 0.65     |
| 5:AL:621:ILE:O    | 5:AL:624:TYR:HB3  | 1.96        | 0.65     |
| 5:AE:635:LEU:HD12 | 5:AE:687:LEU:HD23 | 1.78        | 0.65     |
| 6:CT:506:ASN:N    | 6:CT:507:PRO:CD   | 2.59        | 0.65     |
| 6:BF:506:ASN:CB   | 6:BF:507:PRO:CD   | 2.74        | 0.65     |
| 1:CA:130:THR:CG2  | 1:CA:132:LYS:HE2  | 2.26        | 0.65     |
| 1:AA:120:ILE:O    | 1:AA:177:LEU:HD12 | 1.96        | 0.65     |
| 5:CL:621:ILE:HD11 | 7:CN:741:VAL:HG23 | 1.77        | 0.65     |
| 2:AI:267:TYR:CB   | 3:AJ:400:PHE:O    | 2.44        | 0.65     |
| 1:BO:115:TYR:HA   | 1:BO:186:PRO:CD   | 2.25        | 0.65     |
| 1:CA:187:PRO:O    | 1:CA:190:THR:OG1  | 2.14        | 0.65     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:DY:814:A:C6     | 8:DY:815:A:C6     | 2.85        | 0.65     |
| 1:CH:190:THR:O    | 1:CH:194:ARG:HG2  | 1.95        | 0.65     |
| 8:AY:837:G:O3'    | 8:AY:838:A:O4'    | 2.14        | 0.65     |
| 5:CL:678:MET:HB3  | 6:CM:572:ILE:CG2  | 2.21        | 0.65     |
| 6:AF:539:TYR:CE1  | 8:AV:837:G:C6     | 2.84        | 0.65     |
| 7:CU:721:LEU:O    | 7:CU:768:ILE:HD11 | 1.97        | 0.65     |
| 2:BB:270:LEU:HD13 | 3:BC:398:LYS:HE2  | 1.78        | 0.65     |
| 3:DQ:362:HIS:CD2  | 8:DY:836:U:C2     | 2.83        | 0.65     |
| 1:DO:137:HIS:CE1  | 8:DY:834:U:C2     | 2.84        | 0.65     |
| 2:DI:269:ILE:HD13 | 3:DJ:396:ILE:HD13 | 1.77        | 0.65     |
| 7:BG:709:LEU:HD13 | 7:BG:734:PHE:HB3  | 1.78        | 0.65     |
| 2:CI:265:ILE:HD13 | 2:CI:268:PHE:HZ   | 1.60        | 0.65     |
| 5:DL:685:THR:O    | 5:DL:686:LEU:HD23 | 1.96        | 0.65     |
| 2:CI:293:GLU:HB3  | 3:CJ:368:GLU:CD   | 2.15        | 0.65     |
| 3:DC:362:HIS:O    | 3:DC:403:GLY:HA3  | 1.96        | 0.65     |
| 4:BK:5:VAL:HG23   | 4:BK:6:PRO:HD3    | 1.78        | 0.65     |
| 8:AY:853:A:N6     | 8:AY:854:A:C2     | 2.64        | 0.65     |
| 7:AN:726:HIS:ND1  | 7:AN:748:MET:CE   | 2.59        | 0.65     |
| 4:CD:52:ASP:OD2   | 4:CD:54:ARG:NH1   | 2.29        | 0.65     |
| 4:CK:64:ARG:HD3   | 4:CK:67:LYS:HE2   | 1.79        | 0.65     |
| 6:AF:580:GLU:O    | 6:AF:583:GLU:HB3  | 1.97        | 0.65     |
| 2:AP:276:LEU:CD1  | 3:AQ:357:LYS:HE3  | 2.24        | 0.65     |
| 2:DI:229:ILE:HA   | 2:DI:240:LEU:HD23 | 1.78        | 0.65     |
| 3:CQ:365:MET:HE3  | 3:CQ:401:LEU:HD23 | 1.78        | 0.65     |
| 8:CY:838:A:H4'    | 8:CY:838:A:OP2    | 1.96        | 0.65     |
| 7:DU:737:PHE:HE1  | 8:DY:833:U:H5"    | 1.61        | 0.65     |
| 3:AC:340:THR:HG23 | 3:AC:414:LEU:CG   | 2.24        | 0.65     |
| 3:BQ:408:VAL:CG1  | 3:BQ:410:LEU:CD2  | 2.57        | 0.65     |
| 2:AB:229:ILE:HA   | 2:AB:240:LEU:CD2  | 2.26        | 0.65     |
| 1:DO:116:ARG:HG2  | 1:DO:186:PRO:HG3  | 1.79        | 0.65     |
| 1:AH:157:LYS:HD3  | 1:AH:159:ALA:CB   | 2.25        | 0.65     |
| 3:DQ:364:ASN:HD21 | 3:DQ:402:ARG:NH1  | 1.93        | 0.65     |
| 4:DK:28:TYR:OH    | 7:DN:769:MET:CE   | 2.44        | 0.65     |
| 7:BU:707:PRO:O    | 7:BU:711:LYS:HG2  | 1.97        | 0.65     |
| 7:BU:722:ASN:OD1  | 7:BU:723:GLY:N    | 2.28        | 0.65     |
| 4:DD:38:ASN:ND2   | 8:DV:833:U:O4     | 2.30        | 0.65     |
| 5:AE:637:GLU:OE1  | 5:AE:641:MET:HG3  | 1.97        | 0.65     |
| 5:DL:665:HIS:CB   | 5:DL:669:LYS:HB2  | 2.25        | 0.65     |
| 2:AP:290:LYS:O    | 2:AP:294:ALA:N    | 2.25        | 0.65     |
| 1:DH:131:PHE:HE1  | 1:DH:140:LEU:HD22 | 1.62        | 0.65     |
| 3:CJ:410:LEU:HD13 | 6:CM:559:LEU:HD22 | 1.79        | 0.65     |
| 8:BV:815:A:C2'    | 8:BV:816:A:H8     | 2.02        | 0.65     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:AE:686:LEU:HD22 | 7:AG:762:ILE:HG12 | 1.78        | 0.65     |
| 2:DB:232:VAL:HG22 | 2:DB:238:THR:HG23 | 1.79        | 0.65     |
| 3:BC:407:ILE:CD1  | 6:BF:568:ASN:OD1  | 2.44        | 0.65     |
| 2:BB:204:VAL:HA   | 2:BB:236:MET:CE   | 2.26        | 0.65     |
| 7:CU:742:ILE:CG2  | 7:CU:745:CYS:HB3  | 2.27        | 0.65     |
| 2:AP:261:ARG:NH1  | 2:AP:263:ASN:HB3  | 2.12        | 0.65     |
| 2:CP:234:VAL:HG11 | 8:CY:801:G:C6     | 2.32        | 0.65     |
| 4:DD:12:GLU:HB3   | 4:DD:79:ASN:ND2   | 2.12        | 0.65     |
| 8:BV:866:U:H3'    | 8:BV:867:G:H5''   | 1.79        | 0.65     |
| 1:BO:173:ARG:HD2  | 4:BR:68:ILE:O     | 1.97        | 0.65     |
| 1:DA:121:LEU:HD13 | 4:DD:69:ARG:HD2   | 1.76        | 0.65     |
| 5:AS:678:MET:HB3  | 6:AT:572:ILE:HG22 | 1.78        | 0.65     |
| 4:BK:28:TYR:OH    | 7:BN:769:MET:HE3  | 1.96        | 0.65     |
| 6:CM:507:PRO:C    | 6:CM:509:PRO:HD2  | 2.17        | 0.65     |
| 4:AK:16:HIS:O     | 4:AK:31:LYS:HA    | 1.96        | 0.65     |
| 8:AV:850:G:O2'    | 8:CX:817:A:H4'    | 1.97        | 0.65     |
| 2:BP:286:LYS:O    | 3:BQ:357:LYS:HE2  | 1.97        | 0.65     |
| 8:DV:829:C:O2'    | 8:DV:830:A:O5'    | 2.14        | 0.65     |
| 2:AB:229:ILE:HA   | 2:AB:240:LEU:HD22 | 1.78        | 0.65     |
| 2:AP:232:VAL:HG22 | 2:AP:238:THR:CG2  | 2.26        | 0.65     |
| 2:AB:280:LEU:HD12 | 2:BB:295:VAL:CG2  | 2.26        | 0.65     |
| 8:AX:847:A:N6     | 8:CV:814:A:N1     | 2.43        | 0.65     |
| 2:DI:249:ASN:OD1  | 2:DI:250:ARG:HG3  | 1.95        | 0.65     |
| 5:AE:678:MET:HE3  | 6:AF:511:LEU:HD21 | 1.78        | 0.65     |
| 2:CP:293:GLU:HG3  | 3:CQ:368:GLU:HG2  | 1.78        | 0.65     |
| 1:AA:163:GLU:O    | 1:AA:164:LYS:HG3  | 1.96        | 0.65     |
| 8:BX:812:U:O2'    | 8:BX:813:G:H5'    | 1.96        | 0.65     |
| 3:DJ:324:PHE:CD1  | 3:DJ:325:ASN:HB2  | 2.31        | 0.65     |
| 2:BB:261:ARG:NH1  | 2:BB:263:ASN:HB3  | 2.12        | 0.65     |
| 6:BM:539:TYR:CE2  | 8:BX:837:G:C2     | 2.84        | 0.65     |
| 5:CL:635:LEU:HD13 | 5:CL:687:LEU:HD22 | 1.73        | 0.65     |
| 3:CC:374:TRP:HH2  | 3:CC:394:ARG:HB2  | 1.54        | 0.65     |
| 1:DA:178:VAL:CB   | 2:DB:264:ASN:ND2  | 2.60        | 0.65     |
| 2:CI:210:LEU:HB3  | 2:CI:229:ILE:HD12 | 1.77        | 0.65     |
| 2:DB:283:VAL:HG12 | 2:DB:285:PRO:CD   | 2.21        | 0.65     |
| 3:DJ:376:GLU:HG3  | 3:DJ:392:LYS:HB2  | 1.79        | 0.65     |
| 4:DK:8:LYS:O      | 4:DK:12:GLU:HG2   | 1.95        | 0.65     |
| 6:AM:514:LEU:HD23 | 6:AM:514:LEU:C    | 2.17        | 0.65     |
| 2:CI:253:VAL:HG12 | 2:CI:255:LEU:HG   | 1.78        | 0.65     |
| 1:AO:167:LEU:CD1  | 1:AO:170:VAL:HG21 | 2.26        | 0.65     |
| 6:AT:582:GLY:HA2  | 6:AT:585:ARG:HD3  | 1.78        | 0.65     |
| 5:AS:635:LEU:HD22 | 5:AS:679:LEU:HD13 | 1.78        | 0.65     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AJ:407:ILE:HA   | 6:AM:568:ASN:ND2  | 2.11        | 0.65     |
| 3:CQ:390:VAL:HG12 | 3:CQ:391:ASN:N    | 2.12        | 0.65     |
| 1:DH:181:THR:HA   | 2:DI:258:LEU:HA   | 1.78        | 0.65     |
| 5:AL:634:TRP:HZ3  | 5:AL:644:GLU:HB2  | 1.62        | 0.65     |
| 1:DH:173:ARG:NH1  | 4:DK:39:MET:SD    | 2.70        | 0.65     |
| 4:CK:80:ALA:HB3   | 4:CK:81:PRO:CD    | 2.26        | 0.65     |
| 1:BH:120:ILE:O    | 1:BH:178:VAL:HG22 | 1.96        | 0.65     |
| 5:BS:678:MET:CE   | 6:BT:511:LEU:CD2  | 2.75        | 0.65     |
| 5:DS:677:ILE:HG22 | 5:DS:679:LEU:HD21 | 1.69        | 0.65     |
| 7:AU:717:LEU:HD23 | 7:AU:772:ALA:HB2  | 1.79        | 0.65     |
| 6:CF:539:TYR:O    | 6:CF:566:CYS:HB3  | 1.97        | 0.65     |
| 3:CQ:353:LEU:HD12 | 3:CQ:354:GLY:H    | 1.61        | 0.65     |
| 5:DL:633:VAL:CG2  | 5:DL:647:ILE:HG22 | 2.27        | 0.65     |
| 4:CD:27:VAL:O     | 4:CD:48:VAL:HA    | 1.97        | 0.65     |
| 7:BG:705:HIS:HB2  | 7:BG:706:PRO:HD3  | 1.78        | 0.65     |
| 4:BK:47:THR:HG23  | 4:BK:55:VAL:HG11  | 1.67        | 0.65     |
| 2:DP:277:ASP:CB   | 2:DP:290:LYS:HE2  | 2.26        | 0.65     |
| 4:BK:5:VAL:CG2    | 4:BK:6:PRO:HD3    | 2.26        | 0.65     |
| 5:DS:656:LEU:CD1  | 5:DS:687:LEU:HD11 | 2.20        | 0.65     |
| 7:CN:719:LEU:HD23 | 7:CN:767:ILE:CD1  | 2.27        | 0.65     |
| 1:BO:169:LEU:HD23 | 4:BR:73:LEU:HB2   | 1.79        | 0.65     |
| 7:CU:742:ILE:HG22 | 7:CU:745:CYS:HB3  | 1.77        | 0.65     |
| 5:DS:688:GLN:HB3  | 7:DU:760:VAL:HG23 | 1.79        | 0.65     |
| 2:DB:216:THR:HG23 | 2:DB:225:VAL:O    | 1.97        | 0.65     |
| 3:BQ:375:THR:HG23 | 3:BQ:390:VAL:HG12 | 1.79        | 0.65     |
| 1:CO:140:LEU:HD11 | 1:CO:180:MET:CE   | 2.26        | 0.64     |
| 7:BN:719:LEU:HD21 | 7:BN:740:LEU:HD11 | 1.78        | 0.64     |
| 4:AK:20:CYS:SG    | 4:AK:71:LEU:HD21  | 2.36        | 0.64     |
| 3:DQ:410:LEU:CB   | 6:DT:559:LEU:HD22 | 2.26        | 0.64     |
| 2:AI:205:ARG:HG2  | 2:AI:208:MET:HE3  | 1.79        | 0.64     |
| 5:AL:636:TYR:CD2  | 5:AL:685:THR:CG2  | 2.80        | 0.64     |
| 3:DQ:370:VAL:HB   | 3:DQ:399:MET:HE1  | 1.79        | 0.64     |
| 2:BB:270:LEU:HD11 | 3:BC:400:PHE:HB2  | 1.77        | 0.64     |
| 2:BB:279:LEU:HB3  | 2:BB:283:VAL:CG2  | 2.27        | 0.64     |
| 2:BB:283:VAL:HG11 | 2:BB:286:LYS:HE3  | 1.79        | 0.64     |
| 3:DQ:331:VAL:CG2  | 6:DT:543:GLN:HE22 | 2.10        | 0.64     |
| 1:AH:157:LYS:CD   | 1:AH:159:ALA:HB3  | 2.26        | 0.64     |
| 2:BI:206:PHE:CD1  | 2:BI:279:LEU:HB2  | 2.31        | 0.64     |
| 4:DR:46:ILE:CD1   | 4:DR:61:VAL:CG2   | 2.75        | 0.64     |
| 1:BH:154:LYS:HB3  | 1:BH:159:ALA:HB2  | 1.79        | 0.64     |
| 2:BB:230:THR:HG21 | 2:BB:241:LYS:HG3  | 1.79        | 0.64     |
| 1:BO:108:LYS:O    | 1:BO:112:HIS:ND1  | 2.30        | 0.64     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CM:530:LYS:O    | 6:CM:548:GLU:N    | 2.29        | 0.64     |
| 6:CF:561:GLU:O    | 6:CF:562:VAL:HG23 | 1.98        | 0.64     |
| 4:BK:55:VAL:HG12  | 4:BK:57:GLN:NE2   | 2.12        | 0.64     |
| 2:DP:270:LEU:HB2  | 3:DQ:398:LYS:HB3  | 1.78        | 0.64     |
| 3:BJ:348:ASN:OD1  | 8:BX:840:A:H4'    | 1.97        | 0.64     |
| 6:AF:566:CYS:SG   | 6:AF:569:VAL:HB   | 2.38        | 0.64     |
| 3:CC:348:ASN:OD1  | 8:CV:840:A:O3'    | 2.14        | 0.64     |
| 5:BS:664:ILE:HA   | 5:BS:670:SER:HA   | 1.78        | 0.64     |
| 8:BY:867:G:O2'    | 8:BY:868:G:OP1    | 2.15        | 0.64     |
| 3:AC:316:LEU:CD1  | 3:AC:337:LYS:HZ1  | 2.10        | 0.64     |
| 8:AY:809:G:C6     | 8:AY:810:A:N6     | 2.66        | 0.64     |
| 5:BL:644:GLU:O    | 5:BL:661:ALA:HA   | 1.97        | 0.64     |
| 4:CR:6:PRO:O      | 4:CR:9:VAL:HG22   | 1.96        | 0.64     |
| 8:CY:808:C:H2'    | 8:CY:809:G:C8     | 2.31        | 0.64     |
| 1:AH:160:GLU:HG3  | 8:AX:848:U:H1'    | 1.78        | 0.64     |
| 4:BK:6:PRO:O      | 4:BK:9:VAL:HG12   | 1.96        | 0.64     |
| 2:BP:202:LYS:HE3  | 2:BP:204:VAL:CG2  | 2.26        | 0.64     |
| 2:DB:207:LEU:HB3  | 2:DB:232:VAL:HG11 | 1.79        | 0.64     |
| 7:CU:743:ASP:OD1  | 7:CU:759:MET:CE   | 2.46        | 0.64     |
| 3:BC:342:VAL:HG21 | 3:BC:356:VAL:CG2  | 2.27        | 0.64     |
| 3:BC:409:VAL:O    | 3:BC:410:LEU:HD23 | 1.96        | 0.64     |
| 4:BD:12:GLU:HG3   | 4:BD:79:ASN:CB    | 2.27        | 0.64     |
| 3:DQ:328:PRO:HB3  | 6:DT:563:LEU:HD13 | 1.78        | 0.64     |
| 2:BP:294:ALA:O    | 2:BP:295:VAL:CG2  | 2.44        | 0.64     |
| 3:AJ:344:ILE:HD11 | 3:AJ:365:MET:SD   | 2.37        | 0.64     |
| 1:BH:154:LYS:HE2  | 1:BH:159:ALA:HB2  | 1.79        | 0.64     |
| 8:BY:814:A:H2'    | 8:BY:815:A:C8     | 2.33        | 0.64     |
| 2:AP:277:ASP:HB3  | 2:AP:290:LYS:HZ2  | 1.62        | 0.64     |
| 2:DI:276:LEU:HD12 | 2:DI:290:LYS:CA   | 2.27        | 0.64     |
| 8:AX:839:C:O2'    | 8:AX:840:A:C5'    | 2.46        | 0.64     |
| 2:CB:293:GLU:CG   | 3:CC:368:GLU:HB3  | 2.27        | 0.64     |
| 6:CF:565:ARG:CZ   | 8:CV:837:G:C2     | 2.80        | 0.64     |
| 5:BL:642:ARG:CG   | 5:BL:664:ILE:HB   | 2.28        | 0.64     |
| 3:AC:367:LEU:HB2  | 3:AC:370:VAL:HG21 | 1.80        | 0.64     |
| 5:AL:635:LEU:HD22 | 5:AL:679:LEU:HD12 | 1.78        | 0.64     |
| 1:AO:167:LEU:HD13 | 1:AO:170:VAL:HG21 | 1.78        | 0.64     |
| 1:DA:116:ARG:HB2  | 1:DA:184:GLY:HA3  | 1.78        | 0.64     |
| 4:BK:47:THR:OG1   | 4:BK:57:GLN:NE2   | 2.31        | 0.64     |
| 2:BI:280:LEU:HD22 | 2:BI:286:LYS:HG2  | 1.78        | 0.64     |
| 3:BC:408:VAL:HG13 | 6:BF:562:VAL:HG13 | 1.79        | 0.64     |
| 6:BF:564:ILE:HG21 | 6:BF:569:VAL:CG2  | 2.28        | 0.64     |
| 5:DE:674:LEU:HB2  | 5:DE:677:ILE:HD11 | 1.79        | 0.64     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:DL:633:VAL:HG21 | 5:DL:647:ILE:CG2  | 2.27        | 0.64     |
| 5:AE:609:LYS:NZ   | 7:AG:743:ASP:OD1  | 2.30        | 0.64     |
| 5:BS:628:ARG:HG2  | 5:BS:631:ILE:HD12 | 1.77        | 0.64     |
| 1:CH:117:MET:SD   | 1:CH:182:VAL:HG22 | 2.37        | 0.64     |
| 3:DJ:407:ILE:HG22 | 3:DJ:408:VAL:HG23 | 1.80        | 0.64     |
| 2:CI:286:LYS:O    | 2:CI:290:LYS:N    | 2.23        | 0.64     |
| 8:AX:839:C:O2'    | 8:AX:840:A:H5'    | 1.98        | 0.64     |
| 3:DC:407:ILE:HD11 | 6:DF:525:TRP:HZ2  | 1.59        | 0.64     |
| 2:BP:286:LYS:HZ1  | 3:BQ:358:ALA:CB   | 2.08        | 0.64     |
| 5:AS:621:ILE:HG21 | 7:AU:741:VAL:HG23 | 1.78        | 0.64     |
| 5:BE:677:ILE:CG2  | 5:BE:679:LEU:CD2  | 2.75        | 0.64     |
| 6:AM:519:VAL:HG21 | 6:AM:572:ILE:HD11 | 1.78        | 0.64     |
| 7:BG:709:LEU:O    | 7:BG:713:MET:HG2  | 1.97        | 0.64     |
| 6:DT:570:LEU:HD23 | 6:DT:571:TYR:CE2  | 2.33        | 0.64     |
| 4:AR:42:GLN:HG2   | 4:AR:60:GLN:HE21  | 1.61        | 0.64     |
| 6:DT:508:LYS:HB2  | 6:DT:509:PRO:HD3  | 1.79        | 0.64     |
| 2:AP:286:LYS:HZ2  | 3:AQ:357:LYS:HZ2  | 1.46        | 0.64     |
| 6:CM:539:TYR:CD1  | 8:CX:831:A:O4'    | 2.51        | 0.64     |
| 3:AC:411:ARG:NH1  | 3:AC:414:LEU:O    | 2.31        | 0.64     |
| 2:BP:210:LEU:CD1  | 2:BP:270:LEU:HD22 | 2.27        | 0.64     |
| 1:CH:137:HIS:CE1  | 8:CX:834:U:C2     | 2.86        | 0.64     |
| 3:BC:409:VAL:HB   | 6:BF:563:LEU:HB3  | 1.79        | 0.64     |
| 4:BK:59:GLU:CB    | 7:BN:775:ARG:HH21 | 2.08        | 0.64     |
| 3:BJ:333:THR:HA   | 3:BJ:359:PHE:CE2  | 2.33        | 0.64     |
| 2:AB:274:LEU:HB2  | 3:AC:398:LYS:NZ   | 2.13        | 0.64     |
| 3:BJ:335:SER:HB3  | 3:BJ:356:VAL:HG21 | 1.80        | 0.64     |
| 6:BF:580:GLU:O    | 6:BF:584:MET:HG3  | 1.98        | 0.64     |
| 6:AF:508:LYS:HB2  | 6:AF:509:PRO:HD3  | 1.79        | 0.64     |
| 5:DL:678:MET:HE1  | 6:DM:511:LEU:HD23 | 1.78        | 0.64     |
| 3:BQ:408:VAL:HG12 | 3:BQ:410:LEU:HD23 | 1.76        | 0.64     |
| 7:CN:769:MET:C    | 7:CN:770:LEU:HD12 | 2.18        | 0.64     |
| 5:CL:621:ILE:CD1  | 7:CN:741:VAL:CG2  | 2.67        | 0.64     |
| 6:BF:518:PRO:O    | 6:BF:519:VAL:HG13 | 1.98        | 0.64     |
| 5:DS:686:LEU:HD22 | 7:DU:762:ILE:HG12 | 1.79        | 0.64     |
| 4:AK:19:THR:CG2   | 4:AK:72:ILE:HD12  | 2.28        | 0.64     |
| 2:CI:265:ILE:HD13 | 2:CI:268:PHE:CZ   | 2.32        | 0.64     |
| 4:CR:33:ILE:HD11  | 4:CR:44:SER:OG    | 1.98        | 0.64     |
| 5:AE:640:ASN:ND2  | 5:AE:666:SER:OG   | 2.30        | 0.64     |
| 1:DH:113:ILE:HG22 | 1:DH:114:ASP:OD1  | 1.96        | 0.64     |
| 8:AV:847:A:N6     | 8:CX:815:A:N1     | 2.45        | 0.64     |
| 1:BA:118:ARG:HH11 | 1:BA:126:ILE:HG21 | 1.63        | 0.64     |
| 3:BJ:347:ARG:NH1  | 8:BX:839:C:O3'    | 2.31        | 0.64     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:CB:218:GLU:OE1  | 2:CB:267:TYR:CE2  | 2.50        | 0.64     |
| 5:CE:655:ASN:O    | 5:CE:656:LEU:HD23 | 1.97        | 0.64     |
| 3:AC:370:VAL:HB   | 3:AC:399:MET:HE3  | 1.80        | 0.64     |
| 4:DR:46:ILE:HD11  | 4:DR:61:VAL:HG13  | 1.80        | 0.64     |
| 1:BO:150:LYS:C    | 1:BO:151:ILE:HD12 | 2.19        | 0.64     |
| 3:CC:409:VAL:HB   | 6:CF:563:LEU:HB3  | 1.79        | 0.64     |
| 2:CP:230:THR:HG21 | 2:CP:241:LYS:HB2  | 1.80        | 0.64     |
| 4:BK:47:THR:HG23  | 4:BK:55:VAL:HG12  | 1.74        | 0.64     |
| 6:CT:567:ASN:OD1  | 6:CT:568:ASN:ND2  | 2.31        | 0.64     |
| 2:DI:237:ASN:ND2  | 8:DX:835:U:H3     | 1.93        | 0.64     |
| 3:CJ:328:PRO:O    | 3:CJ:331:VAL:HG22 | 1.97        | 0.64     |
| 2:BP:276:LEU:HD11 | 2:BP:293:GLU:OE1  | 1.98        | 0.64     |
| 5:BS:651:ASP:HB3  | 6:BT:507:PRO:HG2  | 1.78        | 0.64     |
| 7:CN:719:LEU:HD21 | 7:CN:740:LEU:HD22 | 1.80        | 0.64     |
| 7:CG:718:SER:C    | 7:CG:719:LEU:HD12 | 2.17        | 0.64     |
| 4:DK:12:GLU:HG3   | 4:DK:79:ASN:HB3   | 1.80        | 0.64     |
| 4:CK:27:VAL:O     | 4:CK:48:VAL:HA    | 1.97        | 0.64     |
| 4:BK:19:THR:HG23  | 4:BK:29:ARG:CG    | 2.28        | 0.64     |
| 5:BE:630:ARG:HH21 | 7:CG:744:GLU:CD   | 2.00        | 0.64     |
| 3:AQ:333:THR:HG22 | 3:AQ:359:PHE:CZ   | 2.33        | 0.63     |
| 7:CU:762:ILE:HG21 | 7:CU:767:ILE:HD11 | 1.81        | 0.63     |
| 2:BB:276:LEU:HD23 | 2:BB:279:LEU:HG   | 1.79        | 0.63     |
| 3:DJ:352:LEU:HD12 | 3:DJ:401:LEU:HD21 | 1.80        | 0.63     |
| 1:CA:181:THR:CG2  | 2:CB:258:LEU:CD1  | 2.74        | 0.63     |
| 1:CH:118:ARG:HB3  | 1:CH:181:THR:O    | 1.98        | 0.63     |
| 3:DJ:344:ILE:O    | 3:DJ:351:LYS:HA   | 1.98        | 0.63     |
| 7:CG:725:ARG:CG   | 7:CG:749:ALA:HB2  | 2.25        | 0.63     |
| 3:AC:320:GLU:OE2  | 3:AC:337:LYS:NZ   | 2.31        | 0.63     |
| 8:BX:858:A:H5'    | 8:DV:815:A:N3     | 2.13        | 0.63     |
| 1:BO:115:TYR:CE2  | 1:BO:185:PRO:HB3  | 2.33        | 0.63     |
| 5:CE:639:VAL:O    | 5:CE:639:VAL:CG1  | 2.46        | 0.63     |
| 5:AL:628:ARG:HD2  | 5:AL:633:VAL:HG22 | 1.79        | 0.63     |
| 4:CK:5:VAL:HG22   | 4:CK:6:PRO:HD3    | 1.80        | 0.63     |
| 8:AY:863:G:N3     | 8:AY:864:A:C8     | 2.66        | 0.63     |
| 7:BU:749:ALA:HB3  | 7:BU:754:GLN:OE1  | 1.98        | 0.63     |
| 6:CT:523:LEU:O    | 6:CT:525:TRP:N    | 2.31        | 0.63     |
| 2:BP:209:LYS:O    | 2:BP:279:LEU:HD21 | 1.98        | 0.63     |
| 5:DL:634:TRP:CZ2  | 5:DL:642:ARG:CD   | 2.76        | 0.63     |
| 4:DK:77:LEU:HD11  | 4:DK:79:ASN:HD22  | 1.64        | 0.63     |
| 1:BO:120:ILE:CD1  | 1:BO:179:SER:HB2  | 2.28        | 0.63     |
| 4:DK:28:TYR:OH    | 7:DN:769:MET:SD   | 2.54        | 0.63     |
| 2:AI:267:TYR:HB2  | 3:AJ:400:PHE:O    | 1.97        | 0.63     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:AL:633:VAL:HG21 | 5:AL:647:ILE:CG2  | 2.28        | 0.63     |
| 4:BR:68:ILE:HD13  | 4:BR:71:LEU:HD11  | 1.80        | 0.63     |
| 5:AE:665:HIS:CD2  | 5:AE:667:LYS:HG2  | 2.33        | 0.63     |
| 2:AI:284:GLU:CB   | 2:AI:285:PRO:HD3  | 2.28        | 0.63     |
| 1:CO:147:GLU:O    | 1:CO:164:LYS:HB2  | 1.98        | 0.63     |
| 2:DI:276:LEU:HD12 | 2:DI:290:LYS:HB3  | 1.81        | 0.63     |
| 2:DP:286:LYS:HD3  | 3:DQ:357:LYS:HE3  | 1.79        | 0.63     |
| 5:CL:685:THR:HG22 | 5:CL:686:LEU:HG   | 1.79        | 0.63     |
| 5:DE:661:ALA:HB3  | 5:DE:677:ILE:HD12 | 1.79        | 0.63     |
| 5:BL:664:ILE:HG22 | 5:BL:665:HIS:H    | 1.62        | 0.63     |
| 8:BY:838:A:OP2    | 8:BY:838:A:H4'    | 1.97        | 0.63     |
| 3:BJ:342:VAL:HG11 | 3:BJ:409:VAL:HG13 | 1.79        | 0.63     |
| 8:CY:807:A:H2'    | 8:CY:808:C:H5''   | 1.79        | 0.63     |
| 8:BY:826:U:H2'    | 8:BY:827:G:C8     | 2.33        | 0.63     |
| 8:DX:842:U:H2'    | 8:DX:843:C:H5'    | 1.79        | 0.63     |
| 2:DI:203:LEU:CD1  | 3:DJ:358:ALA:HB1  | 2.28        | 0.63     |
| 6:AT:524:LYS:N    | 6:AT:570:LEU:HG   | 2.13        | 0.63     |
| 3:CQ:363:CYS:SG   | 6:CT:565:ARG:HD3  | 2.39        | 0.63     |
| 2:AI:280:LEU:CD2  | 2:AI:286:LYS:HG2  | 2.28        | 0.63     |
| 6:CF:519:VAL:CA   | 6:CF:575:VAL:HG23 | 2.29        | 0.63     |
| 2:BP:236:MET:CE   | 8:BY:836:U:N3     | 2.62        | 0.63     |
| 8:DY:830:A:N6     | 8:DY:836:U:H5'    | 2.13        | 0.63     |
| 3:BJ:333:THR:N    | 3:BJ:359:PHE:CZ   | 2.67        | 0.63     |
| 2:BP:240:LEU:HB3  | 2:BP:243:VAL:HG21 | 1.80        | 0.63     |
| 4:AK:63:ILE:CD1   | 7:AN:769:MET:HE1  | 2.29        | 0.63     |
| 1:DA:156:SER:OG   | 8:DV:849:G:H5''   | 1.97        | 0.63     |
| 4:AD:20:CYS:SG    | 4:AD:71:LEU:CD2   | 2.86        | 0.63     |
| 1:BA:137:HIS:CE1  | 8:BV:834:U:C2     | 2.85        | 0.63     |
| 3:BJ:328:PRO:HB3  | 3:BJ:361:ARG:NH1  | 2.14        | 0.63     |
| 3:CQ:340:THR:HG23 | 3:CQ:414:LEU:HB2  | 1.81        | 0.63     |
| 6:AM:552:ASP:HA   | 8:AX:868:G:O3'    | 1.99        | 0.63     |
| 6:DM:522:LYS:HD2  | 6:DM:528:GLU:OE2  | 1.97        | 0.63     |
| 6:CM:521:VAL:HG22 | 6:CM:572:ILE:HG13 | 1.81        | 0.63     |
| 2:DP:274:LEU:HD11 | 2:DP:279:LEU:HD11 | 1.80        | 0.63     |
| 8:AV:866:U:H3'    | 8:AV:867:G:H5''   | 1.81        | 0.63     |
| 7:BU:767:ILE:HG21 | 7:BU:770:LEU:HD11 | 1.80        | 0.63     |
| 5:CS:679:LEU:HD23 | 6:CT:571:TYR:HB3  | 1.80        | 0.63     |
| 5:DS:674:LEU:HB2  | 5:DS:677:ILE:HD11 | 1.79        | 0.63     |
| 5:BS:642:ARG:NH2  | 5:BS:668:THR:HA   | 2.13        | 0.63     |
| 2:CB:223:THR:HG23 | 2:CB:247:LEU:HD23 | 1.80        | 0.63     |
| 8:CY:814:A:C2     | 8:CY:815:A:C5     | 2.87        | 0.63     |
| 5:BS:652:GLU:HG2  | 6:BT:504:PRO:HD3  | 1.79        | 0.63     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CM:541:ASN:OD1  | 6:CM:566:CYS:N    | 2.26        | 0.63     |
| 5:BS:684:ILE:HG23 | 5:BS:687:LEU:CD2  | 2.28        | 0.63     |
| 6:CF:524:LYS:HA   | 6:CF:570:LEU:HD21 | 1.79        | 0.63     |
| 2:DI:247:LEU:HD21 | 2:DI:250:ARG:HH11 | 1.64        | 0.63     |
| 4:CR:8:LYS:HB2    | 4:CR:79:ASN:HD21  | 1.64        | 0.63     |
| 6:AT:578:GLU:OE1  | 6:AT:578:GLU:N    | 2.32        | 0.63     |
| 5:AL:654:MET:SD   | 7:AN:763:ARG:HD2  | 2.39        | 0.63     |
| 3:DJ:388:LYS:N    | 3:DJ:389:PRO:CD   | 2.62        | 0.63     |
| 5:BE:688:GLN:HG3  | 7:BG:760:VAL:HG23 | 1.79        | 0.63     |
| 2:BP:210:LEU:HD21 | 2:BP:279:LEU:HD11 | 1.77        | 0.63     |
| 5:BL:620:LEU:HD22 | 7:BN:735:ASP:HB2  | 1.80        | 0.63     |
| 6:CT:533:LEU:HD11 | 6:CT:535:SER:O    | 1.98        | 0.63     |
| 5:CS:642:ARG:HG3  | 5:CS:664:ILE:HB   | 1.81        | 0.63     |
| 5:CS:621:ILE:CD1  | 7:CU:741:VAL:HG21 | 2.27        | 0.63     |
| 3:CJ:327:GLY:O    | 3:CJ:330:SER:CB   | 2.47        | 0.63     |
| 8:CY:808:C:H2'    | 8:CY:809:G:H8     | 1.63        | 0.63     |
| 8:CX:828:G:H2'    | 8:CX:829:C:O5'    | 1.99        | 0.63     |
| 1:BA:120:ILE:O    | 1:BA:177:LEU:HD12 | 1.98        | 0.63     |
| 5:BE:664:ILE:HA   | 5:BE:670:SER:HA   | 1.79        | 0.63     |
| 3:AJ:347:ARG:HA   | 6:AM:525:TRP:HH2  | 1.64        | 0.63     |
| 5:BS:624:TYR:HD1  | 5:BS:625:LEU:HD23 | 1.64        | 0.63     |
| 3:DC:332:LEU:CD1  | 3:DC:359:PHE:HE1  | 2.11        | 0.63     |
| 2:CI:212:HIS:HA   | 2:CI:229:ILE:O    | 1.98        | 0.63     |
| 8:BV:837:G:O3'    | 8:BV:838:A:O4'    | 2.16        | 0.63     |
| 3:AC:392:LYS:HA   | 6:AT:554:ALA:HB2  | 1.80        | 0.63     |
| 8:AX:847:A:H61    | 8:CV:814:A:H61    | 1.47        | 0.63     |
| 1:DO:180:MET:HB2  | 2:DP:259:SER:HB3  | 1.78        | 0.63     |
| 3:AJ:370:VAL:HG11 | 3:AJ:399:MET:CE   | 2.28        | 0.63     |
| 3:BC:359:PHE:HA   | 3:BC:364:ASN:O    | 1.99        | 0.63     |
| 2:BI:254:GLN:O    | 2:BI:255:LEU:HD23 | 1.99        | 0.63     |
| 3:AC:385:LYS:HE3  | 5:AS:667:LYS:HE2  | 1.80        | 0.63     |
| 6:CM:567:ASN:OD1  | 6:CM:568:ASN:ND2  | 2.31        | 0.63     |
| 2:CB:207:LEU:CD1  | 2:CB:236:MET:HG3  | 2.29        | 0.63     |
| 8:CV:839:C:N4     | 8:CV:867:G:O6     | 2.31        | 0.63     |
| 2:AB:206:PHE:O    | 2:AB:210:LEU:HG   | 1.99        | 0.63     |
| 2:BI:207:LEU:HB3  | 2:BI:232:VAL:HG11 | 1.81        | 0.63     |
| 1:DO:137:HIS:NE2  | 8:DY:834:U:H3'    | 2.14        | 0.63     |
| 7:AU:748:MET:HE2  | 7:AU:752:GLY:C    | 2.19        | 0.63     |
| 1:BO:195:VAL:O    | 1:BO:195:VAL:HG12 | 1.99        | 0.63     |
| 5:CL:683:ASN:ND2  | 6:CM:570:LEU:HD22 | 2.14        | 0.62     |
| 8:CV:847:A:O2'    | 8:CV:848:U:C6     | 2.51        | 0.62     |
| 6:AF:564:ILE:HG21 | 6:AF:569:VAL:HG23 | 1.80        | 0.62     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AC:361:ARG:CZ   | 8:AV:830:A:OP2    | 2.47        | 0.62     |
| 3:DJ:366:VAL:CG2  | 3:DJ:400:PHE:CE1  | 2.81        | 0.62     |
| 5:CS:690:VAL:HG12 | 5:CS:690:VAL:O    | 1.97        | 0.62     |
| 3:CJ:368:GLU:HG2  | 3:CJ:398:LYS:HB2  | 1.80        | 0.62     |
| 4:BK:48:VAL:CG1   | 4:BK:56:ALA:HB3   | 2.29        | 0.62     |
| 5:CE:621:ILE:HD12 | 7:CG:741:VAL:CG2  | 2.29        | 0.62     |
| 2:CB:223:THR:HG21 | 2:CB:247:LEU:CD2  | 2.29        | 0.62     |
| 4:AR:62:TYR:O     | 7:AU:769:MET:HA   | 1.99        | 0.62     |
| 1:AH:154:LYS:CB   | 8:CV:813:G:H5'    | 2.28        | 0.62     |
| 4:AD:40:ASN:ND2   | 8:AV:833:U:O4     | 2.27        | 0.62     |
| 5:BE:630:ARG:NH2  | 7:CG:744:GLU:OE2  | 2.29        | 0.62     |
| 3:CQ:391:ASN:CG   | 3:CQ:392:LYS:H    | 2.02        | 0.62     |
| 1:CH:132:LYS:HB2  | 4:CK:84:LYS:HD3   | 1.80        | 0.62     |
| 6:BM:524:LYS:HB3  | 8:BX:838:A:N1     | 2.14        | 0.62     |
| 3:AQ:374:TRP:HE1  | 3:AQ:391:ASN:HD22 | 1.47        | 0.62     |
| 2:DB:293:GLU:HG3  | 3:DC:368:GLU:HG2  | 1.80        | 0.62     |
| 1:BA:140:LEU:O    | 1:BA:171:LEU:HA   | 2.00        | 0.62     |
| 2:BB:208:MET:HA   | 2:BB:232:VAL:HB   | 1.81        | 0.62     |
| 3:AJ:333:THR:HA   | 3:AJ:359:PHE:CZ   | 2.34        | 0.62     |
| 1:AH:115:TYR:CG   | 1:AH:185:PRO:HG3  | 2.33        | 0.62     |
| 6:DM:506:ASN:HB3  | 6:DM:509:PRO:HD2  | 1.80        | 0.62     |
| 3:BQ:387:SER:HB3  | 3:BQ:389:PRO:HD2  | 1.80        | 0.62     |
| 7:AN:713:MET:HA   | 7:AN:731:LEU:HD23 | 1.81        | 0.62     |
| 3:DJ:315:GLU:OE2  | 3:DJ:337:LYS:NZ   | 2.33        | 0.62     |
| 2:DI:265:ILE:HD13 | 2:DI:268:PHE:CZ   | 2.33        | 0.62     |
| 7:BN:737:PHE:O    | 7:BN:738:MET:HB2  | 2.00        | 0.62     |
| 6:CM:539:TYR:CD2  | 6:CM:566:CYS:HB3  | 2.35        | 0.62     |
| 3:CJ:329:LEU:HA   | 3:CJ:359:PHE:HE2  | 1.63        | 0.62     |
| 2:AI:276:LEU:HB3  | 3:AJ:357:LYS:CE   | 2.29        | 0.62     |
| 4:DR:80:ALA:CB    | 4:DR:81:PRO:HD3   | 2.28        | 0.62     |
| 8:AX:835:U:O2'    | 8:AX:836:U:H4'    | 1.99        | 0.62     |
| 3:DJ:341:GLN:HB3  | 3:DJ:355:ARG:HH11 | 1.64        | 0.62     |
| 5:AL:677:ILE:HG23 | 6:AM:572:ILE:O    | 1.98        | 0.62     |
| 4:DD:12:GLU:HG3   | 4:DD:79:ASN:HB3   | 1.81        | 0.62     |
| 6:CF:528:GLU:OE1  | 6:CF:528:GLU:N    | 2.33        | 0.62     |
| 5:AS:690:VAL:O    | 5:AS:690:VAL:HG12 | 1.98        | 0.62     |
| 4:DD:32:LEU:HD11  | 4:DD:41:CYS:SG    | 2.39        | 0.62     |
| 1:CO:119:CYS:SG   | 1:CO:140:LEU:CD1  | 2.87        | 0.62     |
| 1:CO:119:CYS:SG   | 1:CO:140:LEU:HD12 | 2.38        | 0.62     |
| 2:DI:280:LEU:CD2  | 2:DI:286:LYS:CE   | 2.71        | 0.62     |
| 6:AM:558:HIS:C    | 6:AM:559:LEU:HD12 | 2.19        | 0.62     |
| 2:AI:280:LEU:CD2  | 2:AI:286:LYS:CE   | 2.68        | 0.62     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:CE:661:ALA:CB   | 5:CE:677:ILE:HD12 | 2.29        | 0.62     |
| 3:AJ:328:PRO:O    | 3:AJ:331:VAL:CG2  | 2.47        | 0.62     |
| 3:AJ:331:VAL:CG1  | 6:AM:543:GLN:OE1  | 2.47        | 0.62     |
| 8:AY:830:A:N6     | 8:AY:836:U:O5'    | 2.32        | 0.62     |
| 6:AM:539:TYR:O    | 6:AM:539:TYR:CD1  | 2.52        | 0.62     |
| 3:DQ:388:LYS:N    | 3:DQ:389:PRO:CD   | 2.61        | 0.62     |
| 3:CJ:338:ASN:HB3  | 3:CJ:340:THR:HG23 | 1.80        | 0.62     |
| 2:CI:226:HIS:O    | 2:CI:243:VAL:HA   | 1.98        | 0.62     |
| 2:AP:293:GLU:CG   | 3:AQ:368:GLU:HG2  | 2.29        | 0.62     |
| 6:DM:524:LYS:HB2  | 8:DX:838:A:H61    | 1.64        | 0.62     |
| 6:DM:539:TYR:CE2  | 8:DX:837:G:N2     | 2.68        | 0.62     |
| 6:CT:521:VAL:HG22 | 6:CT:572:ILE:HG13 | 1.81        | 0.62     |
| 5:CL:674:LEU:HD13 | 6:CM:573:ARG:HD2  | 1.81        | 0.62     |
| 4:AK:63:ILE:CD1   | 7:AN:769:MET:CE   | 2.77        | 0.62     |
| 1:BH:191:GLY:O    | 4:BK:91:GLN:OE1   | 2.18        | 0.62     |
| 5:AL:641:MET:C    | 5:AL:642:ARG:HG3  | 2.19        | 0.62     |
| 3:BQ:333:THR:HG22 | 3:BQ:359:PHE:CZ   | 2.35        | 0.62     |
| 6:DT:550:TYR:CE1  | 6:DT:555:LEU:HD13 | 2.34        | 0.62     |
| 7:DN:722:ASN:HA   | 7:DN:768:ILE:HD11 | 1.81        | 0.62     |
| 6:DT:551:ILE:O    | 6:DT:554:ALA:N    | 2.28        | 0.62     |
| 3:CQ:342:VAL:HG22 | 3:CQ:411:ARG:HG2  | 1.80        | 0.62     |
| 1:CH:143:CYS:SG   | 4:CK:84:LYS:HD2   | 2.40        | 0.62     |
| 2:DP:274:LEU:HD12 | 2:DP:275:PRO:HD2  | 1.81        | 0.62     |
| 3:BQ:407:ILE:HD11 | 6:BT:525:TRP:CZ3  | 2.35        | 0.62     |
| 5:AE:686:LEU:O    | 5:AE:687:LEU:HD23 | 1.99        | 0.62     |
| 2:CB:262:GLY:HA2  | 2:CB:265:ILE:HD12 | 1.82        | 0.62     |
| 4:BD:12:GLU:HG3   | 4:BD:79:ASN:HB2   | 1.80        | 0.62     |
| 6:DT:565:ARG:CZ   | 8:DY:837:G:C2     | 2.83        | 0.62     |
| 4:AD:83:LEU:HD23  | 4:AD:86:MET:HE1   | 1.79        | 0.62     |
| 8:BY:866:U:H3'    | 8:BY:867:G:C5'    | 2.28        | 0.62     |
| 6:DF:514:LEU:O    | 6:DF:517:LYS:CB   | 2.48        | 0.62     |
| 2:CB:286:LYS:HE2  | 3:CC:336:VAL:HG12 | 1.81        | 0.62     |
| 4:BR:32:LEU:HD21  | 4:BR:35:ALA:HB2   | 1.81        | 0.62     |
| 7:DN:705:HIS:N    | 7:DN:706:PRO:CD   | 2.63        | 0.62     |
| 2:DP:220:LYS:HB2  | 3:DQ:347:ARG:NH1  | 2.14        | 0.62     |
| 7:BG:709:LEU:O    | 7:BG:713:MET:CG   | 2.47        | 0.62     |
| 5:DS:655:ASN:ND2  | 8:DY:831:A:C2     | 2.62        | 0.62     |
| 3:AQ:365:MET:HE2  | 3:AQ:367:LEU:HD21 | 1.82        | 0.62     |
| 6:AM:547:THR:CG2  | 6:AM:562:VAL:HG21 | 2.21        | 0.62     |
| 3:DC:347:ARG:HA   | 3:DC:407:ILE:CD1  | 2.30        | 0.62     |
| 2:AB:248:LYS:O    | 2:AB:249:ASN:ND2  | 2.32        | 0.62     |
| 2:BP:277:ASP:HB2  | 2:BP:290:LYS:CE   | 2.28        | 0.62     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:BP:289:SER:HB3  | 3:BQ:357:LYS:CD   | 2.30        | 0.62     |
| 6:BM:539:TYR:CD2  | 8:BX:837:G:N1     | 2.67        | 0.62     |
| 2:BP:210:LEU:HD21 | 2:BP:274:LEU:HD21 | 1.80        | 0.62     |
| 2:BP:274:LEU:HD21 | 2:BP:279:LEU:CD1  | 2.30        | 0.62     |
| 7:BN:742:ILE:CG2  | 7:BN:745:CYS:HB3  | 2.30        | 0.62     |
| 5:CL:662:GLU:HA   | 5:CL:673:GLN:HA   | 1.81        | 0.62     |
| 4:CK:48:VAL:CG1   | 4:CK:56:ALA:HB3   | 2.28        | 0.62     |
| 6:DM:506:ASN:C    | 6:DM:509:PRO:HD2  | 2.20        | 0.62     |
| 2:CP:276:LEU:HB3  | 3:CQ:357:LYS:HE3  | 1.82        | 0.62     |
| 5:AL:639:VAL:O    | 5:AL:639:VAL:HG12 | 2.00        | 0.62     |
| 1:AO:173:ARG:CZ   | 8:AY:834:U:O2     | 2.47        | 0.62     |
| 3:BJ:326:THR:HG23 | 3:BJ:330:SER:HB2  | 1.82        | 0.62     |
| 5:BS:616:GLN:N    | 5:BS:617:PRO:CD   | 2.63        | 0.62     |
| 8:AX:806:G:C6     | 8:AX:807:A:N6     | 2.68        | 0.62     |
| 1:AO:136:LYS:CE   | 8:AY:801:G:O2'    | 2.48        | 0.62     |
| 5:BL:635:LEU:CD2  | 5:BL:679:LEU:HD13 | 2.29        | 0.62     |
| 6:BM:523:LEU:HD12 | 6:BM:523:LEU:N    | 2.15        | 0.62     |
| 1:DH:139:ASN:HD21 | 8:DX:834:U:H3     | 1.46        | 0.62     |
| 1:BH:131:PHE:CZ   | 1:BH:134:PHE:HB3  | 2.25        | 0.62     |
| 8:CY:862:A:H2'    | 8:CY:863:G:C8     | 2.33        | 0.62     |
| 1:AO:149:ARG:HB2  | 1:AO:163:GLU:O    | 1.99        | 0.62     |
| 8:BV:809:G:O6     | 8:BV:810:A:N6     | 2.33        | 0.62     |
| 5:AL:641:MET:HG3  | 5:AL:664:ILE:O    | 2.00        | 0.62     |
| 2:AI:284:GLU:CB   | 2:AI:285:PRO:CD   | 2.78        | 0.62     |
| 2:AP:276:LEU:HB3  | 3:AQ:357:LYS:NZ   | 2.14        | 0.62     |
| 5:DL:683:ASN:CG   | 6:DM:570:LEU:HD11 | 2.18        | 0.62     |
| 6:CT:547:THR:HG21 | 6:CT:562:VAL:CG2  | 2.30        | 0.62     |
| 5:BL:640:ASN:ND2  | 5:BL:666:SER:HB2  | 2.14        | 0.62     |
| 4:AK:47:THR:CG2   | 4:AK:55:VAL:HG13  | 2.30        | 0.62     |
| 1:BH:151:ILE:HG22 | 1:BH:153:PRO:HD2  | 1.82        | 0.62     |
| 4:CD:32:LEU:HD21  | 4:CD:35:ALA:HB2   | 1.82        | 0.62     |
| 7:CG:709:LEU:HD22 | 7:CG:734:PHE:HD2  | 1.64        | 0.62     |
| 4:AK:33:ILE:HD11  | 4:AK:44:SER:OG    | 2.00        | 0.62     |
| 2:AP:235:SER:O    | 2:AP:236:MET:HB2  | 2.00        | 0.62     |
| 2:DI:203:LEU:HD11 | 3:DJ:358:ALA:CB   | 2.29        | 0.61     |
| 8:AV:850:G:H4'    | 8:CX:817:A:O2'    | 2.00        | 0.61     |
| 1:CO:195:VAL:HG22 | 4:CR:91:GLN:HA    | 1.81        | 0.61     |
| 8:CV:847:A:C2     | 8:CV:859:A:N6     | 2.68        | 0.61     |
| 7:BU:705:HIS:N    | 7:BU:706:PRO:CD   | 2.63        | 0.61     |
| 2:AI:232:VAL:CG2  | 2:AI:238:THR:HG23 | 2.30        | 0.61     |
| 2:AI:276:LEU:HB3  | 3:AJ:357:LYS:HE3  | 1.80        | 0.61     |
| 5:CS:618:ILE:HG22 | 7:CU:709:LEU:HD23 | 1.79        | 0.61     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:CI:207:LEU:HD23 | 2:CI:210:LEU:CD1  | 2.29        | 0.61     |
| 6:BF:511:LEU:HD21 | 6:BF:536:VAL:CG1  | 2.27        | 0.61     |
| 2:AP:208:MET:SD   | 2:AP:232:VAL:O    | 2.58        | 0.61     |
| 7:AN:705:HIS:NE2  | 7:AN:736:PRO:HG3  | 2.14        | 0.61     |
| 1:AH:178:VAL:O    | 2:AI:260:ILE:HA   | 2.00        | 0.61     |
| 2:DI:215:VAL:HG12 | 2:DI:271:PRO:CD   | 2.29        | 0.61     |
| 4:AR:5:VAL:HG13   | 4:AR:6:PRO:HD2    | 1.82        | 0.61     |
| 2:AI:293:GLU:HB3  | 3:AJ:368:GLU:OE1  | 1.99        | 0.61     |
| 5:DL:633:VAL:HG21 | 5:DL:647:ILE:HG22 | 1.81        | 0.61     |
| 7:AU:732:ARG:HG3  | 7:AU:743:ASP:HB2  | 1.82        | 0.61     |
| 8:BY:826:U:C6     | 8:BY:826:U:O5'    | 2.53        | 0.61     |
| 4:AR:83:LEU:O     | 4:AR:83:LEU:HD12  | 2.00        | 0.61     |
| 2:AP:210:LEU:HD11 | 2:AP:271:PRO:HG2  | 1.82        | 0.61     |
| 3:AQ:365:MET:HE1  | 3:AQ:367:LEU:HD21 | 1.80        | 0.61     |
| 8:DX:843:C:C2'    | 8:DX:844:U:O5'    | 2.48        | 0.61     |
| 5:CE:625:LEU:CD2  | 7:CG:761:VAL:HG21 | 2.29        | 0.61     |
| 4:CR:90:ASN:O     | 4:CR:92:GLY:N     | 2.34        | 0.61     |
| 7:BN:709:LEU:HD11 | 7:BN:734:PHE:HB3  | 1.82        | 0.61     |
| 8:AV:831:A:P      | 8:AV:837:G:O6     | 2.59        | 0.61     |
| 7:BU:719:LEU:HD23 | 7:BU:767:ILE:CD1  | 2.30        | 0.61     |
| 2:BI:215:VAL:HG12 | 2:BI:271:PRO:HD3  | 1.82        | 0.61     |
| 1:AO:194:ARG:CB   | 4:AR:87:LYS:HG2   | 2.26        | 0.61     |
| 3:DQ:409:VAL:HG21 | 6:DT:563:LEU:HD23 | 1.83        | 0.61     |
| 6:AM:510:PHE:CE2  | 6:AM:514:LEU:HD12 | 2.36        | 0.61     |
| 4:AK:84:LYS:O     | 4:AK:88:ASN:N     | 2.32        | 0.61     |
| 8:BY:826:U:H6     | 8:BY:826:U:O5'    | 1.81        | 0.61     |
| 1:AO:182:VAL:HG23 | 2:AP:257:THR:CG2  | 2.30        | 0.61     |
| 3:AQ:410:LEU:CD1  | 6:AT:559:LEU:HD22 | 2.17        | 0.61     |
| 4:BK:28:TYR:CZ    | 7:BN:769:MET:CE   | 2.82        | 0.61     |
| 5:CL:653:TYR:CE2  | 8:CX:831:A:N7     | 2.68        | 0.61     |
| 3:BJ:344:ILE:CD1  | 3:BJ:365:MET:HE3  | 2.26        | 0.61     |
| 5:BS:679:LEU:HD23 | 6:BT:571:TYR:CB   | 2.31        | 0.61     |
| 4:DK:17:ILE:HA    | 4:DK:30:GLY:O     | 2.01        | 0.61     |
| 2:CB:254:GLN:O    | 2:CB:255:LEU:HD23 | 2.01        | 0.61     |
| 4:CK:13:ALA:O     | 4:CK:16:HIS:HB2   | 2.00        | 0.61     |
| 7:BN:717:LEU:CD2  | 7:BN:771:GLU:O    | 2.48        | 0.61     |
| 7:BG:731:LEU:CD1  | 7:BG:740:LEU:HD23 | 2.30        | 0.61     |
| 1:CA:170:VAL:HG12 | 1:CA:171:LEU:N    | 2.15        | 0.61     |
| 5:BE:685:THR:O    | 5:BE:686:LEU:HD23 | 2.00        | 0.61     |
| 2:AP:276:LEU:HB3  | 3:AQ:357:LYS:HZ1  | 1.64        | 0.61     |
| 2:AP:286:LYS:HZ3  | 3:AQ:357:LYS:NZ   | 1.97        | 0.61     |
| 7:DU:709:LEU:HD11 | 7:DU:734:PHE:HD2  | 1.60        | 0.61     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:DQ:410:LEU:HD22 | 6:DT:559:LEU:HD13 | 1.82        | 0.61     |
| 6:BF:539:TYR:O    | 6:BF:539:TYR:CD2  | 2.54        | 0.61     |
| 3:BC:346:CYS:O    | 6:BF:525:TRP:CH2  | 2.53        | 0.61     |
| 2:CI:216:THR:HA   | 2:CI:225:VAL:O    | 2.00        | 0.61     |
| 5:BE:678:MET:O    | 6:BF:572:ILE:HG22 | 2.01        | 0.61     |
| 2:DI:274:LEU:O    | 2:DI:274:LEU:HD23 | 2.00        | 0.61     |
| 8:AY:811:C:O2'    | 8:AY:812:U:H5'    | 2.00        | 0.61     |
| 8:AY:811:C:H2'    | 8:AY:812:U:O4'    | 2.00        | 0.61     |
| 8:AV:864:A:H2'    | 8:AV:865:C:C6     | 2.35        | 0.61     |
| 1:BA:178:VAL:HG13 | 2:BB:264:ASN:HD21 | 1.65        | 0.61     |
| 1:DA:169:LEU:HD23 | 4:DD:73:LEU:HB2   | 1.82        | 0.61     |
| 8:AV:814:A:C6     | 8:AV:815:A:C6     | 2.87        | 0.61     |
| 2:AP:280:LEU:CD2  | 2:AP:286:LYS:HE3  | 2.29        | 0.61     |
| 7:BU:709:LEU:HD12 | 7:BU:734:PHE:HB3  | 1.83        | 0.61     |
| 7:CN:738:MET:O    | 7:CN:764:GLY:HA2  | 2.00        | 0.61     |
| 1:CA:128:ILE:HD12 | 1:CA:148:PHE:HE2  | 1.65        | 0.61     |
| 7:AU:719:LEU:HD21 | 7:AU:740:LEU:HD13 | 1.81        | 0.61     |
| 4:CR:48:VAL:HG13  | 4:CR:56:ALA:HB3   | 1.82        | 0.61     |
| 6:DF:519:VAL:CG1  | 6:DF:572:ILE:HD11 | 2.28        | 0.61     |
| 3:AC:379:LYS:HG2  | 3:AC:387:SER:OG   | 2.00        | 0.61     |
| 1:BO:171:LEU:HD23 | 1:BO:171:LEU:C    | 2.21        | 0.61     |
| 8:CX:828:G:C2'    | 8:CX:829:C:O5'    | 2.49        | 0.61     |
| 2:AP:265:ILE:HG22 | 2:AP:266:ARG:N    | 2.15        | 0.61     |
| 8:DX:841:G:C2     | 8:DX:842:U:C2     | 2.89        | 0.61     |
| 1:CO:140:LEU:HD13 | 1:CO:180:MET:HE1  | 1.81        | 0.61     |
| 2:DI:217:ILE:CG2  | 2:DI:265:ILE:HG23 | 2.30        | 0.61     |
| 3:AC:407:ILE:HD12 | 6:AF:525:TRP:CZ3  | 2.35        | 0.61     |
| 2:AI:229:ILE:HG23 | 2:AI:238:THR:CG2  | 2.30        | 0.61     |
| 2:AI:220:LYS:HA   | 2:AI:266:ARG:HG2  | 1.83        | 0.61     |
| 6:BF:530:LYS:O    | 6:BF:548:GLU:N    | 2.30        | 0.61     |
| 1:CH:133:ALA:HB3  | 1:CH:141:ILE:HB   | 1.81        | 0.61     |
| 1:AO:195:VAL:HG22 | 1:AO:195:VAL:O    | 2.00        | 0.61     |
| 4:BD:43:MET:O     | 4:BD:61:VAL:HG22  | 2.00        | 0.61     |
| 5:AE:649:GLY:HA3  | 6:AF:506:ASN:HD22 | 1.66        | 0.61     |
| 6:CT:540:MET:CB   | 6:CT:566:CYS:SG   | 2.88        | 0.61     |
| 2:DP:291:LYS:O    | 2:DP:295:VAL:HB   | 2.00        | 0.61     |
| 1:AH:120:ILE:HD12 | 1:AH:179:SER:CB   | 2.30        | 0.61     |
| 6:BT:524:LYS:CA   | 6:BT:570:LEU:HD21 | 2.31        | 0.61     |
| 5:DL:674:LEU:HD13 | 6:DM:573:ARG:HD3  | 1.82        | 0.61     |
| 3:BQ:410:LEU:HB3  | 6:BT:559:LEU:HD22 | 1.83        | 0.61     |
| 1:CH:176:ASN:HD22 | 1:CH:176:ASN:N    | 1.99        | 0.61     |
| 1:BO:138:MET:HG2  | 8:BY:835:U:C5     | 2.36        | 0.61     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:AA:112:HIS:HA   | 1:AA:115:TYR:CD2  | 2.35        | 0.61     |
| 1:DO:138:MET:O    | 1:DO:140:LEU:HD23 | 2.01        | 0.61     |
| 1:CO:178:VAL:HG22 | 2:CP:264:ASN:ND2  | 2.15        | 0.61     |
| 8:CV:841:G:H2'    | 8:CV:842:U:C6     | 2.36        | 0.61     |
| 8:AV:849:G:H22    | 8:CX:816:A:H1'    | 1.60        | 0.61     |
| 1:BA:179:SER:HA   | 2:BB:259:SER:O    | 2.01        | 0.61     |
| 5:AE:635:LEU:HD22 | 5:AE:679:LEU:CD1  | 2.30        | 0.61     |
| 6:CT:571:TYR:CD1  | 6:CT:571:TYR:C    | 2.74        | 0.61     |
| 1:DO:195:VAL:HG23 | 4:DR:91:GLN:HB3   | 1.82        | 0.61     |
| 4:DK:19:THR:CG2   | 4:DK:72:ILE:HD12  | 2.31        | 0.61     |
| 2:AP:247:LEU:HB3  | 2:AP:250:ARG:HB2  | 1.83        | 0.61     |
| 5:BE:686:LEU:HD22 | 7:BG:762:ILE:HG12 | 1.82        | 0.61     |
| 3:DC:363:CYS:SG   | 6:DF:565:ARG:HD3  | 2.41        | 0.61     |
| 1:BH:151:ILE:HG22 | 1:BH:152:LYS:H    | 1.65        | 0.61     |
| 6:BF:553:GLY:O    | 3:BQ:393:ASP:HB3  | 2.00        | 0.61     |
| 2:AP:287:VAL:HA   | 2:AP:290:LYS:HG2  | 1.83        | 0.61     |
| 8:DX:839:C:O5'    | 8:DX:839:C:C6     | 2.52        | 0.61     |
| 1:CH:173:ARG:NH2  | 8:CX:834:U:C2     | 2.69        | 0.61     |
| 2:CI:232:VAL:HG13 | 2:CI:237:ASN:O    | 2.00        | 0.61     |
| 5:DS:682:ASP:HA   | 7:DU:763:ARG:NH1  | 2.10        | 0.61     |
| 4:CR:50:TYR:CE1   | 4:CR:56:ALA:HB2   | 2.36        | 0.61     |
| 3:BJ:333:THR:HA   | 3:BJ:359:PHE:HZ   | 1.64        | 0.61     |
| 5:CL:634:TRP:HZ2  | 5:CL:642:ARG:HD3  | 1.66        | 0.61     |
| 2:AI:274:LEU:HB3  | 3:AJ:398:LYS:NZ   | 2.16        | 0.61     |
| 6:CF:506:ASN:N    | 6:CF:507:PRO:CD   | 2.64        | 0.61     |
| 3:DJ:341:GLN:HB3  | 3:DJ:355:ARG:NH1  | 2.16        | 0.61     |
| 1:AA:125:ARG:NH1  | 1:AA:147:GLU:OE2  | 2.34        | 0.61     |
| 5:AS:631:ILE:O    | 5:AS:633:VAL:HG23 | 2.01        | 0.61     |
| 5:DL:683:ASN:ND2  | 6:DM:570:LEU:CD1  | 2.43        | 0.61     |
| 8:DV:836:U:H4'    | 8:DV:837:G:OP2    | 2.01        | 0.61     |
| 3:DQ:391:ASN:OD1  | 3:DQ:392:LYS:N    | 2.30        | 0.61     |
| 4:BK:10:LEU:HA    | 4:BK:13:ALA:HB3   | 1.82        | 0.61     |
| 8:AV:867:G:O2'    | 8:AV:868:G:P      | 2.58        | 0.61     |
| 3:CC:366:VAL:HG22 | 3:CC:400:PHE:CD2  | 2.35        | 0.61     |
| 4:CK:28:TYR:OH    | 7:CN:769:MET:CE   | 2.49        | 0.61     |
| 1:BO:137:HIS:CD2  | 8:BY:834:U:H3'    | 2.36        | 0.61     |
| 3:BC:377:VAL:O    | 3:BC:377:VAL:HG13 | 2.01        | 0.61     |
| 2:AI:265:ILE:HG21 | 2:AI:268:PHE:CE1  | 2.36        | 0.61     |
| 2:CI:223:THR:HG21 | 2:CI:247:LEU:HD23 | 1.80        | 0.61     |
| 3:BJ:361:ARG:HE   | 8:BX:830:A:H5'    | 1.65        | 0.61     |
| 2:CB:279:LEU:HD23 | 2:CB:280:LEU:N    | 2.16        | 0.61     |
| 2:AI:284:GLU:HB2  | 2:AI:285:PRO:CD   | 2.31        | 0.61     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:BA:170:VAL:HG13 | 4:BD:71:LEU:O     | 2.01        | 0.61     |
| 3:AQ:357:LYS:HD3  | 3:AQ:366:VAL:HG11 | 1.83        | 0.60     |
| 1:BH:118:ARG:HB3  | 1:BH:181:THR:HG22 | 1.83        | 0.60     |
| 6:DM:519:VAL:HG21 | 6:DM:572:ILE:HD11 | 1.82        | 0.60     |
| 3:BJ:407:ILE:HG23 | 6:BM:568:ASN:CG   | 2.20        | 0.60     |
| 3:CC:347:ARG:CZ   | 8:CV:839:C:H4'    | 2.31        | 0.60     |
| 3:BC:347:ARG:C    | 6:BF:525:TRP:CZ2  | 2.74        | 0.60     |
| 2:BB:204:VAL:HG22 | 2:BB:236:MET:CE   | 2.31        | 0.60     |
| 2:BI:202:LYS:HB2  | 2:BI:281:VAL:HG21 | 1.82        | 0.60     |
| 1:BA:130:THR:CG2  | 1:BA:132:LYS:HE2  | 2.30        | 0.60     |
| 7:BN:717:LEU:HD23 | 7:BN:771:GLU:O    | 2.00        | 0.60     |
| 7:AG:739:ASN:ND2  | 8:AV:832:U:O4     | 2.32        | 0.60     |
| 2:AP:289:SER:O    | 2:AP:293:GLU:HB2  | 2.00        | 0.60     |
| 3:DJ:410:LEU:HD22 | 6:DM:562:VAL:HG22 | 1.83        | 0.60     |
| 7:BG:742:ILE:O    | 7:BG:760:VAL:HG12 | 2.01        | 0.60     |
| 5:CL:653:TYR:CD1  | 8:CX:832:U:OP1    | 2.55        | 0.60     |
| 1:DH:118:ARG:O    | 1:DH:180:MET:HA   | 2.01        | 0.60     |
| 5:DE:667:LYS:C    | 5:DE:668:THR:HG22 | 2.21        | 0.60     |
| 2:DP:274:LEU:HD12 | 2:DP:275:PRO:CD   | 2.31        | 0.60     |
| 3:BJ:408:VAL:CG2  | 6:BM:564:ILE:HG23 | 2.09        | 0.60     |
| 5:AE:635:LEU:HD12 | 5:AE:687:LEU:CD2  | 2.31        | 0.60     |
| 2:DI:267:TYR:HB2  | 3:DJ:400:PHE:O    | 2.01        | 0.60     |
| 2:DP:247:LEU:CD2  | 2:DP:249:ASN:H    | 2.13        | 0.60     |
| 1:AA:173:ARG:CZ   | 8:AV:834:U:O2     | 2.49        | 0.60     |
| 7:BG:768:ILE:HG22 | 7:BG:769:MET:HE2  | 1.82        | 0.60     |
| 8:AY:812:U:C2'    | 8:AY:813:G:H5'    | 2.31        | 0.60     |
| 2:BB:243:VAL:O    | 2:BB:243:VAL:HG12 | 2.00        | 0.60     |
| 3:CQ:362:HIS:CD2  | 8:CY:836:U:H2'    | 2.36        | 0.60     |
| 4:BK:47:THR:HG21  | 4:BK:55:VAL:HG11  | 1.83        | 0.60     |
| 6:DF:527:MET:HG2  | 6:DF:551:ILE:HD13 | 1.83        | 0.60     |
| 3:AC:342:VAL:HG11 | 3:AC:356:VAL:CG2  | 2.31        | 0.60     |
| 3:BQ:336:VAL:O    | 3:BQ:339:ASN:ND2  | 2.34        | 0.60     |
| 4:BD:80:ALA:HB3   | 4:BD:81:PRO:CD    | 2.30        | 0.60     |
| 7:DN:712:PHE:CD2  | 7:DN:772:ALA:HB2  | 2.37        | 0.60     |
| 2:CB:282:ASP:O    | 2:CB:286:LYS:NZ   | 2.24        | 0.60     |
| 2:BI:218:GLU:O    | 2:BI:266:ARG:HB3  | 2.02        | 0.60     |
| 6:CF:539:TYR:O    | 6:CF:539:TYR:CD2  | 2.54        | 0.60     |
| 8:CY:814:A:N1     | 8:CY:815:A:C6     | 2.69        | 0.60     |
| 7:AU:729:GLY:HA3  | 7:AU:742:ILE:CG2  | 2.30        | 0.60     |
| 5:BS:690:VAL:O    | 5:BS:690:VAL:HG12 | 1.99        | 0.60     |
| 5:DE:678:MET:CE   | 6:DF:511:LEU:CD2  | 2.79        | 0.60     |
| 1:AO:147:GLU:O    | 1:AO:164:LYS:HB2  | 2.01        | 0.60     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:DI:276:LEU:HB3  | 3:DJ:357:LYS:CE   | 2.31        | 0.60     |
| 7:AN:741:VAL:HA   | 7:AN:760:VAL:O    | 2.01        | 0.60     |
| 7:DU:738:MET:HE3  | 7:DU:767:ILE:HB   | 1.82        | 0.60     |
| 8:BX:835:U:H4'    | 8:BX:835:U:OP1    | 2.01        | 0.60     |
| 5:AL:636:TYR:HB3  | 5:AL:686:LEU:HB2  | 1.83        | 0.60     |
| 2:DB:210:LEU:HB3  | 2:DB:213:GLU:HG3  | 1.82        | 0.60     |
| 3:DJ:366:VAL:CG2  | 3:DJ:400:PHE:HE1  | 2.13        | 0.60     |
| 5:DE:657:VAL:C    | 5:DE:658:LEU:HD23 | 2.21        | 0.60     |
| 8:AY:842:U:O2'    | 8:AY:843:C:H5'    | 2.01        | 0.60     |
| 4:CK:5:VAL:CG2    | 4:CK:6:PRO:HD3    | 2.32        | 0.60     |
| 4:BR:64:ARG:NE    | 4:BR:66:SER:OG    | 2.33        | 0.60     |
| 4:BR:5:VAL:N      | 4:BR:6:PRO:HD2    | 2.17        | 0.60     |
| 3:CQ:388:LYS:N    | 3:CQ:389:PRO:CD   | 2.64        | 0.60     |
| 8:CY:836:U:H5'    | 8:CY:836:U:H6     | 1.66        | 0.60     |
| 3:BJ:402:ARG:NH2  | 8:BX:836:U:C1'    | 2.63        | 0.60     |
| 4:BR:88:ASN:O     | 4:BR:91:GLN:CG    | 2.42        | 0.60     |
| 1:AO:194:ARG:HB3  | 4:AR:87:LYS:CG    | 2.27        | 0.60     |
| 6:AM:507:PRO:O    | 6:AM:510:PHE:N    | 2.33        | 0.60     |
| 1:BA:143:CYS:SG   | 1:BA:169:LEU:CD1  | 2.89        | 0.60     |
| 1:DO:138:MET:O    | 1:DO:140:LEU:CD2  | 2.49        | 0.60     |
| 2:CP:203:LEU:C    | 2:CP:203:LEU:HD23 | 2.22        | 0.60     |
| 3:BJ:390:VAL:CG1  | 3:BJ:391:ASN:H    | 2.12        | 0.60     |
| 7:BG:717:LEU:HD12 | 7:BG:731:LEU:HB2  | 1.83        | 0.60     |
| 7:DN:738:MET:HB2  | 7:DN:764:GLY:HA3  | 1.83        | 0.60     |
| 4:DD:40:ASN:ND2   | 8:DV:833:U:O4     | 2.32        | 0.60     |
| 2:DP:203:LEU:CD2  | 3:DQ:366:VAL:HG21 | 2.32        | 0.60     |
| 7:DU:712:PHE:HB3  | 7:DU:717:LEU:HD11 | 1.84        | 0.60     |
| 2:AI:277:ASP:CG   | 2:AI:290:LYS:HZ2  | 2.04        | 0.60     |
| 1:AH:182:VAL:CG2  | 2:AI:257:THR:HG21 | 2.32        | 0.60     |
| 2:BP:267:TYR:CB   | 3:BQ:400:PHE:O    | 2.49        | 0.60     |
| 2:BP:241:LYS:O    | 2:BP:243:VAL:HG23 | 2.01        | 0.60     |
| 2:DP:263:ASN:HB2  | 8:DY:835:U:O2'    | 2.01        | 0.60     |
| 4:CD:12:GLU:HG2   | 4:CD:79:ASN:HD22  | 1.64        | 0.60     |
| 5:CL:690:VAL:HG13 | 5:CS:631:ILE:CD1  | 2.32        | 0.60     |
| 1:AO:154:LYS:HB3  | 8:AY:849:G:O3'    | 2.01        | 0.60     |
| 6:DF:543:GLN:NE2  | 6:DF:561:GLU:OE2  | 2.34        | 0.60     |
| 4:CR:21:GLU:HB3   | 4:CR:70:PHE:CE2   | 2.36        | 0.60     |
| 1:CO:109:MET:CA   | 1:CO:109:MET:HE2  | 2.29        | 0.60     |
| 6:AT:524:LYS:HA   | 6:AT:570:LEU:HD11 | 1.82        | 0.60     |
| 4:CK:9:VAL:CB     | 4:CK:80:ALA:HB1   | 2.30        | 0.60     |
| 1:AH:120:ILE:HD12 | 1:AH:179:SER:HB3  | 1.84        | 0.60     |
| 5:BS:635:LEU:HD12 | 5:BS:687:LEU:CD2  | 2.31        | 0.60     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:CH:173:ARG:HG2  | 1:CH:175:GLU:H    | 1.67        | 0.60     |
| 2:AB:204:VAL:HG12 | 2:AB:236:MET:CE   | 2.31        | 0.60     |
| 5:BL:657:VAL:HA   | 5:BL:677:ILE:O    | 2.01        | 0.60     |
| 4:AK:80:ALA:HB3   | 4:AK:81:PRO:HD3   | 1.84        | 0.60     |
| 2:CB:279:LEU:HD22 | 2:CB:283:VAL:CG1  | 2.32        | 0.60     |
| 5:AS:653:TYR:HE1  | 6:AT:506:ASN:HD22 | 1.50        | 0.60     |
| 3:AC:315:GLU:O    | 3:AC:319:ARG:HG2  | 2.01        | 0.60     |
| 2:DI:229:ILE:HA   | 2:DI:240:LEU:HD22 | 1.83        | 0.60     |
| 5:BE:688:GLN:CG   | 7:BG:760:VAL:HG23 | 2.31        | 0.60     |
| 6:AM:530:LYS:O    | 6:AM:548:GLU:N    | 2.30        | 0.60     |
| 5:AL:688:GLN:CG   | 7:AN:760:VAL:HG23 | 2.32        | 0.60     |
| 2:DP:276:LEU:CD1  | 3:DQ:357:LYS:CE   | 2.58        | 0.60     |
| 4:DD:19:THR:HG23  | 4:DD:29:ARG:HG2   | 1.83        | 0.60     |
| 2:AB:279:LEU:O    | 2:AB:283:VAL:HB   | 2.02        | 0.60     |
| 1:CA:181:THR:CG2  | 2:CB:257:THR:O    | 2.48        | 0.60     |
| 7:AU:705:HIS:HB2  | 7:AU:706:PRO:CD   | 2.32        | 0.60     |
| 3:DQ:327:GLY:HA3  | 6:DT:535:SER:CB   | 2.32        | 0.60     |
| 3:BC:390:VAL:O    | 3:BC:391:ASN:ND2  | 2.35        | 0.60     |
| 2:DI:215:VAL:HG12 | 2:DI:271:PRO:HD3  | 1.84        | 0.60     |
| 1:CH:150:LYS:O    | 1:CH:151:ILE:HD13 | 2.02        | 0.60     |
| 3:DJ:387:SER:HB3  | 3:DJ:389:PRO:HD2  | 1.84        | 0.60     |
| 4:AR:83:LEU:HD13  | 4:AR:86:MET:HE3   | 1.82        | 0.60     |
| 1:DH:192:ILE:HD12 | 4:DK:92:GLY:N     | 2.16        | 0.60     |
| 1:CH:116:ARG:HA   | 1:CH:129:GLY:O    | 2.01        | 0.60     |
| 6:DF:525:TRP:CE3  | 6:DF:527:MET:SD   | 2.81        | 0.60     |
| 3:BQ:331:VAL:CG2  | 6:BT:543:GLN:NE2  | 2.64        | 0.60     |
| 6:CF:524:LYS:CA   | 6:CF:570:LEU:HD21 | 2.31        | 0.60     |
| 1:DO:115:TYR:HA   | 1:DO:186:PRO:CG   | 2.31        | 0.60     |
| 8:CY:863:G:H2'    | 8:CY:864:A:C8     | 2.36        | 0.60     |
| 1:BA:137:HIS:CD2  | 8:BV:834:U:H3'    | 2.37        | 0.60     |
| 8:BV:863:G:H2'    | 8:BV:864:A:H8     | 1.67        | 0.60     |
| 7:DG:725:ARG:HE   | 7:DG:749:ALA:HB2  | 1.66        | 0.60     |
| 3:CC:342:VAL:HG11 | 3:CC:409:VAL:HG13 | 1.83        | 0.60     |
| 2:DI:210:LEU:O    | 2:DI:229:ILE:CD1  | 2.50        | 0.60     |
| 2:CI:203:LEU:HD21 | 3:CJ:400:PHE:HZ   | 1.65        | 0.60     |
| 3:CQ:344:ILE:O    | 3:CQ:352:LEU:N    | 2.32        | 0.60     |
| 2:DP:290:LYS:N    | 3:DQ:357:LYS:HZ3  | 1.99        | 0.60     |
| 7:DU:709:LEU:CD1  | 7:DU:734:PHE:CD2  | 2.74        | 0.60     |
| 7:CN:740:LEU:HD21 | 7:CN:770:LEU:CD2  | 2.32        | 0.60     |
| 2:BI:219:LEU:HD12 | 2:BI:223:THR:HG23 | 1.79        | 0.60     |
| 3:DQ:332:LEU:CD1  | 6:DT:563:LEU:CD2  | 2.73        | 0.60     |
| 2:AI:217:ILE:HG23 | 2:AI:265:ILE:HG23 | 1.82        | 0.60     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:AX:852:U:C4     | 8:AX:853:A:C6     | 2.89        | 0.60     |
| 4:BD:48:VAL:CG1   | 4:BD:56:ALA:HB3   | 2.31        | 0.60     |
| 8:AV:814:A:N6     | 8:AV:815:A:C6     | 2.70        | 0.60     |
| 2:AI:292:ARG:HD3  | 3:AJ:339:ASN:HD21 | 1.67        | 0.60     |
| 3:AQ:408:VAL:HA   | 6:AT:563:LEU:O    | 2.01        | 0.59     |
| 2:DP:203:LEU:HD22 | 3:DQ:366:VAL:HG21 | 1.82        | 0.59     |
| 6:BM:544:LEU:HB3  | 6:BM:547:THR:HB   | 1.83        | 0.59     |
| 7:BU:705:HIS:NE2  | 7:BU:736:PRO:O    | 2.35        | 0.59     |
| 4:BR:81:PRO:O     | 4:BR:85:SER:N     | 2.27        | 0.59     |
| 3:BC:412:ASN:HB2  | 3:BC:413:PRO:CD   | 2.31        | 0.59     |
| 2:BB:274:LEU:H    | 2:BB:275:PRO:CD   | 2.15        | 0.59     |
| 7:CG:719:LEU:N    | 7:CG:727:VAL:O    | 2.28        | 0.59     |
| 1:BA:108:LYS:O    | 1:BA:112:HIS:ND1  | 2.34        | 0.59     |
| 8:AY:867:G:OP2    | 8:AY:867:G:H4'    | 2.02        | 0.59     |
| 6:AF:555:LEU:HB2  | 3:AQ:373:MET:SD   | 2.41        | 0.59     |
| 4:CR:21:GLU:HB3   | 4:CR:70:PHE:CZ    | 2.37        | 0.59     |
| 2:CP:206:PHE:CE2  | 2:CP:210:LEU:HD11 | 2.36        | 0.59     |
| 6:AM:565:ARG:HB3  | 8:AX:837:G:N2     | 2.16        | 0.59     |
| 4:AD:6:PRO:O      | 4:AD:9:VAL:HG22   | 2.02        | 0.59     |
| 3:CC:409:VAL:N    | 6:CF:563:LEU:O    | 2.35        | 0.59     |
| 6:BM:539:TYR:O    | 6:BM:539:TYR:CD2  | 2.55        | 0.59     |
| 3:CC:390:VAL:HG23 | 3:CC:390:VAL:O    | 2.02        | 0.59     |
| 2:DB:277:ASP:HB3  | 2:DB:287:VAL:HG13 | 1.83        | 0.59     |
| 3:AJ:312:THR:HG23 | 3:AJ:313:PRO:CD   | 2.31        | 0.59     |
| 1:CO:136:LYS:HD2  | 8:CY:801:G:H1'    | 1.83        | 0.59     |
| 4:CD:12:GLU:HG3   | 4:CD:79:ASN:HD22  | 1.67        | 0.59     |
| 8:BV:852:U:O5'    | 8:BV:852:U:H6     | 1.85        | 0.59     |
| 2:AP:217:ILE:O    | 2:AP:225:VAL:N    | 2.27        | 0.59     |
| 3:DC:347:ARG:HA   | 3:DC:407:ILE:HD11 | 1.83        | 0.59     |
| 3:BQ:347:ARG:O    | 6:BT:525:TRP:HH2  | 1.83        | 0.59     |
| 8:AX:864:A:H2'    | 8:AX:865:C:O4'    | 2.01        | 0.59     |
| 2:BB:207:LEU:O    | 2:BB:232:VAL:CG2  | 2.48        | 0.59     |
| 4:BK:59:GLU:CD    | 7:BN:775:ARG:HE   | 2.06        | 0.59     |
| 3:AJ:333:THR:CA   | 3:AJ:359:PHE:CZ   | 2.85        | 0.59     |
| 5:CE:618:ILE:HD12 | 5:CE:618:ILE:C    | 2.22        | 0.59     |
| 1:AH:135:ASP:OD1  | 1:AH:139:ASN:N    | 2.35        | 0.59     |
| 3:AJ:370:VAL:CG1  | 3:AJ:399:MET:HE3  | 2.32        | 0.59     |
| 3:DC:324:PHE:CZ   | 3:DC:329:LEU:CD1  | 2.86        | 0.59     |
| 5:BS:632:GLN:O    | 5:BS:689:SER:HB2  | 2.02        | 0.59     |
| 5:CE:649:GLY:O    | 5:CE:657:VAL:HG23 | 2.03        | 0.59     |
| 6:AF:514:LEU:HD23 | 6:AF:533:LEU:CD2  | 2.32        | 0.59     |
| 8:AV:817:A:N1     | 8:AV:818:G:C6     | 2.70        | 0.59     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BJ:410:LEU:HB3  | 6:BM:559:LEU:HD22 | 1.84        | 0.59     |
| 5:DE:664:ILE:HA   | 5:DE:670:SER:HA   | 1.85        | 0.59     |
| 2:BP:209:LYS:C    | 2:BP:279:LEU:CD2  | 2.71        | 0.59     |
| 5:BS:678:MET:CE   | 6:BT:511:LEU:HD21 | 2.32        | 0.59     |
| 3:CC:401:LEU:CD2  | 3:CC:406:VAL:CG2  | 2.80        | 0.59     |
| 6:CF:524:LYS:CB   | 8:CV:838:A:H61    | 2.14        | 0.59     |
| 1:DA:178:VAL:CG1  | 2:DB:264:ASN:HD21 | 2.15        | 0.59     |
| 3:DJ:402:ARG:NH2  | 8:DX:836:U:H1'    | 2.16        | 0.59     |
| 7:AU:709:LEU:HD12 | 7:AU:734:PHE:CB   | 2.31        | 0.59     |
| 4:DR:46:ILE:HD11  | 4:DR:61:VAL:HG11  | 1.85        | 0.59     |
| 8:CY:863:G:H2'    | 8:CY:864:A:H8     | 1.67        | 0.59     |
| 3:CQ:358:ALA:HB3  | 3:CQ:366:VAL:HG21 | 1.85        | 0.59     |
| 1:DA:128:ILE:HD12 | 1:DA:148:PHE:CE1  | 2.36        | 0.59     |
| 4:AR:50:TYR:HD2   | 4:AR:54:ARG:O     | 1.84        | 0.59     |
| 4:CD:85:SER:O     | 4:CD:89:LYS:HG3   | 2.01        | 0.59     |
| 3:CQ:390:VAL:CG1  | 3:CQ:391:ASN:H    | 2.15        | 0.59     |
| 6:CM:519:VAL:HG23 | 6:CM:521:VAL:HG23 | 1.83        | 0.59     |
| 6:CM:523:LEU:O    | 6:CM:570:LEU:CD1  | 2.51        | 0.59     |
| 5:BE:632:GLN:HE21 | 5:CE:690:VAL:CG1  | 2.12        | 0.59     |
| 2:DP:209:LYS:HB2  | 2:DP:279:LEU:HD23 | 1.83        | 0.59     |
| 8:AV:857:U:O2     | 8:CX:815:A:C2     | 2.55        | 0.59     |
| 6:BM:524:LYS:HB3  | 8:BX:838:A:H2     | 1.67        | 0.59     |
| 3:CC:362:HIS:ND1  | 8:CV:836:U:H2'    | 2.18        | 0.59     |
| 3:DC:332:LEU:HD22 | 3:DC:359:PHE:CD1  | 2.37        | 0.59     |
| 5:DS:635:LEU:HD13 | 5:DS:687:LEU:HD21 | 1.83        | 0.59     |
| 3:BC:342:VAL:HG21 | 3:BC:356:VAL:HG21 | 1.83        | 0.59     |
| 2:BB:283:VAL:HG11 | 2:BB:286:LYS:CE   | 2.33        | 0.59     |
| 4:AK:5:VAL:HG13   | 4:AK:6:PRO:CD     | 2.29        | 0.59     |
| 5:CL:665:HIS:HD2  | 5:CL:667:LYS:HB3  | 1.67        | 0.59     |
| 7:CG:705:HIS:HB3  | 7:CG:736:PRO:CA   | 2.32        | 0.59     |
| 3:AJ:313:PRO:O    | 3:AJ:317:GLN:CG   | 2.50        | 0.59     |
| 1:BH:143:CYS:SG   | 4:BK:84:LYS:HE2   | 2.43        | 0.59     |
| 1:BH:130:THR:HG23 | 1:BH:186:PRO:HG3  | 1.83        | 0.59     |
| 3:DQ:373:MET:O    | 3:DQ:373:MET:CG   | 2.49        | 0.59     |
| 1:DO:151:ILE:HD11 | 8:DY:860:G:H4'    | 1.84        | 0.59     |
| 1:CO:131:PHE:HZ   | 1:CO:134:PHE:HB3  | 1.67        | 0.59     |
| 3:DC:407:ILE:HA   | 6:DF:568:ASN:HD21 | 1.67        | 0.59     |
| 5:CE:663:GLU:OE2  | 5:CE:674:LEU:HD11 | 2.02        | 0.59     |
| 1:CO:188:LYS:O    | 1:CO:192:ILE:N    | 2.33        | 0.59     |
| 8:BV:813:G:C4     | 8:BV:815:A:OP1    | 2.56        | 0.59     |
| 7:BU:732:ARG:HG3  | 7:BU:743:ASP:HB2  | 1.83        | 0.59     |
| 1:BO:118:ARG:HA   | 1:BO:128:ILE:HD13 | 1.85        | 0.59     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:CB:223:THR:HG21 | 2:CB:247:LEU:HD23 | 1.84        | 0.59     |
| 4:DR:46:ILE:HD13  | 4:DR:61:VAL:HG21  | 1.82        | 0.59     |
| 5:BL:661:ALA:HB3  | 5:BL:677:ILE:CD1  | 2.32        | 0.59     |
| 5:AL:628:ARG:NH1  | 5:AL:689:SER:OG   | 2.36        | 0.59     |
| 1:AA:149:ARG:O    | 1:AA:149:ARG:HG3  | 2.03        | 0.59     |
| 6:DT:570:LEU:HD23 | 6:DT:571:TYR:CD2  | 2.38        | 0.59     |
| 5:DS:680:LYS:HB3  | 5:DS:683:ASN:HD22 | 1.66        | 0.59     |
| 7:DU:749:ALA:O    | 7:DU:754:GLN:NE2  | 2.35        | 0.59     |
| 4:CD:60:GLN:NE2   | 7:CG:712:PHE:HZ   | 2.00        | 0.59     |
| 5:BL:646:CYS:O    | 5:BL:658:LEU:HA   | 2.02        | 0.59     |
| 6:AF:581:ASP:O    | 6:AF:584:MET:N    | 2.35        | 0.59     |
| 8:AV:849:G:C6     | 8:AV:850:G:C5     | 2.91        | 0.59     |
| 7:AG:741:VAL:HA   | 7:AG:760:VAL:O    | 2.02        | 0.59     |
| 1:DO:195:VAL:HG23 | 4:DR:91:GLN:OE1   | 2.03        | 0.59     |
| 5:CE:686:LEU:HD23 | 7:CG:762:ILE:HG23 | 1.82        | 0.59     |
| 4:CR:50:TYR:CD1   | 4:CR:54:ARG:O     | 2.46        | 0.59     |
| 5:BL:661:ALA:HB3  | 5:BL:677:ILE:HD11 | 1.83        | 0.59     |
| 6:CF:505:LEU:C    | 6:CF:507:PRO:HD2  | 2.23        | 0.59     |
| 3:CC:341:GLN:H    | 3:CC:414:LEU:HD12 | 1.68        | 0.59     |
| 1:AA:137:HIS:CE1  | 8:AV:834:U:C2     | 2.90        | 0.59     |
| 2:CB:202:LYS:HE3  | 2:CB:204:VAL:CG2  | 2.33        | 0.59     |
| 2:AP:284:GLU:HB3  | 2:AP:285:PRO:HD3  | 1.85        | 0.59     |
| 7:DN:716:LYS:O    | 7:DN:773:LEU:HB2  | 2.02        | 0.59     |
| 2:DP:203:LEU:O    | 2:DP:206:PHE:HB3  | 2.03        | 0.59     |
| 2:AI:258:LEU:HD12 | 2:AI:259:SER:H    | 1.67        | 0.59     |
| 2:AB:219:LEU:HD21 | 2:AB:260:ILE:HD13 | 1.85        | 0.59     |
| 5:DS:657:VAL:O    | 5:DS:658:LEU:HD23 | 2.02        | 0.59     |
| 2:AB:238:THR:CG2  | 2:AB:240:LEU:HD21 | 2.32        | 0.59     |
| 2:BB:270:LEU:CD1  | 3:BC:366:VAL:HG13 | 2.33        | 0.59     |
| 1:CA:181:THR:HG21 | 2:CB:255:LEU:CD1  | 2.32        | 0.59     |
| 7:DN:745:CYS:SG   | 7:DN:760:VAL:HG11 | 2.43        | 0.59     |
| 8:BY:838:A:C5'    | 8:BY:838:A:H8     | 2.15        | 0.59     |
| 6:AM:539:TYR:HD1  | 6:AM:566:CYS:HB3  | 1.65        | 0.59     |
| 7:DN:769:MET:C    | 7:DN:770:LEU:HD12 | 2.22        | 0.59     |
| 4:BD:46:ILE:HD11  | 4:BD:58:LEU:HD12  | 1.85        | 0.59     |
| 2:CP:212:HIS:CD2  | 2:CP:212:HIS:O    | 2.56        | 0.59     |
| 3:CC:384:LYS:O    | 3:CC:385:LYS:HG3  | 2.02        | 0.59     |
| 6:DM:539:TYR:OH   | 6:DM:567:ASN:HB3  | 2.02        | 0.59     |
| 1:CO:131:PHE:HE1  | 1:CO:140:LEU:HD22 | 1.68        | 0.59     |
| 5:BL:679:LEU:HD23 | 6:BM:571:TYR:HB2  | 1.82        | 0.59     |
| 2:BP:236:MET:HE3  | 8:BY:836:U:O2     | 1.95        | 0.59     |
| 3:AC:347:ARG:NH2  | 8:AV:838:A:O2'    | 2.36        | 0.59     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:AF:539:TYR:CD1  | 8:AV:831:A:O4'    | 2.56        | 0.59     |
| 5:CS:651:ASP:OD1  | 5:CS:651:ASP:O    | 2.21        | 0.59     |
| 5:BL:642:ARG:HG3  | 5:BL:664:ILE:HB   | 1.84        | 0.59     |
| 1:DH:172:LEU:HD21 | 1:DH:177:LEU:HD13 | 1.84        | 0.59     |
| 7:BG:731:LEU:HD13 | 7:BG:740:LEU:HD22 | 1.84        | 0.59     |
| 1:DO:131:PHE:CZ   | 1:DO:134:PHE:HB3  | 2.36        | 0.59     |
| 2:CP:206:PHE:CD1  | 2:CP:279:LEU:HB3  | 2.37        | 0.59     |
| 4:BD:83:LEU:O     | 4:BD:86:MET:HG2   | 2.03        | 0.59     |
| 6:AM:512:ASN:O    | 6:AM:515:THR:HG22 | 2.03        | 0.59     |
| 5:AL:662:GLU:HA   | 5:AL:672:LYS:O    | 2.03        | 0.59     |
| 8:CX:866:U:H3'    | 8:CX:867:G:H5''   | 1.85        | 0.59     |
| 3:DC:342:VAL:HG21 | 3:DC:356:VAL:CG2  | 2.32        | 0.59     |
| 3:CC:343:LEU:HB3  | 3:CC:410:LEU:HB2  | 1.85        | 0.59     |
| 2:AP:210:LEU:HB2  | 2:AP:279:LEU:HD21 | 1.85        | 0.59     |
| 6:CM:506:ASN:CB   | 6:CM:507:PRO:CD   | 2.81        | 0.59     |
| 5:DL:661:ALA:O    | 5:DL:673:GLN:HA   | 2.02        | 0.59     |
| 2:BP:210:LEU:HD22 | 2:BP:274:LEU:CD1  | 2.33        | 0.59     |
| 2:AI:208:MET:HG2  | 2:AI:232:VAL:O    | 2.03        | 0.59     |
| 2:AB:238:THR:HG22 | 2:AB:240:LEU:CD2  | 2.33        | 0.59     |
| 2:BB:270:LEU:HD12 | 3:BC:398:LYS:HE2  | 1.85        | 0.59     |
| 7:AU:713:MET:N    | 7:AU:731:LEU:HD23 | 2.17        | 0.59     |
| 3:DJ:344:ILE:HG23 | 3:DJ:406:VAL:HG13 | 1.85        | 0.59     |
| 4:AR:32:LEU:HD21  | 4:AR:35:ALA:HB2   | 1.85        | 0.59     |
| 1:AH:118:ARG:HD3  | 1:AH:126:ILE:HD13 | 1.85        | 0.59     |
| 2:DP:247:LEU:HD23 | 2:DP:249:ASN:N    | 2.17        | 0.59     |
| 4:BR:38:ASN:ND2   | 8:BY:833:U:O4     | 2.36        | 0.59     |
| 5:DL:678:MET:CE   | 6:DM:511:LEU:HD23 | 2.32        | 0.58     |
| 3:CC:332:LEU:HA   | 3:CC:359:PHE:HZ   | 1.68        | 0.58     |
| 2:DB:236:MET:HE3  | 3:DC:364:ASN:ND2  | 2.17        | 0.58     |
| 6:CT:511:LEU:HD21 | 6:CT:536:VAL:HG11 | 1.84        | 0.58     |
| 5:DS:633:VAL:HA   | 5:DS:689:SER:HB3  | 1.85        | 0.58     |
| 8:BV:832:U:C3'    | 8:BV:833:U:H5''   | 2.33        | 0.58     |
| 2:BB:279:LEU:HB3  | 2:BB:283:VAL:HG21 | 1.85        | 0.58     |
| 3:DQ:409:VAL:HB   | 6:DT:563:LEU:HB3  | 1.84        | 0.58     |
| 6:BF:528:GLU:HG2  | 6:BF:573:ARG:HH21 | 1.67        | 0.58     |
| 4:DK:84:LYS:O     | 4:DK:88:ASN:N     | 2.34        | 0.58     |
| 1:DO:173:ARG:NE   | 8:DY:834:U:O2     | 2.36        | 0.58     |
| 4:AK:63:ILE:HD11  | 7:AN:769:MET:CE   | 2.32        | 0.58     |
| 5:DL:633:VAL:HB   | 5:DL:645:GLY:O    | 2.03        | 0.58     |
| 1:BH:154:LYS:HB3  | 1:BH:159:ALA:CB   | 2.33        | 0.58     |
| 3:BQ:326:THR:HB   | 3:BQ:329:LEU:HG   | 1.84        | 0.58     |
| 7:CG:745:CYS:SG   | 7:CG:745:CYS:O    | 2.60        | 0.58     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:AG:719:LEU:HD21 | 7:AG:740:LEU:HD13 | 1.84        | 0.58     |
| 6:AM:530:LYS:HZ1  | 6:AM:548:GLU:CD   | 2.07        | 0.58     |
| 7:AN:741:VAL:HG12 | 7:AN:759:MET:SD   | 2.42        | 0.58     |
| 1:AA:151:ILE:HG22 | 1:AA:152:LYS:N    | 2.11        | 0.58     |
| 3:BJ:347:ARG:HA   | 6:BM:525:TRP:HH2  | 1.66        | 0.58     |
| 3:BQ:327:GLY:N    | 3:BQ:328:PRO:HD2  | 2.17        | 0.58     |
| 5:BS:686:LEU:HD23 | 7:BU:762:ILE:HA   | 1.84        | 0.58     |
| 2:BB:274:LEU:H    | 2:BB:275:PRO:HD2  | 1.67        | 0.58     |
| 8:BV:854:A:O5'    | 8:BV:854:A:H8     | 1.85        | 0.58     |
| 5:CL:644:GLU:O    | 5:CL:661:ALA:HA   | 2.04        | 0.58     |
| 1:AO:178:VAL:HG13 | 2:AP:264:ASN:HD21 | 1.68        | 0.58     |
| 5:CL:665:HIS:CD2  | 5:CL:667:LYS:H    | 2.21        | 0.58     |
| 8:BX:851:G:N2     | 8:BX:854:A:H62    | 2.00        | 0.58     |
| 1:BO:115:TYR:HE2  | 1:BO:185:PRO:HG3  | 1.66        | 0.58     |
| 6:AT:565:ARG:HB3  | 8:AY:837:G:N2     | 2.18        | 0.58     |
| 1:AO:153:PRO:HB3  | 1:AO:158:GLN:HB3  | 1.84        | 0.58     |
| 1:DH:115:TYR:CD1  | 1:DH:185:PRO:HB3  | 2.38        | 0.58     |
| 2:AP:286:LYS:NZ   | 3:AQ:357:LYS:HZ3  | 2.01        | 0.58     |
| 5:BL:655:ASN:C    | 5:BL:656:LEU:HD23 | 2.24        | 0.58     |
| 3:CJ:407:ILE:HG22 | 3:CJ:408:VAL:HG23 | 1.84        | 0.58     |
| 6:BT:547:THR:HG21 | 6:BT:562:VAL:CG2  | 2.33        | 0.58     |
| 5:BE:683:ASN:CB   | 6:BF:570:LEU:HD11 | 2.32        | 0.58     |
| 2:BB:286:LYS:CE   | 3:BC:357:LYS:O    | 2.51        | 0.58     |
| 3:AC:391:ASN:O    | 3:AC:392:LYS:HD3  | 2.04        | 0.58     |
| 6:DF:514:LEU:O    | 6:DF:517:LYS:CG   | 2.51        | 0.58     |
| 3:BQ:388:LYS:N    | 3:BQ:389:PRO:CD   | 2.66        | 0.58     |
| 6:AF:530:LYS:HD2  | 6:AF:575:VAL:HG11 | 1.84        | 0.58     |
| 3:CJ:312:THR:N    | 3:CJ:313:PRO:CD   | 2.66        | 0.58     |
| 4:DK:23:ASN:HA    | 4:DK:69:ARG:HE    | 1.68        | 0.58     |
| 1:AO:109:MET:HA   | 1:AO:109:MET:HE2  | 1.85        | 0.58     |
| 3:CJ:372:GLU:OE2  | 3:CJ:394:ARG:HD2  | 2.02        | 0.58     |
| 1:AA:106:SER:HA   | 1:AA:109:MET:HG2  | 1.85        | 0.58     |
| 6:CM:506:ASN:CB   | 6:CM:507:PRO:HD3  | 2.32        | 0.58     |
| 8:CX:837:G:H5''   | 8:CX:838:A:OP2    | 2.04        | 0.58     |
| 5:DS:616:GLN:CG   | 5:DS:618:ILE:HD12 | 2.33        | 0.58     |
| 5:AE:674:LEU:HD11 | 6:AF:573:ARG:HD3  | 1.84        | 0.58     |
| 5:AS:621:ILE:HG21 | 7:AU:741:VAL:HG21 | 1.84        | 0.58     |
| 2:AI:265:ILE:O    | 3:AJ:402:ARG:HD3  | 2.02        | 0.58     |
| 3:BJ:366:VAL:O    | 3:BJ:367:LEU:HD23 | 2.04        | 0.58     |
| 3:DQ:346:CYS:HB2  | 3:DQ:350:LYS:HG3  | 1.86        | 0.58     |
| 8:BX:853:A:C6     | 8:BX:854:A:C2     | 2.92        | 0.58     |
| 4:DR:50:TYR:CD1   | 4:DR:54:ARG:HB3   | 2.39        | 0.58     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:AU:730:ILE:HG21 | 7:AU:732:ARG:CZ   | 2.33        | 0.58     |
| 8:AV:863:G:H2'    | 8:AV:864:A:C8     | 2.38        | 0.58     |
| 2:CI:222:GLY:O    | 2:CI:248:LYS:HE2  | 2.03        | 0.58     |
| 4:CD:16:HIS:O     | 4:CD:31:LYS:HA    | 2.03        | 0.58     |
| 1:CO:109:MET:HB3  | 1:CO:134:PHE:CE2  | 2.38        | 0.58     |
| 2:CP:204:VAL:CG1  | 8:CY:836:U:O4     | 2.51        | 0.58     |
| 3:BJ:416:ALA:HB3  | 6:BM:543:GLN:NE2  | 2.18        | 0.58     |
| 3:BJ:416:ALA:HB3  | 6:BM:543:GLN:HE22 | 1.67        | 0.58     |
| 8:CV:866:U:C3'    | 8:CV:867:G:H5''   | 2.31        | 0.58     |
| 2:CP:285:PRO:HG3  | 3:CQ:337:LYS:NZ   | 2.19        | 0.58     |
| 5:CS:686:LEU:O    | 5:CS:687:LEU:HD23 | 2.03        | 0.58     |
| 5:CS:674:LEU:HD13 | 6:CT:573:ARG:CB   | 2.33        | 0.58     |
| 5:CL:621:ILE:O    | 5:CL:625:LEU:HG   | 2.03        | 0.58     |
| 2:BB:213:GLU:C    | 2:BB:228:THR:HG23 | 2.24        | 0.58     |
| 2:BB:210:LEU:HB3  | 2:BB:229:ILE:HD12 | 1.85        | 0.58     |
| 2:BI:207:LEU:HB2  | 2:BI:232:VAL:HG11 | 1.84        | 0.58     |
| 7:CN:742:ILE:HG22 | 7:CN:745:CYS:HB3  | 1.85        | 0.58     |
| 1:DO:118:ARG:HG3  | 1:DO:128:ILE:HD11 | 1.85        | 0.58     |
| 3:CC:370:VAL:HG11 | 3:CC:399:MET:HE1  | 1.85        | 0.58     |
| 5:AL:647:ILE:O    | 5:AL:648:ILE:HD13 | 2.03        | 0.58     |
| 4:AR:49:THR:OG1   | 4:AR:55:VAL:HG22  | 2.03        | 0.58     |
| 1:DO:178:VAL:HG22 | 2:DP:264:ASN:HD21 | 1.67        | 0.58     |
| 6:DM:541:ASN:OD1  | 6:DM:566:CYS:N    | 2.36        | 0.58     |
| 5:AS:644:GLU:O    | 5:AS:661:ALA:HA   | 2.04        | 0.58     |
| 5:AS:679:LEU:HD23 | 6:AT:571:TYR:HB2  | 1.85        | 0.58     |
| 3:BJ:347:ARG:O    | 6:BM:525:TRP:CZ3  | 2.56        | 0.58     |
| 2:DB:204:VAL:HG21 | 2:DB:234:VAL:O    | 2.03        | 0.58     |
| 2:DB:217:ILE:HG21 | 2:DB:265:ILE:CD1  | 2.31        | 0.58     |
| 1:DA:178:VAL:CG1  | 2:DB:264:ASN:ND2  | 2.66        | 0.58     |
| 2:DB:293:GLU:HG3  | 3:DC:398:LYS:CE   | 2.34        | 0.58     |
| 2:BP:261:ARG:NH1  | 2:BP:263:ASN:HD22 | 2.01        | 0.58     |
| 2:BI:206:PHE:CZ   | 2:BI:210:LEU:HD11 | 2.39        | 0.58     |
| 1:BA:169:LEU:HB3  | 4:BD:73:LEU:HB2   | 1.85        | 0.58     |
| 3:AC:385:LYS:CE   | 5:AS:667:LYS:HE2  | 2.33        | 0.58     |
| 7:DN:773:LEU:O    | 7:DN:773:LEU:HD12 | 2.04        | 0.58     |
| 2:BB:214:THR:O    | 2:BB:215:VAL:HG13 | 2.03        | 0.58     |
| 6:AT:530:LYS:HD2  | 6:AT:576:GLU:OE1  | 2.03        | 0.58     |
| 7:BG:741:VAL:HG22 | 7:BG:761:VAL:HG22 | 1.86        | 0.58     |
| 6:BM:525:TRP:NE1  | 8:BX:839:C:C2     | 2.71        | 0.58     |
| 5:BS:678:MET:CE   | 6:BT:511:LEU:HD23 | 2.34        | 0.58     |
| 5:BS:674:LEU:HD13 | 6:BT:573:ARG:CD   | 2.33        | 0.58     |
| 3:CC:359:PHE:HA   | 3:CC:364:ASN:O    | 2.03        | 0.58     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CC:408:VAL:HG22 | 6:CF:564:ILE:CG2  | 2.09        | 0.58     |
| 1:DA:118:ARG:O    | 1:DA:180:MET:HA   | 2.04        | 0.58     |
| 1:DA:178:VAL:CB   | 2:DB:264:ASN:HD21 | 2.17        | 0.58     |
| 6:BF:537:ASP:OD1  | 6:BF:541:ASN:N    | 2.36        | 0.58     |
| 5:BS:665:HIS:HB2  | 5:BS:669:LYS:O    | 2.04        | 0.58     |
| 3:DJ:372:GLU:HG3  | 3:DJ:374:TRP:HE3  | 1.66        | 0.58     |
| 2:CI:223:THR:HG23 | 2:CI:247:LEU:HA   | 1.84        | 0.58     |
| 3:CC:370:VAL:HG21 | 3:CC:399:MET:HG2  | 1.85        | 0.58     |
| 3:BQ:333:THR:HG22 | 3:BQ:359:PHE:CE2  | 2.39        | 0.58     |
| 8:AY:812:U:H2'    | 8:AY:813:G:H5'    | 1.85        | 0.58     |
| 3:BQ:350:LYS:HG2  | 3:BQ:374:TRP:HB2  | 1.86        | 0.58     |
| 1:CA:108:LYS:O    | 1:CA:112:HIS:CE1  | 2.56        | 0.58     |
| 2:AP:203:LEU:HD12 | 3:AQ:360:ASP:OD1  | 2.04        | 0.58     |
| 6:AT:547:THR:CG2  | 6:AT:562:VAL:HG23 | 2.25        | 0.58     |
| 7:BG:742:ILE:HG21 | 7:BG:745:CYS:HB3  | 1.86        | 0.58     |
| 5:BL:655:ASN:ND2  | 8:BX:831:A:H2     | 1.97        | 0.58     |
| 2:DP:268:PHE:HB2  | 3:DQ:400:PHE:HB3  | 1.86        | 0.58     |
| 6:CF:520:MET:HG3  | 6:CF:575:VAL:HG22 | 1.86        | 0.58     |
| 3:CC:394:ARG:NE   | 3:CC:396:ILE:HD11 | 2.18        | 0.58     |
| 2:CB:269:ILE:HD13 | 3:CC:396:ILE:HD13 | 1.77        | 0.58     |
| 5:CS:636:TYR:HD2  | 5:CS:685:THR:HB   | 1.69        | 0.58     |
| 4:BR:90:ASN:O     | 4:BR:91:GLN:C     | 2.41        | 0.58     |
| 8:CX:835:U:H4'    | 8:CX:835:U:OP1    | 2.04        | 0.58     |
| 2:DB:270:LEU:HD12 | 3:DC:398:LYS:HG2  | 1.83        | 0.58     |
| 7:DN:712:PHE:HD2  | 7:DN:717:LEU:HD21 | 1.69        | 0.58     |
| 7:BU:729:GLY:HA3  | 7:BU:742:ILE:CG2  | 2.34        | 0.58     |
| 8:CV:814:A:O5'    | 8:CV:814:A:C8     | 2.48        | 0.58     |
| 6:BF:555:LEU:HD23 | 3:BQ:353:LEU:HD23 | 1.86        | 0.58     |
| 2:AI:267:TYR:HA   | 3:AJ:400:PHE:O    | 2.03        | 0.58     |
| 1:AO:154:LYS:HD2  | 8:AY:849:G:H4'    | 1.84        | 0.58     |
| 1:AA:130:THR:HB   | 1:AA:143:CYS:HB2  | 1.84        | 0.58     |
| 2:DI:275:PRO:HG2  | 2:DI:278:THR:HB   | 1.85        | 0.58     |
| 4:BK:55:VAL:CG1   | 4:BK:57:GLN:NE2   | 2.67        | 0.58     |
| 6:CM:539:TYR:HD2  | 6:CM:566:CYS:HB3  | 1.67        | 0.58     |
| 3:AC:342:VAL:CG1  | 3:AC:356:VAL:HG23 | 2.34        | 0.58     |
| 3:BQ:358:ALA:HB3  | 3:BQ:366:VAL:HG23 | 1.86        | 0.58     |
| 3:DC:332:LEU:HB3  | 3:DC:359:PHE:CE1  | 2.38        | 0.58     |
| 5:CE:655:ASN:ND2  | 8:CV:831:A:N1     | 2.52        | 0.58     |
| 3:AJ:340:THR:HG21 | 3:AJ:415:ILE:CG1  | 2.33        | 0.58     |
| 1:BA:137:HIS:NE2  | 8:BV:834:U:C2'    | 2.67        | 0.58     |
| 5:AL:657:VAL:O    | 5:AL:658:LEU:HD23 | 2.01        | 0.58     |
| 7:DG:718:SER:HB2  | 7:DG:726:HIS:CE1  | 2.39        | 0.58     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:AN:722:ASN:OD1  | 7:AN:723:GLY:N    | 2.37        | 0.58     |
| 3:DJ:347:ARG:O    | 6:DM:525:TRP:CH2  | 2.56        | 0.58     |
| 1:CO:137:HIS:CE1  | 8:CY:834:U:C2     | 2.92        | 0.58     |
| 2:CI:276:LEU:HD21 | 3:CJ:357:LYS:HZ1  | 1.60        | 0.58     |
| 3:CQ:407:ILE:O    | 3:CQ:408:VAL:HG23 | 2.03        | 0.58     |
| 3:CJ:342:VAL:HG12 | 3:CJ:409:VAL:HG13 | 1.86        | 0.58     |
| 5:AE:635:LEU:HD22 | 5:AE:679:LEU:HD11 | 1.85        | 0.58     |
| 5:BS:677:ILE:HG21 | 5:BS:679:LEU:CD2  | 2.32        | 0.58     |
| 3:AQ:374:TRP:NE1  | 3:AQ:391:ASN:ND2  | 2.50        | 0.58     |
| 2:AI:276:LEU:CG   | 3:AJ:357:LYS:HE3  | 2.34        | 0.58     |
| 2:CI:237:ASN:HD21 | 8:CX:835:U:H3     | 1.52        | 0.58     |
| 2:DB:277:ASP:HB3  | 2:DB:287:VAL:CG1  | 2.33        | 0.58     |
| 8:AV:801:G:O2'    | 8:AV:802:C:OP2    | 2.20        | 0.58     |
| 4:DD:46:ILE:CD1   | 4:DD:48:VAL:HG23  | 2.34        | 0.58     |
| 4:DK:19:THR:HG21  | 4:DK:72:ILE:HD12  | 1.84        | 0.58     |
| 2:DB:210:LEU:HD21 | 2:DB:279:LEU:HD13 | 1.85        | 0.58     |
| 2:AB:283:VAL:HG11 | 2:AB:286:LYS:HB3  | 1.85        | 0.58     |
| 1:DA:133:ALA:HB3  | 1:DA:141:ILE:CG1  | 2.34        | 0.58     |
| 1:CH:118:ARG:HD2  | 1:CH:181:THR:HG23 | 1.86        | 0.58     |
| 7:AU:706:PRO:HA   | 7:AU:709:LEU:HB3  | 1.85        | 0.58     |
| 5:CE:634:TRP:CB   | 5:CE:688:GLN:O    | 2.49        | 0.58     |
| 4:DK:48:VAL:HG12  | 4:DK:56:ALA:HB3   | 1.86        | 0.58     |
| 3:BJ:331:VAL:HG12 | 6:BM:563:LEU:HD22 | 1.86        | 0.58     |
| 3:AJ:344:ILE:CD1  | 3:AJ:365:MET:SD   | 2.92        | 0.58     |
| 7:AG:746:VAL:HG23 | 7:AG:755:ASN:O    | 2.03        | 0.58     |
| 1:DO:121:LEU:HD21 | 1:DO:172:LEU:HD11 | 1.85        | 0.58     |
| 1:BH:190:THR:O    | 1:BH:194:ARG:HG2  | 2.03        | 0.58     |
| 3:CJ:362:HIS:CD2  | 8:CX:836:U:C4     | 2.92        | 0.58     |
| 4:DD:20:CYS:SG    | 4:DD:68:ILE:HG23  | 2.43        | 0.58     |
| 3:AQ:412:ASN:HD22 | 3:AQ:414:LEU:HB2  | 1.69        | 0.58     |
| 3:AQ:357:LYS:HD2  | 3:AQ:368:GLU:OE2  | 2.04        | 0.57     |
| 2:DI:218:GLU:O    | 2:DI:266:ARG:HB3  | 2.04        | 0.57     |
| 2:CI:276:LEU:HD22 | 3:CJ:357:LYS:CE   | 2.34        | 0.57     |
| 7:BG:744:GLU:OE2  | 5:CE:630:ARG:NH1  | 2.37        | 0.57     |
| 3:DQ:376:GLU:HB2  | 3:DQ:391:ASN:CA   | 2.34        | 0.57     |
| 6:BF:547:THR:HG21 | 6:BF:562:VAL:CB   | 2.34        | 0.57     |
| 4:DD:27:VAL:CB    | 4:DD:49:THR:HB    | 2.28        | 0.57     |
| 3:AC:357:LYS:HD3  | 3:AC:366:VAL:CG1  | 2.34        | 0.57     |
| 7:AU:712:PHE:CG   | 7:AU:717:LEU:HD21 | 2.38        | 0.57     |
| 7:DU:763:ARG:NH2  | 8:DY:832:U:H1'    | 2.19        | 0.57     |
| 3:DJ:344:ILE:HG21 | 3:DJ:406:VAL:HG13 | 1.85        | 0.57     |
| 3:BQ:340:THR:O    | 3:BQ:340:THR:HG23 | 2.04        | 0.57     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CT:550:TYR:CZ   | 6:CT:555:LEU:HD13 | 2.38        | 0.57     |
| 3:DJ:410:LEU:HD22 | 6:DM:562:VAL:CG2  | 2.34        | 0.57     |
| 3:AQ:331:VAL:HG21 | 6:AT:543:GLN:NE2  | 2.16        | 0.57     |
| 5:BL:655:ASN:ND2  | 8:BX:831:A:N1     | 2.51        | 0.57     |
| 5:CS:639:VAL:HG12 | 5:CS:639:VAL:O    | 2.04        | 0.57     |
| 8:AV:857:U:H4'    | 8:CX:815:A:O2'    | 2.04        | 0.57     |
| 5:AE:610:VAL:CG1  | 5:AE:612:LYS:HE2  | 2.22        | 0.57     |
| 7:BN:706:PRO:HG2  | 7:BN:707:PRO:HD3  | 1.86        | 0.57     |
| 5:AS:624:TYR:HE2  | 7:AU:761:VAL:HG21 | 1.69        | 0.57     |
| 1:DA:182:VAL:HG22 | 2:DB:257:THR:CG2  | 2.34        | 0.57     |
| 1:CH:121:LEU:HD22 | 1:CH:176:ASN:C    | 2.25        | 0.57     |
| 3:DQ:331:VAL:CB   | 6:DT:543:GLN:NE2  | 2.67        | 0.57     |
| 2:AB:211:SER:HB3  | 2:BB:212:HIS:CD2  | 2.39        | 0.57     |
| 2:BI:217:ILE:HG12 | 2:BI:268:PHE:CD2  | 2.38        | 0.57     |
| 8:BY:807:A:C2'    | 8:BY:808:C:H5''   | 2.34        | 0.57     |
| 1:DH:116:ARG:H    | 1:DH:186:PRO:HD3  | 1.69        | 0.57     |
| 6:AF:546:ASN:OD1  | 6:AF:546:ASN:O    | 2.22        | 0.57     |
| 3:AJ:412:ASN:HB3  | 3:AJ:413:PRO:CD   | 2.33        | 0.57     |
| 3:AJ:412:ASN:HB3  | 3:AJ:413:PRO:HD3  | 1.84        | 0.57     |
| 4:BK:64:ARG:NH1   | 7:BN:738:MET:HG3  | 2.19        | 0.57     |
| 5:DE:621:ILE:HD12 | 7:DG:741:VAL:CG2  | 2.33        | 0.57     |
| 2:DP:287:VAL:CA   | 2:DP:290:LYS:HE3  | 2.32        | 0.57     |
| 6:DM:515:THR:HA   | 6:DM:533:LEU:HD23 | 1.86        | 0.57     |
| 3:BQ:352:LEU:CD1  | 3:BQ:401:LEU:HD22 | 2.34        | 0.57     |
| 2:CB:207:LEU:CD2  | 2:CB:210:LEU:HD12 | 2.31        | 0.57     |
| 8:DV:829:C:C1'    | 8:DV:830:A:OP2    | 2.52        | 0.57     |
| 5:BE:680:LYS:HE3  | 5:BE:682:ASP:OD2  | 2.04        | 0.57     |
| 3:AJ:331:VAL:HA   | 3:AJ:418:LYS:O    | 2.04        | 0.57     |
| 7:CG:721:LEU:N    | 7:CG:721:LEU:HD12 | 2.19        | 0.57     |
| 1:AA:111:GLN:O    | 1:AA:115:TYR:HE2  | 1.87        | 0.57     |
| 1:AO:116:ARG:HA   | 1:AO:129:GLY:O    | 2.04        | 0.57     |
| 2:AB:269:ILE:CG2  | 2:AB:269:ILE:O    | 2.52        | 0.57     |
| 2:BI:218:GLU:HB2  | 2:BI:267:TYR:CE1  | 2.39        | 0.57     |
| 3:BJ:333:THR:CA   | 3:BJ:359:PHE:HZ   | 2.15        | 0.57     |
| 1:AO:179:SER:HB3  | 2:AP:258:LEU:CD1  | 2.33        | 0.57     |
| 2:AI:274:LEU:HB3  | 3:AJ:398:LYS:HZ3  | 1.68        | 0.57     |
| 7:AU:767:ILE:HG21 | 7:AU:770:LEU:HD11 | 1.85        | 0.57     |
| 4:BD:67:LYS:HE3   | 7:BG:768:ILE:HA   | 1.85        | 0.57     |
| 1:DA:171:LEU:HD23 | 1:DA:172:LEU:O    | 2.05        | 0.57     |
| 3:AJ:374:TRP:CE3  | 3:AJ:375:THR:O    | 2.56        | 0.57     |
| 3:AQ:407:ILE:HD11 | 6:AT:525:TRP:HZ3  | 1.68        | 0.57     |
| 7:BN:737:PHE:HE1  | 8:BX:833:U:H5''   | 1.70        | 0.57     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CQ:375:THR:HA   | 3:CQ:390:VAL:HG13 | 1.86        | 0.57     |
| 1:DH:137:HIS:CE1  | 8:DX:834:U:C2     | 2.92        | 0.57     |
| 7:BN:705:HIS:CG   | 7:BN:706:PRO:HD3  | 2.39        | 0.57     |
| 2:CB:233:ASP:OD1  | 2:CB:237:ASN:N    | 2.37        | 0.57     |
| 1:CH:175:GLU:C    | 1:CH:176:ASN:HD22 | 2.08        | 0.57     |
| 2:DB:276:LEU:HB2  | 2:DB:290:LYS:HB2  | 1.87        | 0.57     |
| 3:BC:347:ARG:CA   | 6:BF:525:TRP:CZ2  | 2.86        | 0.57     |
| 5:DS:664:ILE:HA   | 5:DS:670:SER:HA   | 1.84        | 0.57     |
| 3:DJ:374:TRP:CH2  | 3:DJ:394:ARG:HB2  | 2.39        | 0.57     |
| 1:BA:114:ASP:O    | 1:BA:187:PRO:HD2  | 2.04        | 0.57     |
| 3:BJ:341:GLN:O    | 3:BJ:412:ASN:ND2  | 2.37        | 0.57     |
| 3:BQ:329:LEU:O    | 3:BQ:333:THR:HG23 | 2.04        | 0.57     |
| 5:AE:649:GLY:CA   | 6:AF:506:ASN:HD22 | 2.17        | 0.57     |
| 8:CX:866:U:C3'    | 8:CX:867:G:H5''   | 2.34        | 0.57     |
| 3:AQ:367:LEU:N    | 3:AQ:399:MET:O    | 2.21        | 0.57     |
| 6:DM:539:TYR:CE2  | 6:DM:566:CYS:HB3  | 2.39        | 0.57     |
| 2:BP:205:ARG:CA   | 2:BP:208:MET:CE   | 2.80        | 0.57     |
| 5:AE:636:TYR:HD1  | 5:AE:685:THR:HB   | 1.69        | 0.57     |
| 7:BU:709:LEU:C    | 7:BU:709:LEU:HD23 | 2.24        | 0.57     |
| 6:CT:511:LEU:HD21 | 6:CT:536:VAL:CG1  | 2.35        | 0.57     |
| 4:BR:58:LEU:HD13  | 4:BR:61:VAL:CG1   | 2.35        | 0.57     |
| 4:DK:19:THR:HB    | 4:DK:72:ILE:HB    | 1.85        | 0.57     |
| 6:BF:514:LEU:HD21 | 6:BF:572:ILE:HD13 | 1.86        | 0.57     |
| 2:CP:247:LEU:HB3  | 2:CP:250:ARG:HB2  | 1.87        | 0.57     |
| 1:BA:137:HIS:NE2  | 8:BV:834:U:C3'    | 2.68        | 0.57     |
| 4:DR:12:GLU:O     | 4:DR:16:HIS:ND1   | 2.38        | 0.57     |
| 3:DQ:347:ARG:HB3  | 3:DQ:405:SER:HA   | 1.86        | 0.57     |
| 3:CJ:340:THR:CG2  | 3:CJ:414:LEU:HD12 | 2.34        | 0.57     |
| 3:AQ:371:LYS:HA   | 3:AQ:394:ARG:O    | 2.05        | 0.57     |
| 4:CD:19:THR:HB    | 4:CD:72:ILE:HB    | 1.87        | 0.57     |
| 1:CO:181:THR:HB   | 2:CP:258:LEU:CD1  | 2.34        | 0.57     |
| 2:DI:265:ILE:HD13 | 2:DI:268:PHE:HZ   | 1.68        | 0.57     |
| 3:AC:410:LEU:HD23 | 6:AF:562:VAL:HG22 | 1.87        | 0.57     |
| 3:AC:363:CYS:CB   | 6:AF:565:ARG:CZ   | 2.83        | 0.57     |
| 5:DS:674:LEU:HD13 | 6:DT:573:ARG:CD   | 2.35        | 0.57     |
| 4:DK:46:ILE:CD1   | 4:DK:58:LEU:HB2   | 2.29        | 0.57     |
| 4:AD:46:ILE:HG13  | 4:AD:58:LEU:O     | 2.04        | 0.57     |
| 1:CH:178:VAL:HG23 | 1:CH:179:SER:N    | 2.20        | 0.57     |
| 6:AT:565:ARG:HB3  | 8:AY:837:G:H21    | 1.69        | 0.57     |
| 6:AF:508:LYS:HB2  | 6:AF:509:PRO:CD   | 2.35        | 0.57     |
| 7:DU:750:THR:HG22 | 7:DU:750:THR:O    | 2.04        | 0.57     |
| 3:BJ:336:VAL:HG22 | 3:BJ:357:LYS:C    | 2.25        | 0.57     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:BR:19:THR:HB    | 4:BR:72:ILE:HB    | 1.86        | 0.57     |
| 5:DE:634:TRP:HB3  | 5:DE:688:GLN:O    | 2.05        | 0.57     |
| 2:CB:268:PHE:HB2  | 3:CC:400:PHE:HB3  | 1.87        | 0.57     |
| 2:CP:285:PRO:HG3  | 3:CQ:337:LYS:HZ2  | 1.70        | 0.57     |
| 5:CL:618:ILE:N    | 7:CN:713:MET:SD   | 2.78        | 0.57     |
| 1:BO:118:ARG:HD2  | 1:BO:181:THR:CG2  | 2.34        | 0.57     |
| 5:BE:629:SER:HA   | 5:BE:647:ILE:HG23 | 1.86        | 0.57     |
| 2:BB:206:PHE:HA   | 2:BB:276:LEU:HD11 | 1.87        | 0.57     |
| 3:DQ:331:VAL:HB   | 6:DT:543:GLN:NE2  | 2.20        | 0.57     |
| 8:AX:851:G:N2     | 8:AX:854:A:OP1    | 2.28        | 0.57     |
| 6:CF:540:MET:O    | 6:CF:542:MET:HG3  | 2.04        | 0.57     |
| 7:DN:734:PHE:CZ   | 7:DN:738:MET:HA   | 2.40        | 0.57     |
| 2:DP:261:ARG:HB3  | 2:DP:264:ASN:HB2  | 1.86        | 0.57     |
| 2:BB:293:GLU:CD   | 3:BC:369:ASN:HB2  | 2.24        | 0.57     |
| 5:DS:665:HIS:HB2  | 5:DS:669:LYS:O    | 2.04        | 0.57     |
| 3:DJ:329:LEU:HD23 | 3:DJ:359:PHE:CZ   | 2.40        | 0.57     |
| 3:DJ:336:VAL:HG22 | 3:DJ:356:VAL:HG12 | 1.86        | 0.57     |
| 5:BE:642:ARG:NH2  | 5:BE:664:ILE:HG21 | 2.20        | 0.57     |
| 3:AJ:347:ARG:HD2  | 8:AX:839:C:HI'    | 1.85        | 0.57     |
| 3:CQ:332:LEU:HD13 | 3:CQ:359:PHE:HE1  | 1.69        | 0.57     |
| 3:CJ:332:LEU:CB   | 3:CJ:359:PHE:CE2  | 2.84        | 0.57     |
| 6:AF:548:GLU:HG2  | 6:AF:558:HIS:HB2  | 1.86        | 0.57     |
| 6:BM:524:LYS:HD3  | 8:BX:838:A:C6     | 2.40        | 0.57     |
| 3:AC:407:ILE:HD11 | 6:AF:525:TRP:CZ2  | 2.40        | 0.57     |
| 1:AA:112:HIS:HA   | 1:AA:115:TYR:CE2  | 2.40        | 0.57     |
| 3:BC:375:THR:OG1  | 3:BC:390:VAL:HG12 | 2.05        | 0.57     |
| 5:BL:632:GLN:HE21 | 5:BL:644:GLU:HG2  | 1.70        | 0.57     |
| 7:AU:748:MET:HE3  | 7:AU:753:GLN:N    | 2.20        | 0.57     |
| 6:AM:524:LYS:HB2  | 6:AM:570:LEU:HD21 | 1.87        | 0.57     |
| 8:DX:849:G:H2'    | 8:DX:850:G:C8     | 2.40        | 0.57     |
| 2:CI:227:GLY:HA2  | 2:CI:242:ALA:O    | 2.04        | 0.57     |
| 4:CD:72:ILE:O     | 4:CD:72:ILE:HG22  | 2.04        | 0.57     |
| 6:AM:555:LEU:HD12 | 6:AM:555:LEU:N    | 2.19        | 0.57     |
| 5:CS:663:GLU:N    | 5:CS:672:LYS:O    | 2.35        | 0.57     |
| 8:AY:825:U:H2'    | 8:AY:826:U:C6     | 2.39        | 0.57     |
| 1:DO:119:CYS:HB3  | 1:DO:177:LEU:HD11 | 1.87        | 0.57     |
| 1:AH:140:LEU:O    | 1:AH:141:ILE:HD13 | 2.05        | 0.57     |
| 3:DJ:332:LEU:CB   | 3:DJ:359:PHE:CE1  | 2.84        | 0.57     |
| 3:CQ:376:GLU:HB2  | 3:CQ:391:ASN:N    | 2.20        | 0.57     |
| 3:CQ:376:GLU:OE1  | 3:CQ:376:GLU:HA   | 2.05        | 0.57     |
| 3:CQ:410:LEU:HD21 | 6:CT:562:VAL:CG2  | 2.24        | 0.57     |
| 3:AC:411:ARG:HH21 | 6:AF:561:GLU:CD   | 2.08        | 0.57     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:BV:813:G:N2     | 8:BV:816:A:OP1    | 2.37        | 0.57     |
| 3:AC:360:ASP:OD1  | 3:AC:364:ASN:HB2  | 2.04        | 0.57     |
| 6:AF:553:GLY:O    | 3:AQ:392:LYS:HA   | 2.04        | 0.57     |
| 3:BC:341:GLN:HB3  | 3:BC:355:ARG:NH1  | 2.19        | 0.57     |
| 3:BC:408:VAL:HG22 | 6:BF:564:ILE:HG12 | 1.86        | 0.57     |
| 2:BB:204:VAL:HA   | 2:BB:236:MET:HE2  | 1.85        | 0.57     |
| 2:CI:245:MET:HE2  | 2:CI:258:LEU:CD2  | 2.35        | 0.57     |
| 8:CV:833:U:OP2    | 8:CV:834:U:OP2    | 2.22        | 0.57     |
| 2:BP:294:ALA:C    | 2:BP:295:VAL:HG23 | 2.25        | 0.57     |
| 8:AX:836:U:H6     | 8:AX:836:U:H5'    | 1.70        | 0.57     |
| 8:AY:807:A:C2'    | 8:AY:808:C:H5''   | 2.33        | 0.57     |
| 2:CP:203:LEU:HD21 | 3:CQ:400:PHE:CZ   | 2.35        | 0.57     |
| 1:CH:110:LEU:HA   | 1:CH:113:ILE:HG12 | 1.86        | 0.57     |
| 3:AC:415:ILE:HG22 | 3:AC:415:ILE:O    | 2.05        | 0.57     |
| 6:CM:521:VAL:HG13 | 6:CM:571:TYR:O    | 2.05        | 0.57     |
| 3:AC:407:ILE:HD12 | 6:AF:525:TRP:CE3  | 2.39        | 0.57     |
| 8:AV:867:G:HO2'   | 8:AV:868:G:P      | 2.26        | 0.57     |
| 5:DS:677:ILE:HG21 | 5:DS:679:LEU:HD21 | 1.84        | 0.57     |
| 4:DR:19:THR:HG23  | 4:DR:29:ARG:HG2   | 1.87        | 0.57     |
| 1:AA:108:LYS:CE   | 2:AB:231:GLY:HA3  | 2.35        | 0.57     |
| 8:CV:823:C:H2'    | 8:CV:824:A:C8     | 2.39        | 0.57     |
| 3:AJ:360:ASP:OD1  | 3:AJ:364:ASN:N    | 2.38        | 0.57     |
| 1:AA:141:ILE:CD1  | 1:AA:171:LEU:HD12 | 2.30        | 0.57     |
| 7:CG:705:HIS:C    | 7:CG:707:PRO:HD2  | 2.25        | 0.57     |
| 8:BY:808:C:H2'    | 8:BY:809:G:O4'    | 2.05        | 0.57     |
| 5:DS:680:LYS:HB3  | 5:DS:683:ASN:ND2  | 2.20        | 0.57     |
| 2:AB:265:ILE:O    | 3:AC:402:ARG:HG2  | 2.04        | 0.57     |
| 1:AH:137:HIS:NE2  | 8:AX:834:U:H3'    | 2.20        | 0.57     |
| 5:CE:628:ARG:CD   | 5:CE:631:ILE:HB   | 2.35        | 0.57     |
| 7:AG:718:SER:HB3  | 7:AG:771:GLU:O    | 2.05        | 0.57     |
| 6:AF:583:GLU:O    | 2:AP:295:VAL:HG13 | 2.02        | 0.56     |
| 2:DI:217:ILE:HG12 | 2:DI:268:PHE:CD2  | 2.40        | 0.56     |
| 5:BE:624:TYR:CE1  | 7:BG:761:VAL:CG2  | 2.88        | 0.56     |
| 8:AV:857:U:HO2'   | 8:CX:815:A:H1'    | 1.65        | 0.56     |
| 2:BP:276:LEU:HB2  | 2:BP:290:LYS:CB   | 2.35        | 0.56     |
| 3:BJ:407:ILE:HD11 | 6:BM:525:TRP:CZ3  | 2.40        | 0.56     |
| 6:AF:526:GLY:HA3  | 8:AV:867:G:H2'    | 1.87        | 0.56     |
| 2:CB:203:LEU:HD21 | 3:CC:366:VAL:CG2  | 2.30        | 0.56     |
| 2:CB:237:ASN:OD1  | 8:CV:835:U:O2     | 2.21        | 0.56     |
| 2:BI:219:LEU:CD1  | 2:BI:223:THR:CG2  | 2.74        | 0.56     |
| 1:DO:170:VAL:HG12 | 1:DO:171:LEU:N    | 2.20        | 0.56     |
| 2:CI:208:MET:HA   | 2:CI:232:VAL:HB   | 1.85        | 0.56     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BS:688:GLN:HB3  | 7:BU:760:VAL:HG23 | 1.86        | 0.56     |
| 5:BL:640:ASN:OD1  | 5:BL:640:ASN:O    | 2.22        | 0.56     |
| 2:BI:206:PHE:CG   | 2:BI:279:LEU:HD13 | 2.39        | 0.56     |
| 6:BT:567:ASN:OD1  | 6:BT:568:ASN:ND2  | 2.38        | 0.56     |
| 1:DA:137:HIS:CE1  | 8:DV:834:U:C2     | 2.93        | 0.56     |
| 3:BJ:345:ASN:ND2  | 3:BJ:410:LEU:HD21 | 2.20        | 0.56     |
| 7:DG:771:GLU:OE1  | 7:DG:771:GLU:N    | 2.38        | 0.56     |
| 4:AD:12:GLU:HG3   | 4:AD:79:ASN:HD22  | 1.70        | 0.56     |
| 5:AE:642:ARG:HH21 | 5:AE:664:ILE:HG21 | 1.70        | 0.56     |
| 6:BM:525:TRP:CZ2  | 8:BX:839:C:H1'    | 2.40        | 0.56     |
| 5:CL:635:LEU:CD2  | 5:CL:679:LEU:HD13 | 2.35        | 0.56     |
| 3:AC:332:LEU:HA   | 3:AC:359:PHE:CZ   | 2.26        | 0.56     |
| 7:BU:734:PHE:HD1  | 7:BU:740:LEU:HG   | 1.68        | 0.56     |
| 3:BC:387:SER:CB   | 8:BY:866:U:H4'    | 2.35        | 0.56     |
| 6:AF:520:MET:HE2  | 6:AF:575:VAL:HG12 | 1.87        | 0.56     |
| 5:DL:622:PHE:HE1  | 5:DL:652:GLU:HA   | 1.70        | 0.56     |
| 1:BA:190:THR:O    | 1:BA:194:ARG:HG3  | 2.06        | 0.56     |
| 4:CR:4:GLY:CA     | 4:CR:7:ILE:HD12   | 2.35        | 0.56     |
| 8:CY:830:A:H61    | 8:CY:836:U:C5'    | 2.17        | 0.56     |
| 2:DI:277:ASP:CB   | 2:DI:290:LYS:HZ3  | 2.06        | 0.56     |
| 2:CI:276:LEU:CG   | 3:CJ:357:LYS:NZ   | 2.65        | 0.56     |
| 6:BM:522:LYS:HG2  | 6:BM:571:TYR:CE1  | 2.40        | 0.56     |
| 3:CQ:376:GLU:HB2  | 3:CQ:391:ASN:CB   | 2.35        | 0.56     |
| 2:DP:203:LEU:HD21 | 3:DQ:358:ALA:HB3  | 1.87        | 0.56     |
| 6:CF:571:TYR:HE1  | 6:CF:573:ARG:HG2  | 1.70        | 0.56     |
| 3:CJ:331:VAL:HG21 | 6:CM:563:LEU:HD13 | 1.87        | 0.56     |
| 1:AA:156:SER:HB2  | 1:AA:160:GLU:OE1  | 2.04        | 0.56     |
| 2:BP:289:SER:CB   | 3:BQ:357:LYS:HD3  | 2.35        | 0.56     |
| 7:CN:770:LEU:HD12 | 7:CN:770:LEU:N    | 2.19        | 0.56     |
| 7:CN:734:PHE:HA   | 7:CN:739:ASN:O    | 2.05        | 0.56     |
| 2:BI:276:LEU:HD23 | 2:BI:276:LEU:N    | 2.20        | 0.56     |
| 5:DL:634:TRP:CB   | 5:DL:688:GLN:O    | 2.47        | 0.56     |
| 6:BF:539:TYR:HD2  | 6:BF:566:CYS:HB3  | 1.67        | 0.56     |
| 3:DQ:331:VAL:HG11 | 6:DT:543:GLN:NE2  | 2.21        | 0.56     |
| 3:AJ:333:THR:HA   | 3:AJ:359:PHE:HZ   | 1.68        | 0.56     |
| 3:AJ:402:ARG:HH21 | 8:AX:836:U:H1'    | 1.67        | 0.56     |
| 5:BL:640:ASN:ND2  | 5:BL:666:SER:CB   | 2.69        | 0.56     |
| 4:DK:48:VAL:HG13  | 4:DK:56:ALA:HB3   | 1.84        | 0.56     |
| 8:CY:818:G:O2'    | 8:CY:819:U:H5'    | 2.04        | 0.56     |
| 2:CI:218:GLU:OE1  | 2:CI:267:TYR:OH   | 2.13        | 0.56     |
| 6:BT:521:VAL:CG1  | 6:BT:569:VAL:HG13 | 2.36        | 0.56     |
| 3:BJ:379:LYS:HB2  | 3:BJ:387:SER:HB3  | 1.87        | 0.56     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:DP:247:LEU:HD23 | 2:DP:248:LYS:N    | 2.20        | 0.56     |
| 1:AA:173:ARG:HH12 | 4:AD:39:MET:HG3   | 1.70        | 0.56     |
| 1:AA:139:ASN:ND2  | 8:AV:834:U:O4     | 2.38        | 0.56     |
| 4:AD:5:VAL:HB     | 4:AD:6:PRO:HD3    | 1.86        | 0.56     |
| 6:AM:516:GLY:N    | 6:AM:533:LEU:O    | 2.38        | 0.56     |
| 8:BY:850:G:N2     | 8:BY:856:C:C2     | 2.73        | 0.56     |
| 6:CF:515:THR:HA   | 6:CF:533:LEU:HD23 | 1.87        | 0.56     |
| 3:AJ:324:PHE:CD1  | 3:AJ:325:ASN:N    | 2.74        | 0.56     |
| 8:BY:847:A:O2'    | 8:BY:848:U:H5'    | 2.04        | 0.56     |
| 6:DM:561:GLU:O    | 6:DM:562:VAL:CG2  | 2.53        | 0.56     |
| 2:CP:217:ILE:HD12 | 2:CP:240:LEU:HD11 | 1.87        | 0.56     |
| 5:AS:677:ILE:HG12 | 6:AT:573:ARG:HG2  | 1.87        | 0.56     |
| 5:BL:635:LEU:HD22 | 5:BL:679:LEU:CD1  | 2.35        | 0.56     |
| 1:CH:180:MET:C    | 2:CI:258:LEU:HD12 | 2.25        | 0.56     |
| 5:DE:678:MET:CE   | 6:DF:511:LEU:HD21 | 2.35        | 0.56     |
| 3:CQ:388:LYS:H    | 3:CQ:389:PRO:HD3  | 1.70        | 0.56     |
| 3:AC:401:LEU:HD12 | 3:AC:402:ARG:H    | 1.70        | 0.56     |
| 7:BU:756:ASN:O    | 7:BU:757:ILE:HD13 | 2.06        | 0.56     |
| 6:AT:583:GLU:O    | 6:AT:586:GLU:OXT  | 2.22        | 0.56     |
| 4:DR:51:ARG:HB3   | 8:DY:862:A:OP2    | 2.06        | 0.56     |
| 5:AS:686:LEU:CD2  | 7:AU:762:ILE:HG23 | 2.35        | 0.56     |
| 5:CE:621:ILE:CG2  | 7:CG:741:VAL:HG21 | 2.36        | 0.56     |
| 1:CO:191:GLY:O    | 1:CO:195:VAL:HG23 | 2.05        | 0.56     |
| 3:BJ:408:VAL:CG1  | 6:BM:562:VAL:CG1  | 2.84        | 0.56     |
| 3:BQ:409:VAL:HB   | 6:BT:563:LEU:HB3  | 1.88        | 0.56     |
| 2:AB:237:ASN:HD21 | 8:AV:835:U:H3     | 1.53        | 0.56     |
| 3:DC:358:ALA:HB3  | 3:DC:366:VAL:HG21 | 1.86        | 0.56     |
| 5:BE:651:ASP:HB2  | 6:BF:507:PRO:HD3  | 1.88        | 0.56     |
| 3:AC:370:VAL:HB   | 3:AC:399:MET:HE1  | 1.86        | 0.56     |
| 2:DI:274:LEU:HB3  | 3:DJ:398:LYS:NZ   | 2.21        | 0.56     |
| 5:BL:632:GLN:NE2  | 5:BL:644:GLU:OE2  | 2.37        | 0.56     |
| 8:BY:839:C:O2'    | 8:BY:840:A:H5'    | 2.05        | 0.56     |
| 3:BC:415:ILE:CG2  | 3:BC:415:ILE:O    | 2.51        | 0.56     |
| 8:AY:818:G:O2'    | 8:AY:819:U:H5'    | 2.05        | 0.56     |
| 3:BC:393:ASP:OD1  | 3:BC:394:ARG:N    | 2.38        | 0.56     |
| 6:BT:510:PHE:O    | 6:BT:514:LEU:HG   | 2.06        | 0.56     |
| 2:CB:230:THR:HG21 | 2:CB:241:LYS:HG3  | 1.87        | 0.56     |
| 4:AK:82:MET:O     | 4:AK:86:MET:HG3   | 2.06        | 0.56     |
| 2:DI:203:LEU:O    | 2:DI:206:PHE:HB3  | 2.06        | 0.56     |
| 3:CQ:372:GLU:OE2  | 3:CQ:396:ILE:HD11 | 2.06        | 0.56     |
| 5:CS:639:VAL:HG23 | 6:CT:524:LYS:HE3  | 1.88        | 0.56     |
| 1:DH:138:MET:O    | 1:DH:140:LEU:CD2  | 2.53        | 0.56     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:DP:276:LEU:HD12 | 2:DP:290:LYS:CA   | 2.36        | 0.56     |
| 1:AA:159:ALA:HB1  | 8:AV:849:G:P      | 2.45        | 0.56     |
| 6:AF:558:HIS:C    | 6:AF:559:LEU:HD12 | 2.26        | 0.56     |
| 6:BT:547:THR:HG21 | 6:BT:562:VAL:HG21 | 1.88        | 0.56     |
| 5:AE:674:LEU:HD13 | 6:AF:573:ARG:HD3  | 1.88        | 0.56     |
| 3:AQ:392:LYS:CE   | 8:AV:868:G:H2'    | 2.35        | 0.56     |
| 2:CB:220:LYS:NZ   | 2:CB:263:ASN:OD1  | 2.37        | 0.56     |
| 1:DA:140:LEU:HD13 | 1:DA:180:MET:HE1  | 1.84        | 0.56     |
| 5:CS:635:LEU:HD13 | 5:CS:687:LEU:HD21 | 1.86        | 0.56     |
| 4:DR:80:ALA:HB3   | 4:DR:81:PRO:CD    | 2.32        | 0.56     |
| 2:DB:203:LEU:O    | 2:DB:206:PHE:HB3  | 2.06        | 0.56     |
| 3:BC:340:THR:HG22 | 3:BC:341:GLN:O    | 2.05        | 0.56     |
| 2:AB:210:LEU:O    | 2:AB:229:ILE:HD12 | 2.06        | 0.56     |
| 2:BB:204:VAL:HG22 | 2:BB:236:MET:HE3  | 1.85        | 0.56     |
| 3:DJ:374:TRP:CZ2  | 3:DJ:392:LYS:CD   | 2.89        | 0.56     |
| 4:CR:50:TYR:HB2   | 4:CR:54:ARG:HG2   | 1.88        | 0.56     |
| 2:CB:219:LEU:CD1  | 2:CB:223:THR:HB   | 2.34        | 0.56     |
| 8:BY:838:A:H5'    | 8:BY:839:C:OP1    | 2.05        | 0.56     |
| 4:BD:5:VAL:CB     | 4:BD:6:PRO:HD3    | 2.36        | 0.56     |
| 1:DA:173:ARG:CZ   | 8:DV:834:U:O2     | 2.54        | 0.56     |
| 5:DE:678:MET:HE1  | 6:DF:511:LEU:HD23 | 1.86        | 0.56     |
| 8:AV:817:A:N6     | 8:AV:818:G:O6     | 2.38        | 0.56     |
| 7:DN:716:LYS:O    | 7:DN:773:LEU:CB   | 2.54        | 0.56     |
| 1:AA:183:GLU:O    | 1:AA:183:GLU:HG2  | 2.06        | 0.56     |
| 3:AQ:388:LYS:N    | 3:AQ:389:PRO:HD3  | 2.21        | 0.56     |
| 3:BQ:344:ILE:HG23 | 3:BQ:406:VAL:HG13 | 1.87        | 0.56     |
| 1:BO:147:GLU:OE2  | 1:BO:165:ARG:NE   | 2.39        | 0.56     |
| 6:DF:523:LEU:HD23 | 6:DF:568:ASN:HB3  | 1.87        | 0.56     |
| 3:CJ:342:VAL:HG21 | 3:CJ:356:VAL:HG21 | 1.87        | 0.56     |
| 7:AU:725:ARG:NE   | 7:AU:749:ALA:CB   | 2.60        | 0.56     |
| 4:CK:9:VAL:HG22   | 4:CK:81:PRO:HD3   | 1.86        | 0.56     |
| 5:CE:661:ALA:HB3  | 5:CE:677:ILE:HD12 | 1.88        | 0.56     |
| 1:BO:178:VAL:CG1  | 2:BP:264:ASN:HD21 | 2.14        | 0.56     |
| 8:AV:836:U:H5'    | 8:AV:836:U:H6     | 1.69        | 0.56     |
| 5:CS:683:ASN:ND2  | 6:CT:570:LEU:CD1  | 2.58        | 0.56     |
| 2:DB:276:LEU:HD12 | 2:DB:290:LYS:CB   | 2.36        | 0.56     |
| 8:BV:841:G:C5     | 8:BV:842:U:C5     | 2.93        | 0.56     |
| 5:AL:686:LEU:CD2  | 7:AN:762:ILE:HG12 | 2.35        | 0.56     |
| 1:BA:138:MET:O    | 1:BA:140:LEU:HD23 | 2.05        | 0.56     |
| 1:DO:114:ASP:O    | 1:DO:186:PRO:HG2  | 2.05        | 0.56     |
| 4:CR:81:PRO:HD2   | 4:CR:84:LYS:HD2   | 1.87        | 0.56     |
| 3:DJ:369:ASN:N    | 3:DJ:397:SER:O    | 2.38        | 0.56     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:CP:240:LEU:N    | 2:CP:258:LEU:O    | 2.32        | 0.56     |
| 2:CP:218:GLU:O    | 2:CP:266:ARG:HB3  | 2.06        | 0.56     |
| 2:DP:210:LEU:CD2  | 2:DP:274:LEU:CD2  | 2.81        | 0.56     |
| 8:BX:865:C:O2'    | 8:BX:866:U:O5'    | 2.24        | 0.56     |
| 3:CC:347:ARG:NH2  | 8:CV:839:C:H4'    | 2.20        | 0.56     |
| 5:DS:635:LEU:CD2  | 5:DS:679:LEU:HD13 | 2.35        | 0.56     |
| 5:DS:674:LEU:HD13 | 6:DT:573:ARG:HD2  | 1.86        | 0.56     |
| 5:BS:665:HIS:ND1  | 5:BS:667:LYS:HB3  | 2.21        | 0.56     |
| 5:CS:642:ARG:HE   | 5:CS:664:ILE:HG21 | 1.71        | 0.56     |
| 2:AB:211:SER:CB   | 2:BB:212:HIS:CD2  | 2.89        | 0.56     |
| 8:DY:830:A:N6     | 8:DY:836:U:C5'    | 2.69        | 0.56     |
| 3:BJ:342:VAL:CG1  | 3:BJ:409:VAL:CG1  | 2.84        | 0.56     |
| 2:CP:286:LYS:O    | 2:CP:290:LYS:N    | 2.29        | 0.56     |
| 4:AR:28:TYR:OH    | 7:AU:769:MET:SD   | 2.63        | 0.56     |
| 1:DH:102:THR:HA   | 1:DH:107:SER:CB   | 2.35        | 0.56     |
| 7:CU:717:LEU:HD23 | 7:CU:772:ALA:HB2  | 1.87        | 0.56     |
| 2:DI:205:ARG:O    | 2:DI:209:LYS:HG2  | 2.06        | 0.56     |
| 6:CM:508:LYS:N    | 6:CM:509:PRO:CD   | 2.69        | 0.56     |
| 1:CH:132:LYS:HE2  | 4:CK:84:LYS:HG3   | 1.87        | 0.56     |
| 5:DS:618:ILE:HG23 | 7:DU:713:MET:SD   | 2.44        | 0.56     |
| 3:BQ:347:ARG:O    | 6:BT:525:TRP:CH2  | 2.59        | 0.56     |
| 5:BS:674:LEU:HD13 | 6:BT:573:ARG:HD2  | 1.87        | 0.56     |
| 4:DD:27:VAL:HG11  | 4:DD:29:ARG:CZ    | 2.35        | 0.56     |
| 5:DE:630:ARG:C    | 5:DE:631:ILE:HD13 | 2.26        | 0.56     |
| 3:AJ:333:THR:O    | 3:AJ:336:VAL:CG1  | 2.53        | 0.56     |
| 1:AA:108:LYS:HD2  | 2:AB:239:HIS:CD2  | 2.41        | 0.56     |
| 3:BC:377:VAL:HG23 | 3:BC:389:PRO:O    | 2.06        | 0.56     |
| 6:AT:539:TYR:O    | 6:AT:539:TYR:CD1  | 2.59        | 0.56     |
| 2:BI:207:LEU:HD12 | 2:BI:236:MET:HE2  | 1.87        | 0.56     |
| 2:BI:265:ILE:HG21 | 2:BI:268:PHE:CE1  | 2.41        | 0.56     |
| 3:DQ:359:PHE:HA   | 3:DQ:364:ASN:O    | 2.05        | 0.56     |
| 7:CG:705:HIS:CG   | 7:CG:736:PRO:HB3  | 2.41        | 0.56     |
| 2:CI:219:LEU:C    | 2:CI:266:ARG:HB2  | 2.27        | 0.56     |
| 7:DN:709:LEU:HD21 | 7:DN:713:MET:HE2  | 1.87        | 0.56     |
| 6:DT:549:GLU:OE2  | 6:DT:551:ILE:HD11 | 2.06        | 0.56     |
| 4:BD:60:GLN:O     | 4:BD:61:VAL:HG13  | 2.06        | 0.56     |
| 2:AB:220:LYS:O    | 2:AB:222:GLY:N    | 2.39        | 0.56     |
| 1:AA:186:PRO:HB2  | 1:AA:188:LYS:HG2  | 1.87        | 0.56     |
| 8:CX:844:U:H2'    | 8:CX:845:C:C6     | 2.41        | 0.56     |
| 5:BL:629:SER:HA   | 5:BL:647:ILE:HG23 | 1.88        | 0.56     |
| 2:BP:209:LYS:C    | 2:BP:279:LEU:HD22 | 2.26        | 0.56     |
| 3:BQ:362:HIS:CE1  | 8:BY:830:A:H62    | 2.23        | 0.56     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:BD:9:VAL:HG13   | 4:BD:80:ALA:HA    | 1.88        | 0.56     |
| 3:DJ:366:VAL:HG22 | 3:DJ:400:PHE:HD1  | 1.68        | 0.56     |
| 7:AN:709:LEU:HD13 | 7:AN:731:LEU:HD21 | 1.88        | 0.56     |
| 1:AH:154:LYS:HB2  | 8:CV:813:G:C5'    | 2.36        | 0.56     |
| 1:CA:187:PRO:HA   | 1:CA:190:THR:HG23 | 1.88        | 0.56     |
| 1:DA:173:ARG:CZ   | 8:DV:834:U:C2     | 2.88        | 0.56     |
| 2:CP:206:PHE:CE1  | 2:CP:279:LEU:CD1  | 2.88        | 0.56     |
| 1:DH:115:TYR:HA   | 1:DH:186:PRO:HD2  | 1.87        | 0.56     |
| 8:AV:804:G:O5'    | 8:AV:804:G:C8     | 2.59        | 0.56     |
| 1:CA:186:PRO:HG2  | 1:CA:189:ASP:HB2  | 1.86        | 0.56     |
| 5:DS:646:CYS:O    | 5:DS:648:ILE:HD12 | 2.06        | 0.56     |
| 1:CO:140:LEU:HD13 | 1:CO:180:MET:CE   | 2.36        | 0.55     |
| 3:CQ:375:THR:HG23 | 3:CQ:375:THR:O    | 2.05        | 0.55     |
| 1:DH:140:LEU:HD11 | 1:DH:180:MET:SD   | 2.46        | 0.55     |
| 2:DP:209:LYS:CB   | 2:DP:279:LEU:HD23 | 2.36        | 0.55     |
| 6:BM:525:TRP:HZ2  | 8:BX:839:C:H1'    | 1.71        | 0.55     |
| 5:CS:618:ILE:CG2  | 7:CU:709:LEU:HD21 | 2.28        | 0.55     |
| 2:CI:204:VAL:HA   | 2:CI:236:MET:HE2  | 1.88        | 0.55     |
| 2:BI:280:LEU:CD1  | 2:BI:286:LYS:HD2  | 2.25        | 0.55     |
| 1:BO:137:HIS:CE1  | 8:BY:834:U:O2     | 2.59        | 0.55     |
| 3:BC:408:VAL:HA   | 6:BF:563:LEU:O    | 2.06        | 0.55     |
| 2:BB:290:LYS:HB3  | 3:BC:357:LYS:HE3  | 1.86        | 0.55     |
| 1:CH:118:ARG:HB3  | 1:CH:181:THR:HG23 | 1.88        | 0.55     |
| 1:BO:122:GLN:HE22 | 8:BY:839:C:H5'    | 1.71        | 0.55     |
| 3:DQ:347:ARG:HA   | 3:DQ:407:ILE:HD11 | 1.86        | 0.55     |
| 5:AL:689:SER:O    | 5:AL:690:VAL:HB   | 2.05        | 0.55     |
| 4:BR:66:SER:HB3   | 8:BY:833:U:O2     | 2.06        | 0.55     |
| 5:AL:643:ILE:HG23 | 5:AL:662:GLU:O    | 2.06        | 0.55     |
| 1:DO:178:VAL:HG13 | 2:DP:264:ASN:ND2  | 2.21        | 0.55     |
| 8:BX:821:G:H3'    | 8:BX:822:G:H5''   | 1.89        | 0.55     |
| 6:CF:530:LYS:O    | 6:CF:548:GLU:N    | 2.37        | 0.55     |
| 4:BK:17:ILE:HA    | 4:BK:30:GLY:O     | 2.07        | 0.55     |
| 2:BB:284:GLU:N    | 2:BB:285:PRO:CD   | 2.70        | 0.55     |
| 1:AH:169:LEU:HG   | 4:AK:73:LEU:HD12  | 1.88        | 0.55     |
| 3:AJ:408:VAL:CG1  | 3:AJ:410:LEU:HD22 | 2.26        | 0.55     |
| 3:CQ:407:ILE:HG22 | 3:CQ:408:VAL:HG23 | 1.89        | 0.55     |
| 5:CE:621:ILE:HD11 | 7:CG:733:GLY:C    | 2.27        | 0.55     |
| 5:CE:621:ILE:CD1  | 7:CG:741:VAL:CG2  | 2.84        | 0.55     |
| 7:CG:729:GLY:HA3  | 7:CG:742:ILE:CG2  | 2.36        | 0.55     |
| 6:BM:567:ASN:OD1  | 6:BM:568:ASN:N    | 2.38        | 0.55     |
| 6:BM:524:LYS:CB   | 8:BX:838:A:C2     | 2.85        | 0.55     |
| 3:AC:407:ILE:HG23 | 6:AF:568:ASN:CB   | 2.35        | 0.55     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:CV:866:U:H2'    | 8:CV:867:G:C4'    | 2.36        | 0.55     |
| 2:AI:279:LEU:HD11 | 3:AJ:357:LYS:NZ   | 2.21        | 0.55     |
| 5:CS:635:LEU:HD13 | 5:CS:687:LEU:CD2  | 2.36        | 0.55     |
| 7:CN:713:MET:HA   | 7:CN:731:LEU:HD23 | 1.87        | 0.55     |
| 1:BA:131:PHE:CD1  | 1:BA:140:LEU:HD13 | 2.40        | 0.55     |
| 6:BF:536:VAL:HG12 | 6:BF:537:ASP:N    | 2.21        | 0.55     |
| 4:CD:80:ALA:HB3   | 4:CD:81:PRO:HD3   | 1.87        | 0.55     |
| 6:AM:566:CYS:SG   | 6:AM:566:CYS:O    | 2.63        | 0.55     |
| 4:AR:83:LEU:HD13  | 4:AR:86:MET:CE    | 2.37        | 0.55     |
| 3:CJ:342:VAL:HG21 | 3:CJ:356:VAL:CG2  | 2.36        | 0.55     |
| 1:DH:137:HIS:NE2  | 8:DX:834:U:H3'    | 2.22        | 0.55     |
| 2:AI:280:LEU:CB   | 2:AI:286:LYS:HD3  | 2.31        | 0.55     |
| 3:BJ:408:VAL:HG13 | 6:BM:564:ILE:CG1  | 2.22        | 0.55     |
| 6:AF:524:LYS:O    | 6:AF:524:LYS:HG3  | 2.05        | 0.55     |
| 6:BF:547:THR:HG21 | 6:BF:562:VAL:HG23 | 1.77        | 0.55     |
| 2:AB:230:THR:O    | 2:BB:212:HIS:CE1  | 2.60        | 0.55     |
| 8:BY:841:G:N2     | 8:BY:866:U:C2     | 2.74        | 0.55     |
| 4:CR:5:VAL:HB     | 4:CR:6:PRO:HD3    | 1.88        | 0.55     |
| 2:CP:267:TYR:HB2  | 3:CQ:400:PHE:O    | 2.06        | 0.55     |
| 1:BO:115:TYR:HA   | 1:BO:186:PRO:HD3  | 1.87        | 0.55     |
| 2:DP:261:ARG:O    | 2:DP:262:GLY:C    | 2.44        | 0.55     |
| 6:CT:549:GLU:O    | 6:CT:555:LEU:HD12 | 2.06        | 0.55     |
| 4:DD:23:ASN:OD1   | 4:DD:24:THR:HG23  | 2.07        | 0.55     |
| 6:DM:537:ASP:OD1  | 6:DM:541:ASN:N    | 2.40        | 0.55     |
| 5:BL:621:ILE:HD12 | 7:BN:739:ASN:HB2  | 1.88        | 0.55     |
| 6:DF:550:TYR:CB   | 6:DF:554:ALA:O    | 2.54        | 0.55     |
| 1:DH:137:HIS:NE2  | 8:DX:834:U:H2'    | 2.21        | 0.55     |
| 6:CF:550:TYR:OH   | 6:CF:573:ARG:NH2  | 2.40        | 0.55     |
| 3:BJ:407:ILE:HG23 | 6:BM:568:ASN:CB   | 2.37        | 0.55     |
| 5:BS:661:ALA:HB2  | 5:BS:677:ILE:HD12 | 1.88        | 0.55     |
| 5:AS:688:GLN:HG3  | 7:AU:760:VAL:HG23 | 1.88        | 0.55     |
| 2:CB:220:LYS:HB3  | 3:CC:347:ARG:NH1  | 2.21        | 0.55     |
| 8:BV:838:A:O2'    | 8:BV:839:C:H5'    | 2.05        | 0.55     |
| 2:BP:240:LEU:HB3  | 2:BP:243:VAL:CG2  | 2.36        | 0.55     |
| 3:AJ:312:THR:CB   | 3:AJ:337:LYS:HZ1  | 2.19        | 0.55     |
| 8:BX:853:A:N6     | 8:BX:854:A:N1     | 2.54        | 0.55     |
| 5:DS:621:ILE:HG12 | 5:DS:621:ILE:O    | 2.06        | 0.55     |
| 1:AO:173:ARG:NH2  | 8:AY:834:U:O2     | 2.39        | 0.55     |
| 1:DA:173:ARG:NH2  | 8:DV:834:U:C2     | 2.74        | 0.55     |
| 1:DA:121:LEU:CD1  | 4:DD:69:ARG:HD2   | 2.36        | 0.55     |
| 5:DL:653:TYR:CD2  | 8:DX:831:A:H2'    | 2.41        | 0.55     |
| 3:DC:318:LYS:O    | 3:DC:322:GLU:N    | 2.39        | 0.55     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:DS:639:VAL:HG12 | 5:DS:639:VAL:O    | 2.06        | 0.55     |
| 6:DM:566:CYS:SG   | 6:DM:566:CYS:O    | 2.63        | 0.55     |
| 3:CJ:342:VAL:HG11 | 3:CJ:409:VAL:HG13 | 1.86        | 0.55     |
| 3:CJ:359:PHE:HA   | 3:CJ:364:ASN:O    | 2.06        | 0.55     |
| 5:AE:621:ILE:CD1  | 7:AG:741:VAL:CG2  | 2.75        | 0.55     |
| 7:BU:705:HIS:CB   | 7:BU:734:PHE:HE2  | 2.19        | 0.55     |
| 3:CC:407:ILE:HA   | 6:CF:568:ASN:ND2  | 2.22        | 0.55     |
| 6:BF:539:TYR:CG   | 8:BV:837:G:C6     | 2.95        | 0.55     |
| 1:CH:140:LEU:HD11 | 1:CH:180:MET:SD   | 2.45        | 0.55     |
| 1:DO:115:TYR:CA   | 1:DO:186:PRO:HD3  | 2.36        | 0.55     |
| 5:CS:621:ILE:HD11 | 7:CU:741:VAL:CG2  | 2.34        | 0.55     |
| 8:AX:855:C:H2'    | 8:AX:856:C:C6     | 2.41        | 0.55     |
| 2:BI:203:LEU:HD22 | 3:BJ:360:ASP:HB3  | 1.89        | 0.55     |
| 4:CK:16:HIS:O     | 4:CK:31:LYS:HA    | 2.06        | 0.55     |
| 2:BI:269:ILE:HD12 | 3:BJ:396:ILE:HD13 | 1.88        | 0.55     |
| 6:DT:510:PHE:CE2  | 6:DT:514:LEU:HD21 | 2.41        | 0.55     |
| 7:DN:738:MET:CB   | 7:DN:764:GLY:HA3  | 2.37        | 0.55     |
| 5:CE:628:ARG:HD2  | 5:CE:631:ILE:HB   | 1.88        | 0.55     |
| 2:CI:224:GLN:CG   | 2:CI:246:THR:HB   | 2.36        | 0.55     |
| 4:DD:4:GLY:HA3    | 4:DD:7:ILE:CD1    | 2.36        | 0.55     |
| 6:DM:575:VAL:HG13 | 6:DM:576:GLU:OE1  | 2.06        | 0.55     |
| 7:DN:725:ARG:HB2  | 7:DN:748:MET:O    | 2.07        | 0.55     |
| 7:BG:720:LYS:NZ   | 7:BG:771:GLU:OE2  | 2.40        | 0.55     |
| 1:AA:138:MET:O    | 1:AA:140:LEU:HG   | 2.05        | 0.55     |
| 2:DI:209:LYS:CB   | 2:DI:279:LEU:CD2  | 2.85        | 0.55     |
| 3:AQ:410:LEU:CD2  | 6:AT:562:VAL:HG13 | 2.36        | 0.55     |
| 3:CQ:342:VAL:CG1  | 3:CQ:410:LEU:O    | 2.54        | 0.55     |
| 2:DP:290:LYS:O    | 2:DP:293:GLU:N    | 2.39        | 0.55     |
| 6:BM:540:MET:HB2  | 6:BM:566:CYS:SG   | 2.46        | 0.55     |
| 5:BS:624:TYR:CD1  | 5:BS:624:TYR:C    | 2.80        | 0.55     |
| 5:DS:635:LEU:HD22 | 5:DS:679:LEU:CD1  | 2.36        | 0.55     |
| 4:BR:81:PRO:CB    | 4:BR:84:LYS:HB3   | 2.37        | 0.55     |
| 3:BC:347:ARG:O    | 6:BF:525:TRP:CZ2  | 2.58        | 0.55     |
| 2:AP:232:VAL:HG13 | 2:AP:237:ASN:O    | 2.06        | 0.55     |
| 2:DB:249:ASN:ND2  | 8:DV:859:A:C5'    | 2.68        | 0.55     |
| 2:CP:276:LEU:HB2  | 2:CP:290:LYS:CG   | 2.37        | 0.55     |
| 3:BJ:412:ASN:CB   | 3:BJ:413:PRO:CD   | 2.85        | 0.55     |
| 3:BC:348:ASN:HB3  | 3:BC:350:LYS:CG   | 2.36        | 0.55     |
| 1:DA:171:LEU:HD23 | 1:DA:172:LEU:N    | 2.22        | 0.55     |
| 4:DR:83:LEU:HD12  | 4:DR:83:LEU:N     | 2.21        | 0.55     |
| 8:BY:819:U:C4     | 8:BY:820:C:C4     | 2.95        | 0.55     |
| 3:DC:393:ASP:OD1  | 3:DC:394:ARG:N    | 2.39        | 0.55     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:BB:217:ILE:HD13 | 2:BB:268:PHE:CE2  | 2.42        | 0.55     |
| 6:DM:539:TYR:CZ   | 8:DX:837:G:C2     | 2.95        | 0.55     |
| 4:BK:48:VAL:O     | 4:BK:55:VAL:HA    | 2.07        | 0.55     |
| 3:CQ:331:VAL:HG22 | 3:CQ:332:LEU:HD23 | 1.87        | 0.55     |
| 1:DH:178:VAL:CB   | 2:DI:264:ASN:ND2  | 2.70        | 0.55     |
| 7:DU:735:ASP:OD2  | 7:DU:739:ASN:ND2  | 2.39        | 0.55     |
| 5:AS:634:TRP:CZ2  | 5:AS:642:ARG:HD2  | 2.41        | 0.55     |
| 1:DO:169:LEU:HD23 | 4:DR:73:LEU:HB2   | 1.88        | 0.55     |
| 2:CI:210:LEU:O    | 2:CI:229:ILE:HD12 | 2.06        | 0.55     |
| 1:CH:175:GLU:HG3  | 8:CX:835:U:OP2    | 2.07        | 0.55     |
| 6:BF:558:HIS:NE2  | 3:BQ:413:PRO:HD3  | 2.21        | 0.55     |
| 5:CS:678:MET:HB3  | 6:CT:572:ILE:HG22 | 1.86        | 0.55     |
| 2:DB:274:LEU:HD12 | 2:DB:275:PRO:HD2  | 1.88        | 0.55     |
| 7:CU:756:ASN:OD1  | 7:CU:757:ILE:N    | 2.39        | 0.55     |
| 4:DK:81:PRO:HB3   | 4:DK:84:LYS:HB3   | 1.88        | 0.55     |
| 2:CB:223:THR:CG2  | 2:CB:247:LEU:CD2  | 2.84        | 0.55     |
| 5:CL:634:TRP:HZ2  | 5:CL:642:ARG:CD   | 2.20        | 0.55     |
| 8:BX:849:G:H2'    | 8:BX:850:G:H8     | 1.72        | 0.55     |
| 1:CA:151:ILE:O    | 1:CA:151:ILE:CG2  | 2.55        | 0.55     |
| 5:DS:655:ASN:HD21 | 8:DY:831:A:H2     | 1.51        | 0.55     |
| 8:AV:803:C:O2'    | 8:AV:804:G:OP2    | 2.19        | 0.55     |
| 6:AF:551:ILE:O    | 6:AF:554:ALA:HB3  | 2.06        | 0.55     |
| 4:DD:42:GLN:HG2   | 4:DD:60:GLN:HE21  | 1.72        | 0.55     |
| 8:CV:849:G:C2     | 8:CV:857:U:O2     | 2.59        | 0.55     |
| 1:BA:123:ASP:OD1  | 4:BD:69:ARG:NH2   | 2.40        | 0.55     |
| 3:AJ:347:ARG:O    | 6:AM:525:TRP:HH2  | 1.90        | 0.55     |
| 5:BL:621:ILE:HA   | 5:BL:624:TYR:CD1  | 2.42        | 0.55     |
| 6:CT:565:ARG:NH2  | 8:CY:837:G:N3     | 2.55        | 0.55     |
| 7:AN:745:CYS:SG   | 7:AN:760:VAL:HG11 | 2.46        | 0.55     |
| 6:CF:555:LEU:HD12 | 6:CF:555:LEU:O    | 2.06        | 0.55     |
| 8:AV:848:U:O2'    | 8:AV:849:G:H5''   | 2.07        | 0.55     |
| 3:BJ:347:ARG:HD2  | 8:BX:839:C:H4'    | 1.89        | 0.55     |
| 7:BN:741:VAL:HG12 | 7:BN:759:MET:SD   | 2.47        | 0.55     |
| 2:CB:217:ILE:HG12 | 2:CB:268:PHE:CD2  | 2.42        | 0.55     |
| 1:DA:182:VAL:HG22 | 2:DB:257:THR:HG22 | 1.89        | 0.55     |
| 1:BO:181:THR:HB   | 2:BP:255:LEU:HD13 | 1.88        | 0.55     |
| 4:DR:81:PRO:HB3   | 4:DR:84:LYS:HB3   | 1.89        | 0.55     |
| 2:CI:245:MET:CE   | 2:CI:258:LEU:HD22 | 2.37        | 0.55     |
| 7:AN:705:HIS:CD2  | 7:AN:706:PRO:CD   | 2.90        | 0.55     |
| 2:AI:217:ILE:HG23 | 2:AI:265:ILE:CG2  | 2.36        | 0.55     |
| 7:AN:719:LEU:N    | 7:AN:719:LEU:HD12 | 2.21        | 0.55     |
| 8:AX:845:C:O5'    | 8:AX:845:C:H6     | 1.89        | 0.55     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:DG:725:ARG:HE   | 7:DG:749:ALA:CB   | 2.20        | 0.55     |
| 3:DC:342:VAL:CG2  | 3:DC:356:VAL:HG23 | 2.37        | 0.55     |
| 3:DC:390:VAL:HG13 | 3:DC:391:ASN:O    | 2.07        | 0.55     |
| 3:CQ:408:VAL:HG12 | 3:CQ:410:LEU:HG   | 1.89        | 0.55     |
| 8:CY:838:A:C2'    | 8:CY:839:C:C6     | 2.87        | 0.55     |
| 5:DE:624:TYR:CD2  | 7:DG:761:VAL:HG21 | 2.42        | 0.55     |
| 2:BP:276:LEU:HB2  | 2:BP:290:LYS:CG   | 2.37        | 0.55     |
| 4:CR:88:ASN:O     | 4:CR:91:GLN:HG2   | 2.07        | 0.55     |
| 6:BM:530:LYS:N    | 6:BM:548:GLU:O    | 2.37        | 0.55     |
| 3:BJ:347:ARG:HH11 | 8:BX:840:A:H5'    | 1.71        | 0.55     |
| 3:AC:363:CYS:HB2  | 6:AF:565:ARG:CZ   | 2.37        | 0.55     |
| 7:BU:709:LEU:CD1  | 7:BU:734:PHE:HB3  | 2.36        | 0.55     |
| 5:AE:689:SER:O    | 5:AE:690:VAL:HG12 | 2.06        | 0.55     |
| 3:DJ:352:LEU:HD23 | 3:DJ:372:GLU:CB   | 2.37        | 0.55     |
| 3:DJ:362:HIS:ND1  | 8:DX:836:U:H2'    | 2.22        | 0.55     |
| 3:AJ:340:THR:HG21 | 3:AJ:415:ILE:HG13 | 1.89        | 0.55     |
| 3:AJ:365:MET:O    | 3:AJ:400:PHE:HA   | 2.07        | 0.55     |
| 6:DF:533:LEU:CD1  | 6:DF:544:LEU:HD23 | 2.36        | 0.55     |
| 1:BH:151:ILE:HG22 | 1:BH:153:PRO:HD3  | 1.87        | 0.55     |
| 5:BL:628:ARG:HA   | 5:BL:631:ILE:HD12 | 1.88        | 0.55     |
| 8:AY:817:A:O2'    | 8:AY:818:G:H5'    | 2.06        | 0.55     |
| 4:DD:42:GLN:NE2   | 7:DG:708:GLU:OE1  | 2.40        | 0.55     |
| 8:DV:804:G:O5'    | 8:DV:804:G:H8     | 1.89        | 0.55     |
| 3:AQ:357:LYS:HB3  | 3:AQ:366:VAL:HG12 | 1.88        | 0.55     |
| 4:BK:55:VAL:CG1   | 4:BK:57:GLN:HE21  | 2.20        | 0.55     |
| 5:BE:690:VAL:O    | 5:BE:690:VAL:CG1  | 2.53        | 0.55     |
| 2:BP:204:VAL:O    | 2:BP:208:MET:HE3  | 2.07        | 0.55     |
| 6:BF:539:TYR:O    | 6:BF:566:CYS:CB   | 2.55        | 0.55     |
| 8:AX:866:U:C3'    | 8:AX:867:G:H5''   | 2.31        | 0.55     |
| 3:BC:362:HIS:O    | 3:BC:363:CYS:HB3  | 2.06        | 0.55     |
| 7:AG:750:THR:O    | 7:AG:751:SER:OG   | 2.24        | 0.55     |
| 8:BX:851:G:H21    | 8:BX:854:A:N6     | 2.03        | 0.55     |
| 4:DK:67:LYS:HE3   | 7:DN:767:ILE:O    | 2.06        | 0.55     |
| 1:AA:187:PRO:HA   | 1:AA:190:THR:HG23 | 1.89        | 0.55     |
| 2:CP:275:PRO:O    | 2:CP:279:LEU:HG   | 2.07        | 0.55     |
| 8:BY:819:U:C4     | 8:BY:820:C:N4     | 2.76        | 0.55     |
| 6:BF:549:GLU:O    | 6:BF:549:GLU:HG3  | 2.07        | 0.55     |
| 3:CC:409:VAL:O    | 3:CC:410:LEU:HD23 | 2.07        | 0.54     |
| 3:AQ:407:ILE:CD1  | 6:AT:525:TRP:HZ3  | 2.19        | 0.54     |
| 3:CJ:342:VAL:HG11 | 3:CJ:409:VAL:CG1  | 2.37        | 0.54     |
| 5:CE:674:LEU:CD1  | 6:CF:573:ARG:HD3  | 2.37        | 0.54     |
| 2:BP:210:LEU:CD2  | 2:BP:274:LEU:HD11 | 2.37        | 0.54     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:BT:511:LEU:HD11 | 6:BT:540:MET:HE1  | 1.88        | 0.54     |
| 3:CC:347:ARG:HA   | 3:CC:407:ILE:CD1  | 2.37        | 0.54     |
| 2:AI:206:PHE:HE1  | 2:AI:210:LEU:HD21 | 1.68        | 0.54     |
| 5:DE:618:ILE:HG12 | 7:DG:713:MET:CE   | 2.36        | 0.54     |
| 6:CF:508:LYS:CB   | 6:CF:509:PRO:CD   | 2.85        | 0.54     |
| 2:DP:247:LEU:HD22 | 2:DP:250:ARG:N    | 2.21        | 0.54     |
| 4:AR:38:ASN:ND2   | 8:AY:833:U:O4     | 2.39        | 0.54     |
| 8:BY:804:G:H3'    | 8:BY:805:U:H5''   | 1.88        | 0.54     |
| 4:CR:38:ASN:O     | 4:CR:39:MET:HB2   | 2.07        | 0.54     |
| 2:CP:220:LYS:O    | 2:CP:266:ARG:NH2  | 2.40        | 0.54     |
| 8:CY:839:C:C2'    | 8:CY:840:A:H5'    | 2.37        | 0.54     |
| 6:CM:524:LYS:HA   | 6:CM:570:LEU:HD21 | 1.88        | 0.54     |
| 1:DH:118:ARG:HB3  | 1:DH:181:THR:HG23 | 1.89        | 0.54     |
| 4:CR:91:GLN:HG3   | 4:CR:91:GLN:O     | 2.07        | 0.54     |
| 3:AC:332:LEU:HG   | 3:AC:359:PHE:CE2  | 2.42        | 0.54     |
| 6:AF:552:ASP:HA   | 8:AV:868:G:H5'    | 1.89        | 0.54     |
| 1:CH:137:HIS:NE2  | 8:CX:834:U:C2     | 2.76        | 0.54     |
| 4:BR:58:LEU:HD13  | 4:BR:61:VAL:HG12  | 1.89        | 0.54     |
| 5:BS:667:LYS:O    | 5:BS:668:THR:CG2  | 2.54        | 0.54     |
| 4:CR:9:VAL:N      | 4:CR:79:ASN:HD22  | 2.05        | 0.54     |
| 2:AI:293:GLU:HA   | 2:AI:293:GLU:OE1  | 2.06        | 0.54     |
| 2:AI:267:TYR:CA   | 3:AJ:400:PHE:O    | 2.55        | 0.54     |
| 1:DH:192:ILE:CD1  | 4:DK:92:GLY:N     | 2.70        | 0.54     |
| 7:BG:732:ARG:HG3  | 7:BG:743:ASP:HB2  | 1.88        | 0.54     |
| 1:DH:169:LEU:HD23 | 4:DK:73:LEU:HB2   | 1.89        | 0.54     |
| 1:DH:167:LEU:O    | 1:DH:168:GLY:C    | 2.43        | 0.54     |
| 7:AG:705:HIS:NE2  | 7:AG:736:PRO:HG3  | 2.22        | 0.54     |
| 6:DM:561:GLU:O    | 6:DM:562:VAL:HG23 | 2.07        | 0.54     |
| 8:DX:842:U:C2'    | 8:DX:843:C:H5'    | 2.36        | 0.54     |
| 5:CE:621:ILE:HG21 | 7:CG:761:VAL:HG22 | 1.88        | 0.54     |
| 1:AA:155:ASN:HD21 | 8:CX:812:U:HO2'   | 1.47        | 0.54     |
| 2:BP:277:ASP:N    | 2:BP:290:LYS:CD   | 2.70        | 0.54     |
| 3:AC:361:ARG:C    | 3:AC:363:CYS:H    | 2.10        | 0.54     |
| 2:CI:236:MET:SD   | 3:CJ:402:ARG:NH1  | 2.80        | 0.54     |
| 7:AU:731:LEU:HD13 | 7:AU:740:LEU:CD2  | 2.35        | 0.54     |
| 3:AJ:329:LEU:CB   | 3:AJ:359:PHE:HE1  | 2.20        | 0.54     |
| 6:AM:539:TYR:O    | 6:AM:540:MET:HB2  | 2.07        | 0.54     |
| 6:CF:511:LEU:HD21 | 6:CF:536:VAL:HG11 | 1.88        | 0.54     |
| 7:AG:719:LEU:N    | 7:AG:719:LEU:HD12 | 2.23        | 0.54     |
| 2:CB:245:MET:O    | 2:CB:253:VAL:N    | 2.32        | 0.54     |
| 8:BV:803:C:O2     | 8:BV:826:U:O2     | 2.25        | 0.54     |
| 3:AQ:357:LYS:HB3  | 3:AQ:366:VAL:O    | 2.06        | 0.54     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AP:270:LEU:HD21 | 3:AQ:400:PHE:HB2  | 1.88        | 0.54     |
| 2:DI:276:LEU:HD12 | 2:DI:290:LYS:HA   | 1.88        | 0.54     |
| 5:DE:688:GLN:OE1  | 7:DG:757:ILE:HG13 | 2.07        | 0.54     |
| 2:DP:206:PHE:HZ   | 2:DP:276:LEU:CD2  | 2.20        | 0.54     |
| 5:AE:686:LEU:CD2  | 7:AG:762:ILE:HG12 | 2.38        | 0.54     |
| 3:AC:408:VAL:HG13 | 6:AF:564:ILE:HG12 | 1.90        | 0.54     |
| 8:AV:835:U:O2'    | 8:AV:836:U:C4'    | 2.56        | 0.54     |
| 7:BU:709:LEU:O    | 7:BU:709:LEU:HD23 | 2.08        | 0.54     |
| 6:CF:524:LYS:HB2  | 6:CF:570:LEU:HD21 | 1.89        | 0.54     |
| 3:CQ:336:VAL:CG1  | 3:CQ:337:LYS:N    | 2.70        | 0.54     |
| 2:DB:293:GLU:HG3  | 3:DC:398:LYS:HE2  | 1.88        | 0.54     |
| 2:BB:233:ASP:OD1  | 2:BB:237:ASN:N    | 2.41        | 0.54     |
| 3:AC:357:LYS:HB3  | 3:AC:366:VAL:O    | 2.08        | 0.54     |
| 7:CG:739:ASN:OD1  | 7:CG:763:ARG:HA   | 2.07        | 0.54     |
| 4:AD:82:MET:HG2   | 4:AD:86:MET:HE2   | 1.89        | 0.54     |
| 4:BR:51:ARG:HB2   | 8:BY:862:A:OP2    | 2.07        | 0.54     |
| 6:DF:510:PHE:CE1  | 6:DF:514:LEU:HD22 | 2.42        | 0.54     |
| 1:BA:154:LYS:HG2  | 8:BV:850:G:OP2    | 2.08        | 0.54     |
| 1:BO:115:TYR:HE2  | 1:BO:185:PRO:CG   | 2.20        | 0.54     |
| 8:AY:863:G:C2     | 8:AY:864:A:C8     | 2.95        | 0.54     |
| 2:CP:274:LEU:HD12 | 2:CP:275:PRO:HD2  | 1.88        | 0.54     |
| 8:DY:866:U:H3'    | 8:DY:867:G:C5'    | 2.37        | 0.54     |
| 7:BU:763:ARG:O    | 7:BU:766:SER:OG   | 2.22        | 0.54     |
| 3:CJ:376:GLU:OE1  | 3:CJ:392:LYS:HD2  | 2.07        | 0.54     |
| 6:DM:550:TYR:HB3  | 6:DM:555:LEU:HD12 | 1.90        | 0.54     |
| 2:CI:289:SER:O    | 2:CI:293:GLU:HG2  | 2.06        | 0.54     |
| 3:DQ:339:ASN:O    | 3:DQ:355:ARG:NH1  | 2.41        | 0.54     |
| 5:DS:616:GLN:HG3  | 5:DS:618:ILE:HD12 | 1.89        | 0.54     |
| 2:AB:261:ARG:NH1  | 2:AB:263:ASN:HD22 | 2.05        | 0.54     |
| 5:CS:618:ILE:CG2  | 7:CU:709:LEU:CD2  | 2.78        | 0.54     |
| 3:BC:402:ARG:NH2  | 8:BV:836:U:H1'    | 2.22        | 0.54     |
| 8:CY:817:A:N1     | 8:CY:818:G:C6     | 2.75        | 0.54     |
| 6:DM:508:LYS:HB2  | 6:DM:509:PRO:HD3  | 1.89        | 0.54     |
| 7:AN:709:LEU:CD1  | 7:AN:731:LEU:HD21 | 2.38        | 0.54     |
| 1:BH:173:ARG:HD2  | 4:BK:68:ILE:O     | 2.07        | 0.54     |
| 1:BA:178:VAL:HG13 | 2:BB:264:ASN:ND2  | 2.23        | 0.54     |
| 5:DS:639:VAL:CG1  | 8:DY:867:G:H3'    | 2.37        | 0.54     |
| 3:AQ:352:LEU:HD22 | 3:AQ:399:MET:HE1  | 1.90        | 0.54     |
| 1:CO:118:ARG:HG3  | 1:CO:126:ILE:HG23 | 1.90        | 0.54     |
| 3:AJ:408:VAL:CG1  | 6:AM:562:VAL:HG13 | 2.36        | 0.54     |
| 4:CK:80:ALA:CB    | 4:CK:81:PRO:HD3   | 2.35        | 0.54     |
| 3:CJ:333:THR:N    | 3:CJ:359:PHE:CZ   | 2.75        | 0.54     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:DD:46:ILE:CD1   | 4:DD:48:VAL:CG2   | 2.86        | 0.54     |
| 4:DK:19:THR:HG23  | 4:DK:29:ARG:HG2   | 1.89        | 0.54     |
| 5:AS:650:PHE:HB3  | 5:AS:656:LEU:CD2  | 2.32        | 0.54     |
| 1:AO:115:TYR:O    | 1:AO:131:PHE:N    | 2.41        | 0.54     |
| 5:CL:690:VAL:CG1  | 5:CL:690:VAL:O    | 2.56        | 0.54     |
| 8:BV:851:G:H22    | 8:BV:853:A:H3'    | 1.73        | 0.54     |
| 1:AA:149:ARG:HB3  | 1:AA:164:LYS:HG3  | 1.90        | 0.54     |
| 8:AX:804:G:H2'    | 8:AX:805:U:H5'    | 1.90        | 0.54     |
| 3:BC:370:VAL:HB   | 3:BC:399:MET:HE1  | 1.90        | 0.54     |
| 1:AH:116:ARG:HB2  | 1:AH:186:PRO:HG3  | 1.90        | 0.54     |
| 1:BH:149:ARG:NH2  | 8:BX:861:G:OP2    | 2.41        | 0.54     |
| 3:DJ:332:LEU:CB   | 3:DJ:359:PHE:CZ   | 2.70        | 0.54     |
| 3:DJ:347:ARG:O    | 6:DM:525:TRP:HH2  | 1.90        | 0.54     |
| 3:CJ:410:LEU:HB3  | 6:CM:559:LEU:HD22 | 1.90        | 0.54     |
| 2:BP:204:VAL:HG11 | 2:BP:234:VAL:O    | 2.07        | 0.54     |
| 7:BN:706:PRO:CG   | 7:BN:707:PRO:HD3  | 2.37        | 0.54     |
| 5:BS:673:GLN:C    | 5:BS:674:LEU:HD23 | 2.27        | 0.54     |
| 3:CC:404:ASP:OD1  | 8:CV:836:U:O2'    | 2.24        | 0.54     |
| 8:CV:839:C:O2'    | 8:CV:840:A:H5'    | 2.08        | 0.54     |
| 2:BB:270:LEU:HB2  | 3:BC:398:LYS:HG2  | 1.88        | 0.54     |
| 4:AD:46:ILE:HD12  | 4:AD:46:ILE:O     | 2.05        | 0.54     |
| 1:CA:169:LEU:HD21 | 4:CD:80:ALA:HB1   | 1.89        | 0.54     |
| 8:BX:807:A:H2'    | 8:BX:808:C:H5''   | 1.90        | 0.54     |
| 8:AX:861:G:H2'    | 8:AX:862:A:C8     | 2.43        | 0.54     |
| 4:DR:46:ILE:CD1   | 4:DR:61:VAL:HG21  | 2.37        | 0.54     |
| 1:CH:179:SER:HA   | 2:CI:259:SER:O    | 2.07        | 0.54     |
| 5:DE:683:ASN:HD22 | 6:DF:570:LEU:CD2  | 2.20        | 0.54     |
| 6:AM:521:VAL:CG1  | 6:AM:522:LYS:N    | 2.70        | 0.54     |
| 3:BC:316:LEU:HD22 | 3:BC:316:LEU:N    | 2.22        | 0.54     |
| 8:AV:812:U:O2'    | 8:AV:813:G:H5'    | 2.08        | 0.54     |
| 3:CJ:380:SER:HB3  | 3:CJ:384:LYS:HA   | 1.88        | 0.54     |
| 6:CM:567:ASN:H    | 8:CX:837:G:N2     | 2.06        | 0.54     |
| 5:BS:661:ALA:HB3  | 5:BS:677:ILE:CD1  | 2.37        | 0.54     |
| 3:AC:407:ILE:HA   | 6:AF:568:ASN:HD22 | 1.71        | 0.54     |
| 3:CC:407:ILE:HG23 | 6:CF:568:ASN:CG   | 2.28        | 0.54     |
| 7:CN:712:PHE:HB3  | 7:CN:717:LEU:HD11 | 1.90        | 0.54     |
| 3:BC:412:ASN:HD21 | 6:BF:559:LEU:HD21 | 1.73        | 0.54     |
| 3:AJ:331:VAL:HG21 | 6:AM:563:LEU:HD13 | 1.90        | 0.54     |
| 7:CN:705:HIS:CD2  | 7:CN:736:PRO:HB3  | 2.43        | 0.54     |
| 4:DR:46:ILE:CD1   | 4:DR:61:VAL:HG22  | 2.37        | 0.54     |
| 1:DO:137:HIS:CD2  | 8:DY:834:U:H3'    | 2.43        | 0.54     |
| 8:DX:866:U:C3'    | 8:DX:867:G:H5''   | 2.37        | 0.54     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:DL:633:VAL:HG21 | 5:DL:647:ILE:HB   | 1.90        | 0.54     |
| 5:DS:686:LEU:HD23 | 7:DU:762:ILE:HA   | 1.90        | 0.54     |
| 7:AG:709:LEU:O    | 7:AG:713:MET:HB2  | 2.08        | 0.54     |
| 5:DL:686:LEU:HD22 | 7:DN:762:ILE:HG12 | 1.90        | 0.54     |
| 8:AY:813:G:H1'    | 8:AY:816:A:H62    | 1.72        | 0.54     |
| 1:AH:137:HIS:CE1  | 8:AX:834:U:C2     | 2.95        | 0.54     |
| 1:BA:195:VAL:HG12 | 1:BA:195:VAL:O    | 2.07        | 0.54     |
| 7:AU:775:ARG:O    | 7:AU:775:ARG:HG2  | 2.06        | 0.54     |
| 6:DF:520:MET:CE   | 6:DF:530:LYS:HD3  | 2.38        | 0.54     |
| 3:AJ:376:GLU:OE1  | 3:AJ:392:LYS:HD2  | 2.07        | 0.54     |
| 1:DH:106:SER:O    | 1:DH:109:MET:HB2  | 2.07        | 0.54     |
| 6:DF:567:ASN:H    | 8:DV:837:G:H21    | 1.55        | 0.54     |
| 2:DP:291:LYS:O    | 2:DP:295:VAL:C    | 2.46        | 0.54     |
| 2:AB:249:ASN:OD1  | 2:AB:250:ARG:HG3  | 2.08        | 0.54     |
| 2:BP:277:ASP:CB   | 2:BP:290:LYS:HE2  | 2.32        | 0.54     |
| 3:AC:362:HIS:CE1  | 8:AV:830:A:H2'    | 2.43        | 0.54     |
| 8:AV:867:G:O2'    | 8:AV:868:G:OP1    | 2.25        | 0.54     |
| 4:AR:61:VAL:HG23  | 4:AR:61:VAL:O     | 2.08        | 0.54     |
| 1:CH:137:HIS:O    | 1:CH:138:MET:HB2  | 2.08        | 0.54     |
| 2:CI:204:VAL:HG13 | 2:CI:236:MET:HA   | 1.89        | 0.54     |
| 3:BC:407:ILE:HD12 | 6:BF:525:TRP:CZ3  | 2.43        | 0.54     |
| 5:CE:685:THR:O    | 5:CE:686:LEU:HD23 | 2.08        | 0.54     |
| 7:CG:705:HIS:N    | 7:CG:706:PRO:HD2  | 2.23        | 0.54     |
| 7:AU:748:MET:CE   | 7:AU:753:GLN:N    | 2.71        | 0.54     |
| 7:DU:745:CYS:SG   | 7:DU:760:VAL:CG1  | 2.96        | 0.54     |
| 3:DJ:396:ILE:HB   | 3:DJ:399:MET:HE2  | 1.89        | 0.54     |
| 2:AI:284:GLU:HB3  | 2:AI:285:PRO:HD3  | 1.89        | 0.54     |
| 7:CU:775:ARG:O    | 7:CU:776:VAL:HG22 | 2.07        | 0.54     |
| 3:CC:314:GLU:OE2  | 3:CC:318:LYS:NZ   | 2.36        | 0.54     |
| 1:CA:178:VAL:HB   | 2:CB:264:ASN:ND2  | 2.23        | 0.54     |
| 8:DY:857:U:O4     | 8:DY:858:A:N6     | 2.40        | 0.54     |
| 2:CP:217:ILE:CD1  | 2:CP:240:LEU:HD11 | 2.38        | 0.54     |
| 7:BG:757:ILE:HG22 | 7:BG:758:GLY:N    | 2.22        | 0.54     |
| 5:DE:664:ILE:HG23 | 5:DE:669:LYS:C    | 2.29        | 0.54     |
| 8:AV:850:G:O4'    | 8:CX:816:A:H2     | 1.91        | 0.54     |
| 6:AF:558:HIS:NE2  | 3:AQ:413:PRO:CD   | 2.68        | 0.54     |
| 3:BJ:347:ARG:CG   | 6:BM:525:TRP:HH2  | 2.20        | 0.54     |
| 5:AE:610:VAL:CG1  | 5:AE:612:LYS:HG2  | 2.38        | 0.54     |
| 6:CF:524:LYS:CG   | 8:CV:838:A:N6     | 2.71        | 0.54     |
| 8:CV:861:G:C6     | 8:CV:862:A:C5     | 2.96        | 0.54     |
| 2:BB:204:VAL:HG11 | 2:BB:234:VAL:O    | 2.08        | 0.54     |
| 5:AE:678:MET:HE3  | 6:AF:511:LEU:CD2  | 2.37        | 0.54     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:CL:690:VAL:CG1  | 5:CS:631:ILE:CD1  | 2.86        | 0.54     |
| 8:AY:851:G:N3     | 8:AY:853:A:OP1    | 2.41        | 0.54     |
| 7:BG:732:ARG:CG   | 7:BG:743:ASP:HB2  | 2.38        | 0.54     |
| 1:DH:133:ALA:HB3  | 1:DH:141:ILE:HB   | 1.90        | 0.54     |
| 3:CJ:341:GLN:HG3  | 3:CJ:355:ARG:CZ   | 2.37        | 0.54     |
| 4:CK:46:ILE:HD11  | 4:CK:58:LEU:HD12  | 1.89        | 0.54     |
| 3:DJ:359:PHE:HA   | 3:DJ:364:ASN:O    | 2.08        | 0.53     |
| 7:BG:742:ILE:CG2  | 7:BG:745:CYS:HB3  | 2.38        | 0.53     |
| 4:BK:63:ILE:CD1   | 7:BN:769:MET:HE1  | 2.36        | 0.53     |
| 3:CC:347:ARG:CD   | 3:CC:405:SER:HA   | 2.37        | 0.53     |
| 4:AR:46:ILE:HG21  | 4:AR:61:VAL:HG22  | 1.91        | 0.53     |
| 1:CH:176:ASN:N    | 1:CH:176:ASN:ND2  | 2.56        | 0.53     |
| 4:CK:38:ASN:ND2   | 8:CX:833:U:O4     | 2.41        | 0.53     |
| 3:BC:342:VAL:CG2  | 3:BC:356:VAL:HG23 | 2.37        | 0.53     |
| 1:AA:181:THR:HB   | 2:AB:258:LEU:HD13 | 1.90        | 0.53     |
| 3:AJ:333:THR:N    | 3:AJ:359:PHE:HZ   | 2.01        | 0.53     |
| 2:AI:250:ARG:HH22 | 8:AX:860:G:P      | 2.30        | 0.53     |
| 6:CF:539:TYR:O    | 6:CF:566:CYS:CB   | 2.55        | 0.53     |
| 6:BT:566:CYS:O    | 6:BT:567:ASN:C    | 2.46        | 0.53     |
| 6:BT:539:TYR:CE2  | 8:BY:837:G:N2     | 2.75        | 0.53     |
| 8:BY:807:A:C3'    | 8:BY:808:C:H5''   | 2.38        | 0.53     |
| 4:BD:63:ILE:HD11  | 7:BG:769:MET:SD   | 2.48        | 0.53     |
| 8:DY:814:A:H2'    | 8:DY:815:A:C8     | 2.43        | 0.53     |
| 1:CH:190:THR:HG23 | 1:CH:194:ARG:HE   | 1.72        | 0.53     |
| 6:BF:551:ILE:C    | 6:BF:553:GLY:N    | 2.60        | 0.53     |
| 4:BK:33:ILE:HD11  | 4:BK:44:SER:OG    | 2.08        | 0.53     |
| 2:BP:213:GLU:HB3  | 2:BP:271:PRO:HG3  | 1.90        | 0.53     |
| 1:AH:128:ILE:HD12 | 1:AH:148:PHE:CE2  | 2.43        | 0.53     |
| 1:CO:131:PHE:CZ   | 1:CO:134:PHE:HB3  | 2.42        | 0.53     |
| 1:DH:118:ARG:HD2  | 1:DH:181:THR:CG2  | 2.38        | 0.53     |
| 4:DR:40:ASN:ND2   | 8:DY:833:U:O4     | 2.41        | 0.53     |
| 2:BP:293:GLU:CD   | 3:BQ:368:GLU:HB2  | 2.28        | 0.53     |
| 7:BN:713:MET:HG2  | 7:BN:714:ASP:OD1  | 2.08        | 0.53     |
| 4:BR:62:TYR:HD2   | 7:BU:770:LEU:HD13 | 1.73        | 0.53     |
| 2:AI:232:VAL:HA   | 2:AI:237:ASN:O    | 2.09        | 0.53     |
| 2:DB:204:VAL:HG23 | 2:DB:236:MET:SD   | 2.48        | 0.53     |
| 1:DA:180:MET:O    | 2:DB:258:LEU:HA   | 2.08        | 0.53     |
| 1:CH:171:LEU:HD23 | 1:CH:172:LEU:O    | 2.09        | 0.53     |
| 2:DB:276:LEU:CD1  | 3:DC:398:LYS:HZ1  | 2.19        | 0.53     |
| 6:BF:521:VAL:HG12 | 6:BF:522:LYS:N    | 2.24        | 0.53     |
| 7:DG:709:LEU:HD13 | 7:DG:734:PHE:CB   | 2.38        | 0.53     |
| 7:CU:729:GLY:HA3  | 7:CU:742:ILE:CG2  | 2.37        | 0.53     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:DK:80:ALA:CB    | 4:DK:81:PRO:HD3   | 2.36        | 0.53     |
| 8:AX:847:A:H61    | 8:CV:814:A:N6     | 2.05        | 0.53     |
| 1:DO:118:ARG:HD2  | 1:DO:181:THR:HG21 | 1.90        | 0.53     |
| 7:DN:749:ALA:HB3  | 7:DN:754:GLN:CD   | 2.28        | 0.53     |
| 5:DE:639:VAL:O    | 5:DE:639:VAL:CG1  | 2.53        | 0.53     |
| 4:AK:19:THR:CB    | 4:AK:72:ILE:HD12  | 2.38        | 0.53     |
| 3:BJ:326:THR:O    | 3:BJ:330:SER:N    | 2.39        | 0.53     |
| 3:BJ:327:GLY:HA2  | 3:BJ:330:SER:HB3  | 1.90        | 0.53     |
| 3:CC:356:VAL:HA   | 3:CC:367:LEU:HD23 | 1.89        | 0.53     |
| 3:AQ:357:LYS:HD3  | 3:AQ:366:VAL:HG12 | 1.90        | 0.53     |
| 3:AQ:408:VAL:CG1  | 3:AQ:410:LEU:HD21 | 2.39        | 0.53     |
| 3:CQ:342:VAL:CG1  | 3:CQ:409:VAL:CG1  | 2.57        | 0.53     |
| 7:DG:727:VAL:HA   | 7:DG:746:VAL:O    | 2.07        | 0.53     |
| 6:DM:518:PRO:HB3  | 6:DM:532:TYR:CD2  | 2.43        | 0.53     |
| 8:AV:835:U:HO2'   | 8:AV:836:U:H4'    | 1.71        | 0.53     |
| 6:BF:539:TYR:HB2  | 8:BV:831:A:OP1    | 2.09        | 0.53     |
| 3:AJ:334:GLN:CG   | 3:AJ:418:LYS:HB2  | 2.38        | 0.53     |
| 3:CQ:330:SER:O    | 3:CQ:334:GLN:CB   | 2.56        | 0.53     |
| 7:BU:729:GLY:HA3  | 7:BU:742:ILE:HG21 | 1.89        | 0.53     |
| 8:AX:835:U:O2'    | 8:AX:836:U:C4'    | 2.57        | 0.53     |
| 8:DY:812:U:H2'    | 8:DY:813:G:O4'    | 2.09        | 0.53     |
| 6:DM:513:GLY:O    | 6:DM:517:LYS:NZ   | 2.39        | 0.53     |
| 2:AP:206:PHE:CZ   | 2:AP:274:LEU:HD21 | 2.43        | 0.53     |
| 3:AQ:365:MET:O    | 3:AQ:400:PHE:HA   | 2.08        | 0.53     |
| 3:DJ:403:GLY:O    | 6:DM:565:ARG:NH2  | 2.41        | 0.53     |
| 8:DX:843:C:O2'    | 8:DX:844:U:O5'    | 2.23        | 0.53     |
| 7:CG:741:VAL:HG13 | 7:CG:760:VAL:O    | 2.08        | 0.53     |
| 8:BV:817:A:H2'    | 8:BV:818:G:C8     | 2.42        | 0.53     |
| 2:BI:219:LEU:CD1  | 2:BI:223:THR:HG23 | 2.37        | 0.53     |
| 3:BC:410:LEU:HD13 | 6:BF:559:LEU:HD22 | 1.90        | 0.53     |
| 2:BB:267:TYR:HA   | 3:BC:400:PHE:O    | 2.09        | 0.53     |
| 4:DD:27:VAL:O     | 4:DD:48:VAL:HA    | 2.09        | 0.53     |
| 2:AB:286:LYS:HZ2  | 2:AB:289:SER:CB   | 2.19        | 0.53     |
| 6:DF:524:LYS:HA   | 6:DF:570:LEU:HD11 | 1.89        | 0.53     |
| 5:BE:643:ILE:HG22 | 5:BE:644:GLU:N    | 2.23        | 0.53     |
| 7:BN:712:PHE:HB3  | 7:BN:717:LEU:HD11 | 1.91        | 0.53     |
| 6:BT:528:GLU:HB2  | 6:BT:550:TYR:HB2  | 1.91        | 0.53     |
| 3:BC:374:TRP:HZ3  | 3:BC:376:GLU:OE1  | 1.92        | 0.53     |
| 2:AP:286:LYS:CE   | 3:AQ:358:ALA:HB2  | 2.38        | 0.53     |
| 2:DI:220:LYS:O    | 2:DI:266:ARG:NH2  | 2.39        | 0.53     |
| 8:BV:814:A:C2     | 8:BV:815:A:N3     | 2.77        | 0.53     |
| 8:AV:838:A:H2'    | 8:AV:839:C:O4'    | 2.08        | 0.53     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:BN:742:ILE:HG22 | 7:BN:745:CYS:HB3  | 1.90        | 0.53     |
| 2:BI:258:LEU:HD12 | 2:BI:259:SER:H    | 1.74        | 0.53     |
| 8:BV:838:A:C8     | 8:BV:838:A:H5'    | 2.36        | 0.53     |
| 3:BC:335:SER:HB2  | 3:BC:411:ARG:CZ   | 2.39        | 0.53     |
| 7:DN:741:VAL:HG12 | 7:DN:759:MET:SD   | 2.48        | 0.53     |
| 3:CC:355:ARG:HH12 | 3:CC:414:LEU:HD11 | 1.74        | 0.53     |
| 7:DN:734:PHE:CE1  | 7:DN:735:ASP:O    | 2.61        | 0.53     |
| 1:BH:139:ASN:ND2  | 8:BX:834:U:O4     | 2.41        | 0.53     |
| 3:BJ:335:SER:CB   | 3:BJ:356:VAL:HG21 | 2.39        | 0.53     |
| 2:BI:244:LYS:HG3  | 2:BI:254:GLN:NE2  | 2.23        | 0.53     |
| 4:DD:24:THR:OG1   | 4:DD:26:GLU:HG3   | 2.09        | 0.53     |
| 2:DI:213:GLU:N    | 2:DI:228:THR:HG23 | 2.24        | 0.53     |
| 5:DL:654:MET:O    | 5:DL:656:LEU:HG   | 2.08        | 0.53     |
| 6:CT:508:LYS:HB2  | 6:CT:509:PRO:HD3  | 1.89        | 0.53     |
| 5:BE:622:PHE:HA   | 5:BE:625:LEU:HD12 | 1.90        | 0.53     |
| 3:DJ:332:LEU:HD12 | 3:DJ:359:PHE:HD2  | 1.62        | 0.53     |
| 6:CM:540:MET:HG3  | 8:CX:831:A:C2     | 2.44        | 0.53     |
| 2:DP:277:ASP:HB2  | 2:DP:290:LYS:CD   | 2.39        | 0.53     |
| 3:BQ:336:VAL:CG2  | 3:BQ:356:VAL:HG11 | 2.38        | 0.53     |
| 2:CB:293:GLU:HG2  | 3:CC:368:GLU:HB3  | 1.91        | 0.53     |
| 8:CV:838:A:H2'    | 8:CV:839:C:C6     | 2.43        | 0.53     |
| 8:CV:865:C:O2'    | 8:CV:866:U:H5'    | 2.08        | 0.53     |
| 6:CT:536:VAL:HG12 | 6:CT:537:ASP:N    | 2.24        | 0.53     |
| 2:DB:276:LEU:HD22 | 3:DC:357:LYS:HE2  | 1.90        | 0.53     |
| 1:BA:119:CYS:SG   | 1:BA:140:LEU:HD12 | 2.48        | 0.53     |
| 3:BC:363:CYS:HB2  | 6:BF:565:ARG:HD3  | 1.89        | 0.53     |
| 7:BN:774:GLU:O    | 7:BN:775:ARG:HG2  | 2.08        | 0.53     |
| 1:BA:132:LYS:HG3  | 1:BA:143:CYS:SG   | 2.49        | 0.53     |
| 2:DP:217:ILE:CG2  | 2:DP:265:ILE:HG23 | 2.39        | 0.53     |
| 3:CC:352:LEU:HD23 | 3:CC:372:GLU:CB   | 2.38        | 0.53     |
| 8:AY:814:A:C8     | 8:AY:814:A:O5'    | 2.58        | 0.53     |
| 1:CH:135:ASP:OD1  | 1:CH:139:ASN:N    | 2.39        | 0.53     |
| 2:CB:215:VAL:HG12 | 2:CB:271:PRO:HD3  | 1.90        | 0.53     |
| 6:DM:583:GLU:O    | 6:DM:586:GLU:OXT  | 2.27        | 0.53     |
| 6:DT:517:LYS:O    | 6:DT:519:VAL:HG13 | 2.08        | 0.53     |
| 4:AD:4:GLY:HA2    | 4:AD:7:ILE:HD12   | 1.91        | 0.53     |
| 2:BI:227:GLY:HA2  | 2:BI:242:ALA:O    | 2.07        | 0.53     |
| 6:AM:559:LEU:N    | 6:AM:559:LEU:HD12 | 2.23        | 0.53     |
| 6:CT:539:TYR:CD2  | 6:CT:566:CYS:HB3  | 2.43        | 0.53     |
| 2:AB:270:LEU:HD11 | 3:AC:400:PHE:HB2  | 1.90        | 0.53     |
| 2:DP:270:LEU:CD2  | 2:DP:271:PRO:HD2  | 2.39        | 0.53     |
| 6:CF:571:TYR:CD1  | 6:CF:571:TYR:C    | 2.82        | 0.53     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:AA:160:GLU:HA   | 1:AA:160:GLU:OE1  | 2.07        | 0.53     |
| 3:BQ:332:LEU:O    | 3:BQ:336:VAL:HG23 | 2.09        | 0.53     |
| 2:BP:236:MET:HE2  | 8:BY:836:U:C2     | 2.43        | 0.53     |
| 5:BS:635:LEU:HD12 | 5:BS:687:LEU:HD22 | 1.90        | 0.53     |
| 2:CP:283:VAL:O    | 2:CP:283:VAL:HG22 | 2.09        | 0.53     |
| 2:CI:229:ILE:HG23 | 2:CI:238:THR:CG2  | 2.38        | 0.53     |
| 3:DC:357:LYS:CD   | 3:DC:357:LYS:C    | 2.76        | 0.53     |
| 2:AB:286:LYS:HE2  | 3:AC:357:LYS:HG3  | 1.90        | 0.53     |
| 7:CG:737:PHE:HE1  | 8:CV:832:U:H3'    | 1.73        | 0.53     |
| 8:BY:866:U:C3'    | 8:BY:867:G:H5''   | 2.38        | 0.53     |
| 8:BY:867:G:H4'    | 8:BY:867:G:OP2    | 2.09        | 0.53     |
| 8:AX:861:G:H2'    | 8:AX:862:A:H8     | 1.74        | 0.53     |
| 2:DI:222:GLY:O    | 2:DI:248:LYS:HE3  | 2.09        | 0.53     |
| 3:DQ:352:LEU:HD12 | 3:DQ:401:LEU:CD2  | 2.36        | 0.53     |
| 2:CI:219:LEU:HD12 | 2:CI:223:THR:HB   | 1.90        | 0.53     |
| 8:DX:867:G:H5'    | 8:DX:867:G:C8     | 2.39        | 0.53     |
| 4:CD:12:GLU:CG    | 4:CD:79:ASN:ND2   | 2.71        | 0.53     |
| 6:CF:508:LYS:HB2  | 6:CF:509:PRO:HD3  | 1.90        | 0.53     |
| 6:CF:508:LYS:O    | 6:CF:511:LEU:HD12 | 2.08        | 0.53     |
| 8:DX:849:G:H2'    | 8:DX:850:G:H8     | 1.73        | 0.53     |
| 3:DJ:324:PHE:HD1  | 3:DJ:325:ASN:HB2  | 1.69        | 0.53     |
| 4:BK:73:LEU:HB3   | 4:BK:74:PRO:CD    | 2.39        | 0.53     |
| 3:BQ:343:LEU:HD11 | 3:BQ:351:LYS:HB3  | 1.90        | 0.53     |
| 6:CF:551:ILE:N    | 6:CF:554:ALA:O    | 2.38        | 0.53     |
| 4:AD:49:THR:OG1   | 4:AD:55:VAL:HG12  | 2.09        | 0.53     |
| 2:AP:203:LEU:HD12 | 3:AQ:360:ASP:OD2  | 2.09        | 0.53     |
| 3:DJ:329:LEU:HG   | 3:DJ:359:PHE:CE2  | 2.44        | 0.53     |
| 6:DM:521:VAL:HG13 | 6:DM:571:TYR:O    | 2.09        | 0.53     |
| 4:BK:48:VAL:HG12  | 4:BK:56:ALA:O     | 2.08        | 0.53     |
| 5:BL:635:LEU:HD13 | 5:BL:687:LEU:HD21 | 1.91        | 0.53     |
| 6:CT:539:TYR:O    | 6:CT:539:TYR:CD2  | 2.61        | 0.53     |
| 8:AV:857:U:O2'    | 8:CX:815:A:C2'    | 2.57        | 0.53     |
| 5:AS:687:LEU:O    | 7:AU:760:VAL:HG23 | 2.09        | 0.53     |
| 2:CB:218:GLU:OE1  | 2:CB:267:TYR:CZ   | 2.61        | 0.53     |
| 3:CC:401:LEU:HD21 | 3:CC:406:VAL:HG22 | 1.88        | 0.53     |
| 2:DB:238:THR:CG2  | 2:DB:240:LEU:HD21 | 2.39        | 0.53     |
| 4:AR:46:ILE:HG12  | 4:AR:61:VAL:HG13  | 1.91        | 0.53     |
| 1:BO:139:ASN:HD21 | 8:BY:834:U:H3     | 1.56        | 0.53     |
| 1:CO:187:PRO:HB2  | 1:CO:190:THR:HB   | 1.90        | 0.53     |
| 3:DQ:362:HIS:HD2  | 8:DY:836:U:H2'    | 1.74        | 0.53     |
| 3:AC:316:LEU:HD11 | 3:AC:337:LYS:NZ   | 2.21        | 0.53     |
| 1:DO:137:HIS:O    | 1:DO:138:MET:CB   | 2.56        | 0.53     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:DU:742:ILE:CG2  | 7:DU:745:CYS:HB3  | 2.39        | 0.53     |
| 3:DQ:407:ILE:HA   | 6:DT:568:ASN:HD21 | 1.73        | 0.53     |
| 1:AH:154:LYS:HG3  | 8:CV:813:G:H5"    | 1.91        | 0.53     |
| 4:AD:64:ARG:NH2   | 8:AV:833:U:C6     | 2.77        | 0.53     |
| 4:DD:39:MET:HB2   | 4:DD:65:GLY:HA3   | 1.90        | 0.53     |
| 8:BY:816:A:N6     | 8:BY:817:A:C2     | 2.77        | 0.53     |
| 5:BE:630:ARG:NH2  | 7:CG:744:GLU:CG   | 2.72        | 0.53     |
| 6:DF:520:MET:HE1  | 6:DF:530:LYS:HD3  | 1.90        | 0.53     |
| 1:AA:116:ARG:HH12 | 1:AA:144:ASP:HB2  | 1.74        | 0.53     |
| 6:DM:570:LEU:HD23 | 6:DM:571:TYR:CD2  | 2.43        | 0.53     |
| 6:DM:525:TRP:NE1  | 8:DX:839:C:O2     | 2.42        | 0.53     |
| 3:AJ:347:ARG:CD   | 6:AM:525:TRP:CZ2  | 2.87        | 0.53     |
| 6:CM:567:ASN:C    | 8:CX:838:A:N1     | 2.56        | 0.53     |
| 2:AB:248:LYS:O    | 2:AB:249:ASN:CG   | 2.47        | 0.53     |
| 7:AG:756:ASN:O    | 7:AG:757:ILE:CD1  | 2.57        | 0.53     |
| 7:AU:741:VAL:HG22 | 7:AU:761:VAL:CG2  | 2.22        | 0.53     |
| 8:AV:866:U:C3'    | 8:AV:867:G:H5"    | 2.38        | 0.53     |
| 2:AI:202:LYS:O    | 2:AI:281:VAL:HG21 | 2.09        | 0.53     |
| 1:DO:143:CYS:SG   | 4:DR:84:LYS:NZ    | 2.80        | 0.53     |
| 4:BR:46:ILE:CD1   | 4:BR:58:LEU:HB2   | 2.25        | 0.53     |
| 1:CA:148:PHE:HD1  | 1:CA:164:LYS:HZ2  | 1.57        | 0.53     |
| 3:AJ:329:LEU:HD23 | 3:AJ:359:PHE:CE1  | 2.44        | 0.53     |
| 7:AN:705:HIS:CG   | 7:AN:736:PRO:HA   | 2.44        | 0.53     |
| 6:CM:533:LEU:HA   | 6:CM:544:LEU:HD23 | 1.89        | 0.53     |
| 6:CM:516:GLY:N    | 6:CM:533:LEU:O    | 2.40        | 0.53     |
| 5:CL:634:TRP:HB3  | 5:CL:688:GLN:HG3  | 1.90        | 0.53     |
| 1:DO:173:ARG:NE   | 1:DO:175:GLU:OE2  | 2.41        | 0.53     |
| 3:BJ:331:VAL:HG11 | 6:BM:563:LEU:HD22 | 1.90        | 0.53     |
| 7:DN:705:HIS:C    | 7:DN:707:PRO:HD2  | 2.29        | 0.53     |
| 2:DI:245:MET:O    | 2:DI:252:PRO:CA   | 2.55        | 0.53     |
| 4:AR:64:ARG:HB3   | 4:AR:67:LYS:CG    | 2.39        | 0.53     |
| 1:DH:116:ARG:N    | 1:DH:186:PRO:HD3  | 2.24        | 0.53     |
| 5:DL:655:ASN:HD21 | 8:DX:831:A:H2     | 1.51        | 0.53     |
| 2:BI:214:THR:HA   | 2:BI:227:GLY:O    | 2.08        | 0.53     |
| 5:AS:615:VAL:O    | 5:AS:617:PRO:CD   | 2.57        | 0.53     |
| 4:AD:88:ASN:O     | 4:AD:91:GLN:NE2   | 2.41        | 0.53     |
| 3:DJ:342:VAL:CG1  | 3:DJ:409:VAL:HG12 | 2.39        | 0.53     |
| 5:BE:666:SER:C    | 5:BE:668:THR:H    | 2.11        | 0.53     |
| 3:CQ:342:VAL:HG13 | 3:CQ:411:ARG:HG3  | 1.91        | 0.53     |
| 2:DP:267:TYR:CB   | 3:DQ:400:PHE:O    | 2.55        | 0.53     |
| 7:CU:744:GLU:N    | 7:CU:758:GLY:O    | 2.33        | 0.53     |
| 1:CH:121:LEU:HD22 | 1:CH:176:ASN:O    | 2.08        | 0.53     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:CG:737:PHE:CE1  | 8:CV:832:U:H3'    | 2.44        | 0.53     |
| 8:AX:847:A:C8     | 8:AX:858:A:N1     | 2.77        | 0.53     |
| 8:AY:808:C:H2'    | 8:AY:809:G:C8     | 2.44        | 0.53     |
| 7:CG:750:THR:CG2  | 7:CG:750:THR:O    | 2.50        | 0.53     |
| 8:BY:839:C:H2'    | 8:BY:840:A:H5'    | 1.91        | 0.53     |
| 5:DS:621:ILE:CD1  | 7:DU:761:VAL:HG13 | 2.38        | 0.53     |
| 5:CE:650:PHE:O    | 6:CF:505:LEU:HD22 | 2.08        | 0.53     |
| 6:CF:511:LEU:CD2  | 6:CF:536:VAL:HG11 | 2.39        | 0.53     |
| 7:AU:763:ARG:NH2  | 8:AY:832:U:H1'    | 2.24        | 0.53     |
| 2:CB:202:LYS:HG2  | 2:CB:204:VAL:HG22 | 1.90        | 0.53     |
| 5:DL:665:HIS:HB2  | 5:DL:669:LYS:HB2  | 1.91        | 0.53     |
| 2:AB:265:ILE:HD13 | 2:AB:268:PHE:CZ   | 2.44        | 0.53     |
| 7:CU:775:ARG:O    | 7:CU:776:VAL:CG2  | 2.57        | 0.53     |
| 4:BD:47:THR:HG23  | 4:BD:55:VAL:HG13  | 1.90        | 0.53     |
| 3:DJ:332:LEU:HD12 | 3:DJ:359:PHE:CG   | 2.38        | 0.52     |
| 7:BG:756:ASN:OD1  | 7:BG:756:ASN:C    | 2.46        | 0.52     |
| 6:CT:539:TYR:CD1  | 8:CY:831:A:O4'    | 2.62        | 0.52     |
| 6:CT:523:LEU:HA   | 6:CT:568:ASN:O    | 2.10        | 0.52     |
| 6:CM:523:LEU:C    | 6:CM:570:LEU:HG   | 2.29        | 0.52     |
| 1:DH:173:ARG:CZ   | 8:DX:834:U:O2     | 2.57        | 0.52     |
| 3:DQ:376:GLU:CB   | 3:DQ:391:ASN:HB2  | 2.16        | 0.52     |
| 6:AF:539:TYR:O    | 6:AF:566:CYS:HB3  | 2.08        | 0.52     |
| 8:AV:840:A:C2     | 8:AV:841:G:N9     | 2.77        | 0.52     |
| 5:BE:653:TYR:CE2  | 8:BV:831:A:C8     | 2.97        | 0.52     |
| 7:AU:713:MET:O    | 7:AU:714:ASP:HB3  | 2.09        | 0.52     |
| 3:BC:391:ASN:HB3  | 6:BT:552:ASP:HB2  | 1.92        | 0.52     |
| 1:AO:116:ARG:HG2  | 1:AO:187:PRO:CG   | 2.39        | 0.52     |
| 2:BP:217:ILE:HG23 | 2:BP:265:ILE:HG21 | 1.90        | 0.52     |
| 5:DL:620:LEU:HD22 | 7:DN:735:ASP:HB2  | 1.89        | 0.52     |
| 2:DI:269:ILE:CD1  | 3:DJ:396:ILE:HD13 | 2.39        | 0.52     |
| 8:BV:866:U:C3'    | 8:BV:867:G:H5''   | 2.39        | 0.52     |
| 8:AX:805:U:H2'    | 8:AX:806:G:O4'    | 2.09        | 0.52     |
| 3:CJ:341:GLN:HE21 | 3:CJ:355:ARG:NH2  | 2.06        | 0.52     |
| 3:DC:388:LYS:HG3  | 3:DC:389:PRO:HD2  | 1.91        | 0.52     |
| 1:BA:186:PRO:HG2  | 1:BA:189:ASP:OD2  | 2.09        | 0.52     |
| 2:DB:230:THR:OG1  | 2:DB:239:HIS:O    | 2.18        | 0.52     |
| 8:CX:851:G:H22    | 8:CX:853:A:H3'    | 1.74        | 0.52     |
| 1:CA:192:ILE:O    | 1:CA:195:VAL:HG13 | 2.09        | 0.52     |
| 3:CC:410:LEU:CD2  | 6:CF:562:VAL:HG13 | 2.38        | 0.52     |
| 2:AP:276:LEU:CG   | 3:AQ:357:LYS:HE3  | 2.39        | 0.52     |
| 3:DJ:343:LEU:HB3  | 3:DJ:410:LEU:HB2  | 1.90        | 0.52     |
| 6:DM:570:LEU:HD23 | 6:DM:571:TYR:CE2  | 2.43        | 0.52     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:BG:741:VAL:CG1  | 7:BG:759:MET:SD   | 2.98        | 0.52     |
| 6:DF:529:TYR:HA   | 6:DF:549:GLU:HA   | 1.90        | 0.52     |
| 6:CM:508:LYS:N    | 6:CM:509:PRO:HD2  | 2.24        | 0.52     |
| 4:CK:81:PRO:HB3   | 4:CK:84:LYS:HE2   | 1.91        | 0.52     |
| 7:DG:742:ILE:O    | 7:DG:760:VAL:HG12 | 2.09        | 0.52     |
| 3:DQ:376:GLU:HG3  | 3:DQ:377:VAL:H    | 1.73        | 0.52     |
| 2:BP:266:ARG:O    | 3:BQ:402:ARG:HB2  | 2.08        | 0.52     |
| 2:DB:293:GLU:CG   | 3:DC:368:GLU:HG2  | 2.39        | 0.52     |
| 3:BC:412:ASN:CB   | 3:BC:413:PRO:HD3  | 2.38        | 0.52     |
| 1:CA:148:PHE:HD1  | 1:CA:164:LYS:NZ   | 2.07        | 0.52     |
| 6:DF:522:LYS:CD   | 6:DF:571:TYR:CE2  | 2.90        | 0.52     |
| 4:CD:40:ASN:ND2   | 8:CV:833:U:O4     | 2.42        | 0.52     |
| 7:BU:742:ILE:HB   | 7:BU:760:VAL:CG1  | 2.39        | 0.52     |
| 3:BJ:332:LEU:HB2  | 3:BJ:359:PHE:CD1  | 2.45        | 0.52     |
| 8:CX:847:A:N1     | 8:CX:849:G:O4'    | 2.42        | 0.52     |
| 1:CH:178:VAL:HB   | 2:CI:264:ASN:HD21 | 1.72        | 0.52     |
| 7:AN:709:LEU:HD11 | 7:AN:713:MET:HB2  | 1.89        | 0.52     |
| 8:DV:847:A:O2'    | 8:DV:848:U:H3'    | 2.09        | 0.52     |
| 5:CS:631:ILE:HG22 | 5:CS:632:GLN:N    | 2.24        | 0.52     |
| 2:BI:212:HIS:O    | 2:BI:212:HIS:CG   | 2.62        | 0.52     |
| 3:BJ:362:HIS:CE1  | 8:BX:830:A:C4     | 2.97        | 0.52     |
| 8:AY:866:U:C2'    | 8:AY:867:G:H5''   | 2.39        | 0.52     |
| 7:CG:709:LEU:HD22 | 7:CG:734:PHE:HB3  | 1.91        | 0.52     |
| 8:AY:813:G:H1'    | 8:AY:816:A:N6     | 2.24        | 0.52     |
| 5:DE:678:MET:HE1  | 6:DF:511:LEU:CD2  | 2.38        | 0.52     |
| 3:AJ:393:ASP:OD1  | 3:AJ:393:ASP:N    | 2.41        | 0.52     |
| 6:DM:528:GLU:O    | 6:DM:550:TYR:N    | 2.40        | 0.52     |
| 4:CR:64:ARG:NH1   | 7:CU:738:MET:CG   | 2.71        | 0.52     |
| 7:AN:759:MET:CE   | 5:AS:630:ARG:HH12 | 2.23        | 0.52     |
| 4:AK:20:CYS:SG    | 4:AK:71:LEU:CD2   | 2.96        | 0.52     |
| 1:BO:137:HIS:O    | 1:BO:138:MET:HB2  | 2.08        | 0.52     |
| 6:BF:547:THR:CG2  | 6:BF:562:VAL:HG21 | 2.38        | 0.52     |
| 5:CS:677:ILE:HA   | 6:CT:572:ILE:O    | 2.09        | 0.52     |
| 4:AK:46:ILE:HG21  | 4:AK:61:VAL:HG22  | 1.91        | 0.52     |
| 2:BB:286:LYS:HE2  | 3:BC:336:VAL:HG21 | 1.92        | 0.52     |
| 8:CY:865:C:O2'    | 8:CY:866:U:H5'    | 2.09        | 0.52     |
| 7:DN:705:HIS:CE1  | 7:DN:736:PRO:O    | 2.63        | 0.52     |
| 8:BX:853:A:N7     | 8:BX:854:A:N6     | 2.57        | 0.52     |
| 6:CT:585:ARG:O    | 6:CT:586:GLU:HB3  | 2.09        | 0.52     |
| 6:AM:515:THR:OG1  | 6:AM:533:LEU:HG   | 2.09        | 0.52     |
| 2:BB:216:THR:HB   | 2:BB:269:ILE:HD12 | 1.91        | 0.52     |
| 1:AH:188:LYS:O    | 1:AH:192:ILE:N    | 2.33        | 0.52     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:BH:170:VAL:HG12 | 1:BH:171:LEU:N    | 2.24        | 0.52     |
| 5:CS:616:GLN:N    | 5:CS:617:PRO:HD3  | 2.23        | 0.52     |
| 3:DJ:410:LEU:HD23 | 6:DM:562:VAL:CG2  | 2.39        | 0.52     |
| 1:CO:138:MET:HG2  | 8:CY:835:U:C4     | 2.44        | 0.52     |
| 4:BK:28:TYR:CE1   | 4:BK:48:VAL:CG2   | 2.93        | 0.52     |
| 5:BL:621:ILE:HD13 | 7:BN:761:VAL:HG13 | 1.91        | 0.52     |
| 5:CL:655:ASN:O    | 5:CL:656:LEU:HD23 | 2.09        | 0.52     |
| 2:DP:289:SER:O    | 2:DP:292:ARG:HB3  | 2.09        | 0.52     |
| 5:CE:621:ILE:HG13 | 7:CG:741:VAL:CG2  | 2.35        | 0.52     |
| 2:BP:293:GLU:HG2  | 3:BQ:368:GLU:CG   | 2.40        | 0.52     |
| 2:BP:274:LEU:CG   | 2:BP:279:LEU:HD11 | 2.40        | 0.52     |
| 3:BQ:336:VAL:HG22 | 3:BQ:356:VAL:CG1  | 2.39        | 0.52     |
| 5:BS:656:LEU:HD12 | 5:BS:684:ILE:HD11 | 1.90        | 0.52     |
| 3:AQ:374:TRP:HE1  | 3:AQ:391:ASN:ND2  | 2.08        | 0.52     |
| 5:CL:618:ILE:O    | 5:CL:618:ILE:HG12 | 2.09        | 0.52     |
| 5:AL:636:TYR:HD2  | 5:AL:685:THR:CG2  | 2.07        | 0.52     |
| 7:DG:719:LEU:HD23 | 7:DG:767:ILE:HD11 | 1.91        | 0.52     |
| 2:CI:245:MET:CE   | 2:CI:258:LEU:CD2  | 2.87        | 0.52     |
| 4:CR:50:TYR:CD1   | 4:CR:54:ARG:CG    | 2.91        | 0.52     |
| 2:BI:265:ILE:HG22 | 2:BI:266:ARG:N    | 2.23        | 0.52     |
| 6:BF:530:LYS:N    | 6:BF:548:GLU:O    | 2.25        | 0.52     |
| 2:BP:260:ILE:HG21 | 2:BP:265:ILE:HD11 | 1.91        | 0.52     |
| 4:CR:5:VAL:HB     | 4:CR:6:PRO:CD     | 2.40        | 0.52     |
| 3:BQ:388:LYS:N    | 3:BQ:389:PRO:HD3  | 2.24        | 0.52     |
| 1:AA:135:ASP:OD1  | 1:AA:139:ASN:N    | 2.42        | 0.52     |
| 6:DF:533:LEU:HD12 | 6:DF:543:GLN:O    | 2.09        | 0.52     |
| 1:CH:131:PHE:CE1  | 1:CH:134:PHE:HB3  | 2.44        | 0.52     |
| 1:CH:134:PHE:HA   | 1:CH:139:ASN:O    | 2.09        | 0.52     |
| 4:BD:63:ILE:CD1   | 7:BG:769:MET:SD   | 2.97        | 0.52     |
| 7:CG:709:LEU:HB2  | 7:CG:734:PHE:CD2  | 2.44        | 0.52     |
| 2:AI:221:ASN:OD1  | 2:AI:221:ASN:N    | 2.43        | 0.52     |
| 3:BJ:334:GLN:HG2  | 3:BJ:417:GLY:HA3  | 1.90        | 0.52     |
| 7:BG:707:PRO:O    | 7:BG:711:LYS:HG2  | 2.09        | 0.52     |
| 5:DS:622:PHE:HE1  | 5:DS:652:GLU:HA   | 1.74        | 0.52     |
| 2:AP:210:LEU:HD13 | 2:AP:274:LEU:HD11 | 1.77        | 0.52     |
| 8:DX:839:C:C3'    | 8:DX:840:A:H5'    | 2.38        | 0.52     |
| 1:CO:109:MET:HE3  | 2:CP:239:HIS:CE1  | 2.45        | 0.52     |
| 1:CO:181:THR:HB   | 2:CP:258:LEU:HD12 | 1.91        | 0.52     |
| 3:AQ:407:ILE:HG22 | 3:AQ:408:VAL:HG23 | 1.91        | 0.52     |
| 2:DP:207:LEU:HD21 | 3:DQ:400:PHE:CE2  | 2.45        | 0.52     |
| 7:DU:731:LEU:CD1  | 7:DU:740:LEU:HD22 | 2.39        | 0.52     |
| 6:AF:547:THR:HG21 | 6:AF:562:VAL:CB   | 2.39        | 0.52     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:BN:707:PRO:O    | 7:BN:711:LYS:HG2  | 2.10        | 0.52     |
| 3:CC:347:ARG:HG2  | 3:CC:405:SER:HB2  | 1.92        | 0.52     |
| 1:DA:120:ILE:HG23 | 1:DA:126:ILE:CD1  | 2.38        | 0.52     |
| 7:CU:718:SER:C    | 7:CU:719:LEU:HD12 | 2.30        | 0.52     |
| 5:DS:630:ARG:O    | 5:DS:631:ILE:HD13 | 2.09        | 0.52     |
| 3:BC:347:ARG:CA   | 6:BF:525:TRP:HZ2  | 2.22        | 0.52     |
| 7:DG:763:ARG:CZ   | 8:DV:832:U:C6     | 2.93        | 0.52     |
| 1:DO:116:ARG:N    | 1:DO:186:PRO:HD3  | 2.25        | 0.52     |
| 7:CG:739:ASN:HB3  | 7:CG:762:ILE:O    | 2.09        | 0.52     |
| 5:CL:663:GLU:CD   | 5:CL:674:LEU:HD11 | 2.30        | 0.52     |
| 8:BX:853:A:H2'    | 8:BX:854:A:C8     | 2.45        | 0.52     |
| 2:DP:213:GLU:HA   | 2:DP:213:GLU:OE1  | 2.10        | 0.52     |
| 2:CI:295:VAL:O    | 2:CI:295:VAL:CG1  | 2.57        | 0.52     |
| 5:BS:628:ARG:CG   | 5:BS:631:ILE:HD12 | 2.40        | 0.52     |
| 2:AP:265:ILE:CG2  | 2:AP:266:ARG:N    | 2.72        | 0.52     |
| 4:DK:16:HIS:O     | 4:DK:18:VAL:HG13  | 2.10        | 0.52     |
| 2:AP:203:LEU:O    | 2:AP:206:PHE:HB3  | 2.10        | 0.52     |
| 2:AP:280:LEU:HD21 | 2:AP:282:ASP:HB2  | 1.91        | 0.52     |
| 2:DI:286:LYS:CD   | 3:DJ:357:LYS:HZ3  | 2.23        | 0.52     |
| 3:CQ:342:VAL:HG12 | 3:CQ:409:VAL:HG13 | 1.79        | 0.52     |
| 3:BJ:401:LEU:HD12 | 3:BJ:402:ARG:N    | 2.25        | 0.52     |
| 3:AC:406:VAL:CG1  | 6:AF:565:ARG:HG3  | 2.39        | 0.52     |
| 2:AI:276:LEU:CD2  | 3:AJ:357:LYS:HE3  | 2.38        | 0.52     |
| 4:CK:28:TYR:OH    | 7:CN:769:MET:HE2  | 2.09        | 0.52     |
| 3:DC:357:LYS:CG   | 3:DC:368:GLU:OE2  | 2.51        | 0.52     |
| 4:DD:29:ARG:HH22  | 4:DD:49:THR:HG1   | 1.55        | 0.52     |
| 8:BX:858:A:H4'    | 8:DV:814:A:C2     | 2.45        | 0.52     |
| 6:BF:555:LEU:O    | 3:BQ:373:MET:SD   | 2.67        | 0.52     |
| 1:AO:152:LYS:HZ2  | 8:CY:814:A:H8     | 1.48        | 0.52     |
| 2:CP:280:LEU:HD13 | 2:CP:286:LYS:CE   | 2.39        | 0.52     |
| 1:DH:115:TYR:HA   | 1:DH:186:PRO:CD   | 2.40        | 0.52     |
| 7:CG:717:LEU:O    | 7:CG:728:GLN:HG3  | 2.09        | 0.52     |
| 8:DY:825:U:H6     | 8:DY:825:U:O5'    | 1.92        | 0.52     |
| 1:CO:118:ARG:HB3  | 1:CO:181:THR:HG23 | 1.91        | 0.52     |
| 3:CQ:410:LEU:HD13 | 6:CT:559:LEU:HD22 | 1.92        | 0.52     |
| 6:CT:547:THR:CG2  | 6:CT:562:VAL:HG23 | 2.37        | 0.52     |
| 7:CG:742:ILE:HB   | 7:CG:760:VAL:CG1  | 2.38        | 0.52     |
| 6:BM:524:LYS:CD   | 8:BX:838:A:C2     | 2.93        | 0.52     |
| 8:BV:814:A:C2     | 8:BV:815:A:C2     | 2.97        | 0.52     |
| 3:BQ:407:ILE:CD1  | 6:BT:525:TRP:CZ3  | 2.93        | 0.52     |
| 2:BP:202:LYS:HG3  | 2:BP:204:VAL:HG22 | 1.92        | 0.52     |
| 3:DC:332:LEU:CD2  | 3:DC:359:PHE:CE1  | 2.89        | 0.52     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:CU:718:SER:OG   | 7:CU:726:HIS:NE2  | 2.41        | 0.52     |
| 7:CN:709:LEU:CD1  | 7:CN:734:PHE:HB3  | 2.26        | 0.52     |
| 4:BR:77:LEU:O     | 4:BR:81:PRO:HD2   | 2.09        | 0.52     |
| 3:BJ:340:THR:O    | 3:BJ:355:ARG:HA   | 2.10        | 0.52     |
| 7:CN:705:HIS:HB2  | 7:CN:736:PRO:HA   | 1.92        | 0.52     |
| 3:AC:316:LEU:HD12 | 3:AC:337:LYS:NZ   | 2.24        | 0.52     |
| 8:AX:835:U:HO2'   | 8:AX:836:U:H4'    | 1.74        | 0.52     |
| 5:BL:642:ARG:HG2  | 5:BL:664:ILE:HB   | 1.91        | 0.52     |
| 3:AC:370:VAL:HG11 | 3:AC:399:MET:SD   | 2.49        | 0.52     |
| 2:CB:221:ASN:OD1  | 2:CB:223:THR:OG1  | 2.21        | 0.52     |
| 3:BQ:392:LYS:HZ3  | 8:BV:868:G:C2'    | 2.22        | 0.52     |
| 8:CY:852:U:C4     | 8:CY:853:A:C6     | 2.98        | 0.52     |
| 4:CD:12:GLU:HG3   | 4:CD:79:ASN:ND2   | 2.24        | 0.52     |
| 5:DL:647:ILE:O    | 5:DL:648:ILE:HD13 | 2.10        | 0.52     |
| 8:CV:856:C:H2'    | 8:CV:857:U:O4'    | 2.10        | 0.52     |
| 8:CX:851:G:N2     | 8:CX:853:A:H3'    | 2.25        | 0.52     |
| 6:DT:566:CYS:O    | 6:DT:569:VAL:N    | 2.43        | 0.52     |
| 8:BY:854:A:C5     | 8:BY:855:C:H1'    | 2.44        | 0.52     |
| 3:BJ:351:LYS:O    | 3:BJ:373:MET:N    | 2.42        | 0.52     |
| 3:DJ:348:ASN:OD1  | 8:DX:840:A:H4'    | 2.09        | 0.52     |
| 5:CE:635:LEU:HD22 | 5:CE:679:LEU:CD1  | 2.39        | 0.52     |
| 8:AV:847:A:H61    | 8:CX:814:A:N6     | 2.07        | 0.52     |
| 3:BJ:408:VAL:CG1  | 6:BM:562:VAL:HG13 | 2.40        | 0.52     |
| 6:BM:547:THR:HG21 | 6:BM:562:VAL:CB   | 2.39        | 0.52     |
| 3:AC:347:ARG:HA   | 6:AF:525:TRP:CZ2  | 2.44        | 0.52     |
| 7:BU:769:MET:C    | 7:BU:770:LEU:HD12 | 2.30        | 0.52     |
| 3:DC:332:LEU:HB3  | 3:DC:359:PHE:CZ   | 2.45        | 0.52     |
| 8:DV:829:C:HO2'   | 8:DV:830:A:P      | 2.31        | 0.52     |
| 3:BC:340:THR:HG23 | 3:BC:414:LEU:HB2  | 1.92        | 0.52     |
| 5:DL:621:ILE:HD11 | 7:DN:740:LEU:O    | 2.09        | 0.52     |
| 3:AC:391:ASN:O    | 6:AT:554:ALA:HB3  | 2.09        | 0.52     |
| 5:CE:634:TRP:CZ3  | 5:CE:636:TYR:HB2  | 2.45        | 0.52     |
| 8:AX:813:G:C2     | 8:AX:815:A:P      | 3.03        | 0.52     |
| 2:CI:220:LYS:N    | 2:CI:266:ARG:HB2  | 2.25        | 0.52     |
| 3:CJ:396:ILE:HG21 | 3:CJ:399:MET:HE1  | 1.92        | 0.52     |
| 1:AA:173:ARG:CZ   | 8:AV:834:U:C2     | 2.93        | 0.52     |
| 6:BM:579:GLU:O    | 6:BM:583:GLU:CB   | 2.57        | 0.52     |
| 3:CQ:388:LYS:H    | 3:CQ:389:PRO:CD   | 2.22        | 0.52     |
| 4:CR:21:GLU:CB    | 4:CR:70:PHE:CZ    | 2.93        | 0.52     |
| 5:CE:668:THR:O    | 5:CE:668:THR:HG22 | 2.09        | 0.52     |
| 8:AY:802:C:N4     | 8:AY:803:C:C5     | 2.78        | 0.52     |
| 3:DJ:342:VAL:CG1  | 3:DJ:409:VAL:CG1  | 2.87        | 0.52     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:DM:524:LYS:HB2  | 8:DX:838:A:N6     | 2.25        | 0.52     |
| 5:BS:639:VAL:HG22 | 6:BT:524:LYS:HE3  | 1.92        | 0.52     |
| 5:BS:644:GLU:O    | 5:BS:661:ALA:HA   | 2.09        | 0.52     |
| 3:AC:348:ASN:OD1  | 8:AV:840:A:O3'    | 2.27        | 0.52     |
| 6:CF:524:LYS:CB   | 6:CF:570:LEU:HD21 | 2.40        | 0.52     |
| 6:BF:547:THR:HG21 | 6:BF:562:VAL:HB   | 1.92        | 0.52     |
| 6:BF:523:LEU:HD23 | 6:BF:568:ASN:HB3  | 1.92        | 0.52     |
| 3:AQ:346:CYS:HB2  | 3:AQ:350:LYS:CG   | 2.31        | 0.52     |
| 2:AP:263:ASN:HB2  | 8:AY:835:U:O2'    | 2.10        | 0.52     |
| 8:CY:866:U:H3'    | 8:CY:867:G:H5''   | 1.91        | 0.52     |
| 3:BJ:328:PRO:HB3  | 3:BJ:361:ARG:HH11 | 1.75        | 0.52     |
| 1:CO:178:VAL:HG13 | 2:CP:264:ASN:CG   | 2.29        | 0.52     |
| 3:DJ:388:LYS:N    | 3:DJ:389:PRO:HD3  | 2.24        | 0.52     |
| 5:DS:655:ASN:ND2  | 8:DY:831:A:N1     | 2.58        | 0.52     |
| 8:BX:828:G:N2     | 8:BX:829:C:O2     | 2.43        | 0.52     |
| 5:BS:663:GLU:N    | 5:BS:672:LYS:O    | 2.37        | 0.52     |
| 3:AQ:407:ILE:HD13 | 6:AT:525:TRP:CZ3  | 2.42        | 0.52     |
| 3:AJ:347:ARG:HA   | 6:AM:525:TRP:CH2  | 2.44        | 0.52     |
| 5:BL:621:ILE:HD11 | 7:BN:740:LEU:N    | 2.25        | 0.52     |
| 6:CF:521:VAL:CG2  | 6:CF:572:ILE:CD1  | 2.88        | 0.52     |
| 5:BS:653:TYR:CE2  | 8:BY:831:A:C8     | 2.98        | 0.52     |
| 5:BL:620:LEU:HD22 | 7:BN:735:ASP:CB   | 2.40        | 0.52     |
| 2:CB:260:ILE:CG2  | 2:CB:261:ARG:N    | 2.73        | 0.52     |
| 2:CB:218:GLU:O    | 2:CB:266:ARG:N    | 2.39        | 0.52     |
| 5:BE:647:ILE:CD1  | 5:BE:656:LEU:HD23 | 2.37        | 0.52     |
| 3:BC:342:VAL:HG22 | 3:BC:411:ARG:HD3  | 1.92        | 0.52     |
| 6:BF:521:VAL:CG1  | 6:BF:569:VAL:HG13 | 2.40        | 0.52     |
| 2:BB:286:LYS:HD3  | 3:BC:357:LYS:HD2  | 1.92        | 0.52     |
| 2:BB:283:VAL:HG11 | 2:BB:286:LYS:NZ   | 2.25        | 0.52     |
| 2:BB:249:ASN:HD21 | 8:BV:859:A:H5'    | 1.73        | 0.52     |
| 6:CM:514:LEU:HD12 | 6:CM:517:LYS:CD   | 2.37        | 0.52     |
| 1:BH:167:LEU:HD22 | 4:BK:72:ILE:CD1   | 2.36        | 0.52     |
| 6:AM:540:MET:HB2  | 6:AM:566:CYS:SG   | 2.49        | 0.52     |
| 2:DP:211:SER:O    | 2:DP:212:HIS:HB3  | 2.09        | 0.52     |
| 4:BD:10:LEU:CD2   | 4:BD:35:ALA:CB    | 2.88        | 0.52     |
| 8:DX:842:U:C2'    | 8:DX:843:C:C5'    | 2.88        | 0.51     |
| 6:AT:524:LYS:HB2  | 6:AT:570:LEU:HD21 | 1.93        | 0.51     |
| 5:AS:635:LEU:HD23 | 5:AS:643:ILE:HD12 | 1.92        | 0.51     |
| 4:BK:63:ILE:CD1   | 7:BN:769:MET:CE   | 2.88        | 0.51     |
| 7:AU:725:ARG:CD   | 7:AU:749:ALA:HB2  | 2.40        | 0.51     |
| 5:CE:621:ILE:HG23 | 7:CG:741:VAL:HG21 | 1.92        | 0.51     |
| 6:BM:524:LYS:CG   | 6:BM:570:LEU:HD13 | 2.25        | 0.51     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AC:361:ARG:HE   | 8:AV:830:A:H5'    | 1.74        | 0.51     |
| 4:CK:28:TYR:OH    | 7:CN:769:MET:HE1  | 2.10        | 0.51     |
| 2:CI:212:HIS:CE1  | 2:CI:228:THR:HG21 | 2.44        | 0.51     |
| 7:CG:721:LEU:HD11 | 7:CG:727:VAL:HB   | 1.91        | 0.51     |
| 3:AC:316:LEU:CD1  | 3:AC:337:LYS:CE   | 2.81        | 0.51     |
| 7:DN:745:CYS:SG   | 7:DN:760:VAL:CG1  | 2.98        | 0.51     |
| 2:DI:274:LEU:HB3  | 3:DJ:398:LYS:HZ2  | 1.75        | 0.51     |
| 6:BF:530:LYS:HB2  | 6:BF:550:TYR:HE2  | 1.74        | 0.51     |
| 2:DP:247:LEU:HD22 | 2:DP:250:ARG:H    | 1.75        | 0.51     |
| 4:BD:30:GLY:HA3   | 4:BD:46:ILE:HG22  | 1.92        | 0.51     |
| 6:AT:506:ASN:N    | 6:AT:507:PRO:CD   | 2.73        | 0.51     |
| 4:CD:5:VAL:N      | 4:CD:6:PRO:CD     | 2.73        | 0.51     |
| 2:AB:272:ASP:O    | 2:AB:294:ALA:HA   | 2.10        | 0.51     |
| 1:CO:118:ARG:HD2  | 1:CO:181:THR:CG2  | 2.40        | 0.51     |
| 2:DI:229:ILE:HG22 | 2:DI:231:GLY:H    | 1.75        | 0.51     |
| 7:AN:741:VAL:CG1  | 7:AN:759:MET:SD   | 2.98        | 0.51     |
| 2:AI:280:LEU:HG   | 2:AI:283:VAL:H    | 1.74        | 0.51     |
| 3:AC:410:LEU:HD13 | 6:AF:559:LEU:HD21 | 1.92        | 0.51     |
| 5:DL:674:LEU:HD13 | 6:DM:573:ARG:HD2  | 1.90        | 0.51     |
| 3:AQ:376:GLU:HB2  | 3:AQ:391:ASN:N    | 2.25        | 0.51     |
| 7:BN:758:GLY:O    | 5:BS:630:ARG:NH1  | 2.41        | 0.51     |
| 2:AI:202:LYS:O    | 2:AI:281:VAL:CG2  | 2.58        | 0.51     |
| 5:CS:635:LEU:CD1  | 5:CS:687:LEU:CD2  | 2.89        | 0.51     |
| 5:CS:674:LEU:HD12 | 5:CS:677:ILE:CD1  | 2.30        | 0.51     |
| 2:AB:207:LEU:HA   | 2:AB:210:LEU:HD12 | 1.91        | 0.51     |
| 2:BB:283:VAL:HG11 | 2:BB:286:LYS:HZ1  | 1.74        | 0.51     |
| 3:DJ:372:GLU:HG3  | 3:DJ:374:TRP:CE3  | 2.44        | 0.51     |
| 5:BL:640:ASN:HD21 | 5:BL:666:SER:CB   | 2.23        | 0.51     |
| 4:BD:27:VAL:O     | 4:BD:48:VAL:HA    | 2.09        | 0.51     |
| 3:BJ:361:ARG:C    | 3:BJ:363:CYS:H    | 2.14        | 0.51     |
| 6:AF:520:MET:HG3  | 6:AF:575:VAL:HG12 | 1.91        | 0.51     |
| 1:BO:141:ILE:CD1  | 1:BO:171:LEU:HD12 | 2.37        | 0.51     |
| 8:AY:853:A:H8     | 8:AY:853:A:O5'    | 1.93        | 0.51     |
| 4:CR:4:GLY:HA3    | 4:CR:7:ILE:HD12   | 1.91        | 0.51     |
| 2:DP:234:VAL:HG11 | 8:DY:801:G:O6     | 2.09        | 0.51     |
| 1:CO:135:ASP:OD1  | 1:CO:139:ASN:N    | 2.42        | 0.51     |
| 1:BO:153:PRO:HD2  | 1:BO:158:GLN:NE2  | 2.25        | 0.51     |
| 4:DD:59:GLU:HG3   | 7:DG:773:LEU:HD22 | 1.92        | 0.51     |
| 2:DP:205:ARG:O    | 2:DP:206:PHE:C    | 2.46        | 0.51     |
| 8:AV:853:A:H2'    | 8:AV:854:A:C8     | 2.45        | 0.51     |
| 1:BA:118:ARG:NH1  | 1:BA:126:ILE:HG21 | 2.24        | 0.51     |
| 3:BJ:365:MET:HE3  | 3:BJ:401:LEU:HD23 | 1.92        | 0.51     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:CR:90:ASN:O     | 4:CR:91:GLN:C     | 2.48        | 0.51     |
| 6:BM:533:LEU:HA   | 6:BM:544:LEU:HD23 | 1.92        | 0.51     |
| 7:BN:709:LEU:CD2  | 7:BN:734:PHE:HB3  | 2.35        | 0.51     |
| 5:BS:678:MET:HE3  | 6:BT:511:LEU:HD21 | 1.92        | 0.51     |
| 3:AC:347:ARG:HD2  | 3:AC:405:SER:CB   | 2.41        | 0.51     |
| 6:AF:539:TYR:CE2  | 8:AV:837:G:C2     | 2.99        | 0.51     |
| 6:BF:539:TYR:CE2  | 6:BF:566:CYS:HB3  | 2.45        | 0.51     |
| 2:AB:207:LEU:HA   | 2:AB:210:LEU:CD1  | 2.40        | 0.51     |
| 1:BA:134:PHE:HA   | 1:BA:139:ASN:O    | 2.11        | 0.51     |
| 7:DG:769:MET:C    | 7:DG:770:LEU:HD12 | 2.30        | 0.51     |
| 3:DJ:352:LEU:CD1  | 3:DJ:401:LEU:HD22 | 2.22        | 0.51     |
| 3:BJ:366:VAL:C    | 3:BJ:367:LEU:HD23 | 2.31        | 0.51     |
| 1:AO:118:ARG:HG3  | 1:AO:128:ILE:CD1  | 2.41        | 0.51     |
| 3:CJ:382:LYS:O    | 3:CJ:385:LYS:HG3  | 2.10        | 0.51     |
| 4:CR:82:MET:O     | 4:CR:86:MET:HG2   | 2.09        | 0.51     |
| 5:CL:657:VAL:O    | 5:CL:658:LEU:HD23 | 2.11        | 0.51     |
| 3:AQ:344:ILE:HD11 | 3:AQ:365:MET:SD   | 2.50        | 0.51     |
| 3:DJ:329:LEU:HD23 | 3:DJ:359:PHE:CE2  | 2.45        | 0.51     |
| 5:BE:688:GLN:HE22 | 7:BG:757:ILE:CG1  | 2.23        | 0.51     |
| 6:CT:565:ARG:CZ   | 8:CY:837:G:C2     | 2.94        | 0.51     |
| 6:CM:519:VAL:HG21 | 6:CM:572:ILE:CD1  | 2.37        | 0.51     |
| 2:BP:293:GLU:CB   | 3:BQ:368:GLU:HG3  | 2.40        | 0.51     |
| 6:BM:529:TYR:HA   | 6:BM:548:GLU:O    | 2.10        | 0.51     |
| 5:AE:661:ALA:HB3  | 5:AE:674:LEU:O    | 2.10        | 0.51     |
| 7:AG:757:ILE:HG22 | 7:AG:758:GLY:N    | 2.25        | 0.51     |
| 5:AE:655:ASN:ND2  | 8:AV:831:A:N1     | 2.59        | 0.51     |
| 7:CU:734:PHE:HD1  | 7:CU:740:LEU:HD23 | 1.75        | 0.51     |
| 7:CU:767:ILE:HG21 | 7:CU:770:LEU:CD1  | 2.41        | 0.51     |
| 8:AX:866:U:C3'    | 8:AX:867:G:C5'    | 2.86        | 0.51     |
| 4:AR:74:PRO:O     | 4:AR:77:LEU:HD12  | 2.10        | 0.51     |
| 5:DE:628:ARG:HD3  | 5:DE:631:ILE:HG13 | 1.93        | 0.51     |
| 6:DT:520:MET:SD   | 6:DT:575:VAL:CG2  | 2.95        | 0.51     |
| 8:CY:811:C:C2'    | 8:CY:812:U:O4'    | 2.57        | 0.51     |
| 1:BA:173:ARG:HD3  | 4:BD:68:ILE:O     | 2.11        | 0.51     |
| 3:DQ:407:ILE:HD11 | 6:DT:525:TRP:CH2  | 2.46        | 0.51     |
| 8:CX:853:A:H2'    | 8:CX:854:A:C8     | 2.46        | 0.51     |
| 7:BG:746:VAL:HG21 | 7:BG:753:GLN:HG3  | 1.92        | 0.51     |
| 4:CR:58:LEU:HD13  | 7:CU:771:GLU:HB2  | 1.92        | 0.51     |
| 8:BV:811:C:H2'    | 8:BV:812:U:O4'    | 2.10        | 0.51     |
| 3:CC:410:LEU:HD23 | 6:CF:562:VAL:HG13 | 1.93        | 0.51     |
| 3:AQ:327:GLY:HA3  | 6:AT:535:SER:CB   | 2.41        | 0.51     |
| 5:BE:688:GLN:CD   | 7:BG:757:ILE:CG2  | 2.69        | 0.51     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AJ:348:ASN:HD21 | 8:AX:840:A:C5'    | 2.23        | 0.51     |
| 6:AM:546:ASN:O    | 6:AM:546:ASN:OD1  | 2.28        | 0.51     |
| 7:DG:742:ILE:HB   | 7:DG:760:VAL:CG1  | 2.41        | 0.51     |
| 5:CE:674:LEU:HD12 | 5:CE:677:ILE:HD11 | 1.92        | 0.51     |
| 1:BH:131:PHE:CE2  | 1:BH:140:LEU:HD22 | 2.42        | 0.51     |
| 2:BP:280:LEU:HD22 | 2:BP:286:LYS:HE2  | 1.77        | 0.51     |
| 2:BP:206:PHE:CE1  | 2:BP:279:LEU:CB   | 2.92        | 0.51     |
| 6:AF:537:ASP:OD1  | 6:AF:541:ASN:HB2  | 2.10        | 0.51     |
| 8:CV:864:A:H2'    | 8:CV:865:C:O4'    | 2.10        | 0.51     |
| 2:CP:283:VAL:O    | 2:CP:287:VAL:HG23 | 2.10        | 0.51     |
| 2:BB:274:LEU:N    | 2:BB:275:PRO:CD   | 2.72        | 0.51     |
| 3:DJ:350:LYS:HG2  | 3:DJ:374:TRP:HB2  | 1.92        | 0.51     |
| 6:DF:514:LEU:HD21 | 6:DF:572:ILE:HD13 | 1.92        | 0.51     |
| 4:DR:44:SER:HA    | 4:DR:59:GLU:O     | 2.11        | 0.51     |
| 6:BF:550:TYR:O    | 6:BF:550:TYR:CD1  | 2.63        | 0.51     |
| 4:CK:14:GLU:HB2   | 4:CK:33:ILE:O     | 2.10        | 0.51     |
| 7:DN:704:ALA:C    | 7:DN:706:PRO:HD2  | 2.31        | 0.51     |
| 7:BG:731:LEU:HD13 | 7:BG:740:LEU:HD23 | 1.88        | 0.51     |
| 4:DD:15:GLY:O     | 4:DD:31:LYS:HB3   | 2.10        | 0.51     |
| 7:DG:749:ALA:HB3  | 7:DG:754:GLN:CD   | 2.30        | 0.51     |
| 3:BJ:336:VAL:CG2  | 3:BJ:357:LYS:O    | 2.58        | 0.51     |
| 5:CS:615:VAL:HG22 | 5:CS:616:GLN:H    | 1.75        | 0.51     |
| 2:BI:284:GLU:HB2  | 2:BI:285:PRO:HD3  | 1.93        | 0.51     |
| 8:BX:842:U:H2'    | 8:BX:843:C:C6     | 2.46        | 0.51     |
| 6:DF:582:GLY:O    | 6:DF:586:GLU:HG3  | 2.11        | 0.51     |
| 8:AV:843:C:O2'    | 8:AV:844:U:H5'    | 2.11        | 0.51     |
| 2:AP:277:ASP:OD1  | 2:AP:278:THR:N    | 2.43        | 0.51     |
| 2:DP:210:LEU:CD2  | 2:DP:274:LEU:CD1  | 2.89        | 0.51     |
| 4:BK:9:VAL:HG13   | 4:BK:10:LEU:CG    | 2.34        | 0.51     |
| 5:BS:661:ALA:HB3  | 5:BS:677:ILE:HD11 | 1.93        | 0.51     |
| 2:AI:205:ARG:HA   | 2:AI:208:MET:HG3  | 1.93        | 0.51     |
| 1:DA:120:ILE:HG13 | 1:DA:179:SER:O    | 2.11        | 0.51     |
| 6:CT:575:VAL:CG1  | 6:CT:575:VAL:O    | 2.58        | 0.51     |
| 5:AE:632:GLN:O    | 5:AE:689:SER:OG   | 2.13        | 0.51     |
| 1:CA:118:ARG:HH11 | 1:CA:126:ILE:HG21 | 1.76        | 0.51     |
| 1:AH:113:ILE:C    | 1:AH:115:TYR:H    | 2.14        | 0.51     |
| 2:BP:217:ILE:CG2  | 2:BP:265:ILE:HG21 | 2.40        | 0.51     |
| 4:DR:13:ALA:O     | 4:DR:16:HIS:HB2   | 2.10        | 0.51     |
| 3:CC:341:GLN:OE1  | 3:CC:355:ARG:CZ   | 2.58        | 0.51     |
| 7:BG:768:ILE:HG22 | 7:BG:769:MET:HE3  | 1.92        | 0.51     |
| 6:BF:551:ILE:O    | 6:BF:554:ALA:N    | 2.35        | 0.51     |
| 3:BJ:334:GLN:HG2  | 3:BJ:417:GLY:CA   | 2.40        | 0.51     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:AY:802:C:C6     | 8:AY:802:C:H5''   | 2.45        | 0.51     |
| 2:AP:276:LEU:HB3  | 3:AQ:357:LYS:HE3  | 1.93        | 0.51     |
| 6:CT:523:LEU:O    | 6:CT:526:GLY:N    | 2.33        | 0.51     |
| 5:CE:621:ILE:CG1  | 7:CG:741:VAL:HG23 | 2.35        | 0.51     |
| 8:AV:847:A:N6     | 8:CX:814:A:N1     | 2.58        | 0.51     |
| 3:AQ:392:LYS:NZ   | 8:AV:868:G:H2'    | 2.25        | 0.51     |
| 1:CA:120:ILE:N    | 1:CA:179:SER:O    | 2.42        | 0.51     |
| 1:BO:118:ARG:HD2  | 1:BO:181:THR:HG23 | 1.93        | 0.51     |
| 5:DE:618:ILE:HD13 | 7:DG:709:LEU:CD2  | 2.38        | 0.51     |
| 1:CH:118:ARG:HD2  | 1:CH:181:THR:CG2  | 2.40        | 0.51     |
| 1:DO:113:ILE:O    | 1:DO:114:ASP:HB2  | 2.10        | 0.51     |
| 2:AI:261:ARG:NH1  | 2:AI:263:ASN:HB3  | 2.26        | 0.51     |
| 6:BT:539:TYR:HD2  | 6:BT:541:ASN:OD1  | 1.93        | 0.51     |
| 1:CO:118:ARG:O    | 1:CO:180:MET:HA   | 2.11        | 0.51     |
| 2:CP:235:SER:O    | 2:CP:236:MET:CB   | 2.57        | 0.51     |
| 2:DI:286:LYS:HE3  | 3:DJ:358:ALA:HB2  | 1.92        | 0.51     |
| 3:CJ:357:LYS:HB3  | 3:CJ:366:VAL:O    | 2.11        | 0.51     |
| 5:BE:666:SER:C    | 5:BE:668:THR:N    | 2.64        | 0.51     |
| 7:BG:729:GLY:HA3  | 7:BG:742:ILE:HG21 | 1.93        | 0.51     |
| 5:BL:653:TYR:CD2  | 8:BX:831:A:H2'    | 2.46        | 0.51     |
| 8:CX:838:A:O2'    | 8:CX:839:C:O4'    | 2.29        | 0.51     |
| 8:AV:859:A:H2'    | 8:AV:860:G:O4'    | 2.11        | 0.51     |
| 3:BQ:410:LEU:HD13 | 6:BT:559:LEU:HD22 | 1.92        | 0.51     |
| 5:CL:635:LEU:HD22 | 5:CL:679:LEU:CD1  | 2.40        | 0.51     |
| 7:BU:713:MET:CE   | 7:BU:732:ARG:O    | 2.59        | 0.51     |
| 1:CA:120:ILE:O    | 1:CA:177:LEU:HD12 | 2.11        | 0.51     |
| 2:CB:207:LEU:HA   | 2:CB:210:LEU:HD12 | 1.91        | 0.51     |
| 3:CC:361:ARG:C    | 3:CC:363:CYS:H    | 2.14        | 0.51     |
| 2:AI:208:MET:HE1  | 2:AI:234:VAL:HA   | 1.93        | 0.51     |
| 1:DA:177:LEU:HD21 | 1:DA:180:MET:SD   | 2.51        | 0.51     |
| 6:CT:535:SER:O    | 6:CT:536:VAL:HG23 | 2.10        | 0.51     |
| 2:BB:210:LEU:O    | 2:BB:211:SER:C    | 2.50        | 0.51     |
| 7:DG:716:LYS:O    | 7:DG:717:LEU:HD23 | 2.10        | 0.51     |
| 8:AX:815:A:N6     | 8:AX:816:A:N1     | 2.58        | 0.51     |
| 3:AJ:396:ILE:HD12 | 3:AJ:399:MET:CE   | 2.39        | 0.51     |
| 8:CY:853:A:N6     | 8:CY:854:A:N1     | 2.59        | 0.51     |
| 3:DQ:347:ARG:N    | 3:DQ:405:SER:O    | 2.44        | 0.51     |
| 1:BH:151:ILE:HG22 | 1:BH:152:LYS:N    | 2.26        | 0.51     |
| 6:CM:583:GLU:HA   | 6:CM:586:GLU:O    | 2.11        | 0.51     |
| 6:CM:567:ASN:OD1  | 6:CM:568:ASN:N    | 2.43        | 0.51     |
| 2:DP:206:PHE:HB2  | 2:DP:280:LEU:HD13 | 1.92        | 0.51     |
| 6:AF:558:HIS:NE2  | 3:AQ:413:PRO:HG2  | 2.26        | 0.51     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BJ:347:ARG:HH12 | 8:BX:840:A:P      | 2.34        | 0.51     |
| 2:BP:236:MET:CE   | 3:BQ:364:ASN:HD21 | 2.22        | 0.51     |
| 1:CA:162:GLU:OE2  | 8:CV:848:U:O2     | 2.29        | 0.51     |
| 6:BT:522:LYS:HD3  | 6:BT:571:TYR:CZ   | 2.45        | 0.51     |
| 3:AQ:392:LYS:HE2  | 8:AV:868:G:H2'    | 1.92        | 0.51     |
| 2:DB:229:ILE:HA   | 2:DB:240:LEU:HD23 | 1.92        | 0.51     |
| 2:CP:285:PRO:CG   | 3:CQ:337:LYS:NZ   | 2.73        | 0.51     |
| 5:DS:674:LEU:CD1  | 6:DT:573:ARG:HD2  | 2.41        | 0.51     |
| 4:DR:77:LEU:O     | 4:DR:81:PRO:HD2   | 2.11        | 0.51     |
| 2:BB:206:PHE:HB2  | 2:BB:276:LEU:CD2  | 2.41        | 0.51     |
| 2:BB:237:ASN:ND2  | 8:BV:835:U:H3     | 2.09        | 0.51     |
| 2:DB:274:LEU:HD12 | 2:DB:275:PRO:CD   | 2.41        | 0.51     |
| 3:AJ:329:LEU:HB3  | 3:AJ:359:PHE:HE1  | 1.76        | 0.51     |
| 1:AO:179:SER:OG   | 2:AP:260:ILE:HG12 | 2.11        | 0.51     |
| 8:AX:813:G:C5     | 8:AX:817:A:N6     | 2.78        | 0.51     |
| 1:AH:132:LYS:O    | 4:AK:83:LEU:HD12  | 2.11        | 0.51     |
| 1:AH:132:LYS:HE3  | 4:AK:84:LYS:HB2   | 1.93        | 0.51     |
| 2:CI:230:THR:CG2  | 2:CI:241:LYS:HG3  | 2.39        | 0.51     |
| 1:CA:114:ASP:O    | 1:CA:187:PRO:HD2  | 2.11        | 0.51     |
| 4:BD:46:ILE:HD11  | 4:BD:58:LEU:HB2   | 1.93        | 0.51     |
| 8:BY:818:G:C2     | 8:BY:819:U:N3     | 2.79        | 0.51     |
| 1:DH:171:LEU:C    | 1:DH:171:LEU:HD23 | 2.31        | 0.51     |
| 2:AP:272:ASP:OD1  | 2:AP:272:ASP:N    | 2.43        | 0.51     |
| 1:AA:169:LEU:CD2  | 4:AD:73:LEU:HD12  | 2.40        | 0.51     |
| 3:CQ:376:GLU:HB2  | 3:CQ:391:ASN:CA   | 2.41        | 0.51     |
| 1:BA:118:ARG:HB3  | 1:BA:181:THR:CG2  | 2.40        | 0.51     |
| 1:CO:195:VAL:HG12 | 1:CO:195:VAL:O    | 2.11        | 0.51     |
| 1:BH:122:GLN:HA   | 1:BH:178:VAL:HG11 | 1.93        | 0.51     |
| 5:AE:636:TYR:CD1  | 5:AE:685:THR:HB   | 2.46        | 0.51     |
| 3:AC:359:PHE:HA   | 3:AC:364:ASN:O    | 2.11        | 0.51     |
| 2:CB:220:LYS:CE   | 3:CC:404:ASP:HB2  | 2.39        | 0.51     |
| 5:BE:653:TYR:O    | 5:BE:654:MET:HB2  | 2.10        | 0.51     |
| 3:BC:407:ILE:HA   | 6:BF:568:ASN:ND2  | 2.26        | 0.51     |
| 4:DK:46:ILE:HD12  | 4:DK:46:ILE:C     | 2.30        | 0.51     |
| 5:DL:624:TYR:CE2  | 7:DN:761:VAL:CG2  | 2.90        | 0.51     |
| 1:CH:118:ARG:O    | 1:CH:180:MET:HA   | 2.11        | 0.51     |
| 5:CL:643:ILE:CG2  | 5:CL:661:ALA:HB1  | 2.41        | 0.51     |
| 2:BI:203:LEU:O    | 2:BI:206:PHE:HB3  | 2.12        | 0.51     |
| 2:BI:210:LEU:O    | 2:BI:213:GLU:HG2  | 2.11        | 0.51     |
| 3:AC:379:LYS:HG2  | 3:AC:387:SER:HB3  | 1.92        | 0.51     |
| 4:DR:58:LEU:HD13  | 4:DR:61:VAL:HG12  | 1.93        | 0.51     |
| 2:CP:280:LEU:HD23 | 2:CP:282:ASP:N    | 2.25        | 0.51     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BQ:388:LYS:H    | 3:BQ:389:PRO:HD3  | 1.76        | 0.51     |
| 3:CQ:341:GLN:HB2  | 3:CQ:354:GLY:O    | 2.11        | 0.51     |
| 5:DL:633:VAL:HG21 | 5:DL:647:ILE:CB   | 2.42        | 0.51     |
| 5:AL:633:VAL:HG21 | 5:AL:647:ILE:HG22 | 1.93        | 0.51     |
| 1:AA:132:LYS:CG   | 1:AA:143:CYS:SG   | 2.99        | 0.51     |
| 2:AB:292:ARG:NE   | 6:AT:586:GLU:OXT  | 2.44        | 0.51     |
| 3:BC:353:LEU:O    | 3:BC:370:VAL:HA   | 2.10        | 0.51     |
| 8:DY:824:A:H2'    | 8:DY:825:U:C6     | 2.46        | 0.51     |
| 8:BY:810:A:H2'    | 8:BY:811:C:C6     | 2.46        | 0.51     |
| 3:AC:338:ASN:O    | 3:AC:339:ASN:HB3  | 2.11        | 0.51     |
| 1:DH:105:LYS:HD2  | 2:DI:234:VAL:HG11 | 1.93        | 0.51     |
| 2:AB:216:THR:HA   | 2:AB:225:VAL:O    | 2.11        | 0.51     |
| 4:CD:28:TYR:CD2   | 4:CD:46:ILE:HD13  | 2.46        | 0.51     |
| 2:AP:206:PHE:CE1  | 2:AP:279:LEU:HB2  | 2.46        | 0.50     |
| 3:DJ:409:VAL:CG2  | 6:DM:563:LEU:HD23 | 2.40        | 0.50     |
| 2:CP:217:ILE:HD12 | 2:CP:260:ILE:HD12 | 1.93        | 0.50     |
| 8:AX:840:A:C5     | 8:AX:841:G:C8     | 2.99        | 0.50     |
| 4:BK:64:ARG:HB3   | 4:BK:67:LYS:HG2   | 1.92        | 0.50     |
| 7:BN:719:LEU:HD12 | 7:BN:719:LEU:N    | 2.26        | 0.50     |
| 3:CQ:347:ARG:O    | 3:CQ:349:ASN:N    | 2.39        | 0.50     |
| 3:CQ:346:CYS:HA   | 3:CQ:405:SER:O    | 2.11        | 0.50     |
| 4:AK:21:GLU:HB3   | 4:AK:70:PHE:CE2   | 2.46        | 0.50     |
| 6:CF:529:TYR:CD2  | 6:CF:549:GLU:HB3  | 2.46        | 0.50     |
| 3:AJ:358:ALA:HB3  | 3:AJ:366:VAL:CG2  | 2.40        | 0.50     |
| 4:DR:19:THR:HB    | 4:DR:72:ILE:HB    | 1.93        | 0.50     |
| 5:DL:690:VAL:O    | 5:DL:690:VAL:HG12 | 2.11        | 0.50     |
| 5:DS:629:SER:O    | 5:DS:630:ARG:HB3  | 2.12        | 0.50     |
| 2:AB:207:LEU:HD23 | 2:AB:210:LEU:HD11 | 1.93        | 0.50     |
| 1:DA:133:ALA:HB3  | 1:DA:141:ILE:HG13 | 1.92        | 0.50     |
| 8:DY:836:U:H4'    | 8:DY:837:G:OP2    | 2.11        | 0.50     |
| 7:CU:742:ILE:HB   | 7:CU:760:VAL:CG1  | 2.41        | 0.50     |
| 4:BD:48:VAL:HG13  | 4:BD:56:ALA:HB3   | 1.92        | 0.50     |
| 2:CP:293:GLU:O    | 2:CP:295:VAL:O    | 2.29        | 0.50     |
| 4:AD:68:ILE:HD13  | 4:AD:71:LEU:HD11  | 1.94        | 0.50     |
| 1:BA:173:ARG:NH2  | 8:BV:834:U:O2     | 2.43        | 0.50     |
| 8:AY:863:G:H2'    | 8:AY:864:A:H8     | 1.76        | 0.50     |
| 4:BD:28:TYR:CD2   | 4:BD:46:ILE:HD13  | 2.46        | 0.50     |
| 1:BA:152:LYS:HE2  | 1:BA:160:GLU:HA   | 1.92        | 0.50     |
| 3:BJ:346:CYS:SG   | 3:BJ:352:LEU:CD1  | 2.99        | 0.50     |
| 1:DA:109:MET:O    | 1:DA:113:ILE:HG12 | 2.11        | 0.50     |
| 3:AQ:401:LEU:HD12 | 3:AQ:402:ARG:H    | 1.76        | 0.50     |
| 7:AG:717:LEU:HD13 | 7:AG:770:LEU:HD23 | 1.92        | 0.50     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AP:295:VAL:HG12 | 2:AP:295:VAL:O    | 2.11        | 0.50     |
| 3:AQ:333:THR:CG2  | 3:AQ:359:PHE:HZ   | 2.23        | 0.50     |
| 1:CO:137:HIS:O    | 1:CO:138:MET:HB2  | 2.10        | 0.50     |
| 3:AJ:348:ASN:ND2  | 8:AX:840:A:O3'    | 2.44        | 0.50     |
| 5:CL:677:ILE:HA   | 6:CM:572:ILE:O    | 2.12        | 0.50     |
| 7:AN:737:PHE:O    | 7:AN:738:MET:HB2  | 2.10        | 0.50     |
| 5:DE:634:TRP:CH2  | 5:DE:664:ILE:HD12 | 2.46        | 0.50     |
| 3:BQ:410:LEU:HB3  | 6:BT:559:LEU:CD2  | 2.40        | 0.50     |
| 3:CC:359:PHE:CB   | 3:CC:365:MET:HG2  | 2.17        | 0.50     |
| 3:CC:407:ILE:HD12 | 6:CF:525:TRP:CZ2  | 2.47        | 0.50     |
| 2:AI:211:SER:HA   | 2:AI:229:ILE:HB   | 1.92        | 0.50     |
| 3:BC:412:ASN:CB   | 3:BC:413:PRO:CD   | 2.89        | 0.50     |
| 1:AA:112:HIS:C    | 1:AA:115:TYR:HD2  | 2.15        | 0.50     |
| 3:BC:390:VAL:O    | 3:BC:391:ASN:CG   | 2.49        | 0.50     |
| 8:CY:812:U:C2'    | 8:CY:813:G:O5'    | 2.59        | 0.50     |
| 8:AY:852:U:O5'    | 8:AY:852:U:H6     | 1.94        | 0.50     |
| 1:AO:136:LYS:HE2  | 8:AY:801:G:O2'    | 2.10        | 0.50     |
| 7:CG:709:LEU:HD22 | 7:CG:734:PHE:CD2  | 2.43        | 0.50     |
| 6:AT:530:LYS:HD2  | 6:AT:576:GLU:CD   | 2.31        | 0.50     |
| 5:AE:663:GLU:O    | 5:AE:670:SER:HA   | 2.11        | 0.50     |
| 3:DJ:322:GLU:HG2  | 3:DJ:322:GLU:O    | 2.10        | 0.50     |
| 6:CF:535:SER:HB2  | 6:CF:543:GLN:OE1  | 2.10        | 0.50     |
| 1:BH:117:MET:HG2  | 1:BH:182:VAL:HG22 | 1.94        | 0.50     |
| 1:BA:182:VAL:HB   | 2:BB:256:GLU:OE2  | 2.11        | 0.50     |
| 4:BR:48:VAL:CG1   | 4:BR:56:ALA:HB3   | 2.42        | 0.50     |
| 3:CJ:389:PRO:O    | 3:CJ:390:VAL:HG13 | 2.11        | 0.50     |
| 3:CQ:390:VAL:CG1  | 3:CQ:391:ASN:N    | 2.72        | 0.50     |
| 3:DQ:343:LEU:CG   | 3:DQ:410:LEU:HD12 | 2.41        | 0.50     |
| 7:BN:705:HIS:HA   | 7:BN:708:GLU:OE2  | 2.11        | 0.50     |
| 1:BH:120:ILE:O    | 1:BH:177:LEU:HD12 | 2.11        | 0.50     |
| 3:CC:344:ILE:O    | 3:CC:351:LYS:HA   | 2.11        | 0.50     |
| 5:DS:635:LEU:HD22 | 5:DS:679:LEU:HD13 | 1.93        | 0.50     |
| 5:BE:651:ASP:OD2  | 5:BE:653:TYR:HD1  | 1.94        | 0.50     |
| 3:AC:391:ASN:O    | 6:AT:554:ALA:CB   | 2.59        | 0.50     |
| 7:DN:750:THR:CG2  | 7:DN:750:THR:O    | 2.51        | 0.50     |
| 6:BT:567:ASN:OD1  | 6:BT:568:ASN:CG   | 2.50        | 0.50     |
| 3:DQ:407:ILE:HA   | 6:DT:568:ASN:ND2  | 2.26        | 0.50     |
| 7:AU:721:LEU:C    | 7:AU:768:ILE:HD11 | 2.30        | 0.50     |
| 8:DX:849:G:C2     | 8:DX:857:U:C2     | 3.00        | 0.50     |
| 1:AO:154:LYS:HD2  | 8:AY:849:G:C5'    | 2.40        | 0.50     |
| 5:AL:635:LEU:HD12 | 5:AL:687:LEU:HD23 | 1.92        | 0.50     |
| 5:AL:635:LEU:CD2  | 5:AL:679:LEU:CD1  | 2.89        | 0.50     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:DD:73:LEU:HD12  | 4:DD:80:ALA:HB1   | 1.93        | 0.50     |
| 6:CT:550:TYR:CE2  | 6:CT:555:LEU:HD13 | 2.46        | 0.50     |
| 6:BT:528:GLU:O    | 6:BT:550:TYR:N    | 2.37        | 0.50     |
| 5:AS:615:VAL:C    | 5:AS:617:PRO:HD3  | 2.31        | 0.50     |
| 4:AR:39:MET:HB2   | 4:AR:65:GLY:HA3   | 1.93        | 0.50     |
| 4:DR:7:ILE:O      | 4:DR:11:HIS:HD2   | 1.94        | 0.50     |
| 3:BC:325:ASN:ND2  | 8:BV:829:C:OP2    | 2.44        | 0.50     |
| 4:CR:64:ARG:NE    | 4:CR:66:SER:OG    | 2.44        | 0.50     |
| 3:CQ:403:GLY:O    | 3:CQ:406:VAL:HB   | 2.12        | 0.50     |
| 6:CT:539:TYR:O    | 6:CT:566:CYS:CB   | 2.59        | 0.50     |
| 5:CE:673:GLN:O    | 5:CE:674:LEU:HD23 | 2.10        | 0.50     |
| 8:AV:850:G:O4'    | 8:CX:816:A:C2     | 2.64        | 0.50     |
| 3:BJ:401:LEU:HD21 | 3:BJ:406:VAL:HG22 | 1.92        | 0.50     |
| 5:BL:618:ILE:N    | 7:BN:709:LEU:HD12 | 2.21        | 0.50     |
| 6:AF:519:VAL:HG21 | 6:AF:572:ILE:CD1  | 2.26        | 0.50     |
| 7:AU:741:VAL:HG13 | 7:AU:760:VAL:O    | 2.11        | 0.50     |
| 3:AC:347:ARG:HD2  | 3:AC:405:SER:HB3  | 1.93        | 0.50     |
| 7:BU:709:LEU:HD23 | 7:BU:713:MET:HB2  | 1.93        | 0.50     |
| 3:CC:402:ARG:NH2  | 8:CV:836:U:H1'    | 2.26        | 0.50     |
| 2:CB:269:ILE:HD11 | 3:CC:396:ILE:CD1  | 2.41        | 0.50     |
| 3:DC:332:LEU:CD1  | 3:DC:359:PHE:CE1  | 2.89        | 0.50     |
| 7:DN:717:LEU:HD12 | 7:DN:731:LEU:CB   | 2.42        | 0.50     |
| 2:DI:274:LEU:HD22 | 3:DJ:398:LYS:HZ2  | 1.76        | 0.50     |
| 7:CN:745:CYS:SG   | 7:CN:760:VAL:CG1  | 3.00        | 0.50     |
| 5:BL:674:LEU:HB2  | 5:BL:677:ILE:HD11 | 1.93        | 0.50     |
| 3:CC:417:GLY:C    | 3:CC:418:LYS:HG3  | 2.32        | 0.50     |
| 1:AH:143:CYS:HB3  | 4:AK:84:LYS:NZ    | 2.26        | 0.50     |
| 3:CQ:341:GLN:OE1  | 3:CQ:353:LEU:HD11 | 2.12        | 0.50     |
| 7:BG:705:HIS:ND1  | 7:BG:736:PRO:HA   | 2.26        | 0.50     |
| 2:BI:244:LYS:CG   | 2:BI:254:GLN:HE22 | 2.23        | 0.50     |
| 6:DT:530:LYS:HD2  | 6:DT:550:TYR:HE2  | 1.76        | 0.50     |
| 7:AG:705:HIS:CD2  | 7:AG:736:PRO:HA   | 2.46        | 0.50     |
| 5:AL:620:LEU:HD11 | 7:AN:735:ASP:HB2  | 1.92        | 0.50     |
| 4:DD:85:SER:O     | 4:DD:89:LYS:HG2   | 2.11        | 0.50     |
| 3:CJ:360:ASP:OD1  | 3:CJ:364:ASN:N    | 2.44        | 0.50     |
| 3:BJ:365:MET:CE   | 3:BJ:401:LEU:HD23 | 2.42        | 0.50     |
| 5:AS:688:GLN:CG   | 7:AU:760:VAL:HG23 | 2.41        | 0.50     |
| 3:AC:347:ARG:C    | 6:AF:525:TRP:CZ2  | 2.85        | 0.50     |
| 2:AB:263:ASN:CB   | 8:AV:835:U:O2'    | 2.58        | 0.50     |
| 7:BU:732:ARG:CG   | 7:BU:743:ASP:HB2  | 2.41        | 0.50     |
| 2:DB:238:THR:HG21 | 2:DB:240:LEU:HD21 | 1.92        | 0.50     |
| 7:CU:719:LEU:HG   | 7:CU:770:LEU:HG   | 1.93        | 0.50     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:DT:511:LEU:CD1  | 6:DT:540:MET:SD   | 2.99        | 0.50     |
| 7:CN:763:ARG:HE   | 7:CN:765:ASN:HB3  | 1.75        | 0.50     |
| 4:CK:38:ASN:O     | 4:CK:39:MET:HB2   | 2.12        | 0.50     |
| 4:AK:46:ILE:HG21  | 4:AK:61:VAL:CG2   | 2.42        | 0.50     |
| 2:AB:210:LEU:O    | 2:AB:229:ILE:CD1  | 2.59        | 0.50     |
| 3:DQ:331:VAL:HG11 | 6:DT:543:GLN:HE21 | 1.75        | 0.50     |
| 3:AC:367:LEU:CB   | 3:AC:370:VAL:HG21 | 2.41        | 0.50     |
| 2:BI:236:MET:O    | 2:BI:262:GLY:CA   | 2.60        | 0.50     |
| 5:CL:665:HIS:HD2  | 5:CL:667:LYS:CB   | 2.25        | 0.50     |
| 1:DO:137:HIS:NE2  | 8:DY:835:U:C5'    | 2.75        | 0.50     |
| 7:CG:705:HIS:N    | 7:CG:706:PRO:CD   | 2.74        | 0.50     |
| 5:BL:632:GLN:NE2  | 5:BL:644:GLU:HG2  | 2.26        | 0.50     |
| 8:CY:862:A:N3     | 8:CY:863:G:C8     | 2.80        | 0.50     |
| 1:BA:137:HIS:CD2  | 8:BV:834:U:C6     | 2.99        | 0.50     |
| 4:BR:47:THR:CB    | 4:BR:57:GLN:OE1   | 2.60        | 0.50     |
| 4:AD:38:ASN:O     | 4:AD:39:MET:HB2   | 2.12        | 0.50     |
| 2:CI:224:GLN:HG2  | 2:CI:246:THR:HB   | 1.93        | 0.50     |
| 1:BO:152:LYS:HE3  | 8:DY:813:G:H5''   | 1.94        | 0.50     |
| 8:AX:818:G:H8     | 8:AX:818:G:H5''   | 1.76        | 0.50     |
| 2:CB:216:THR:HG21 | 2:CB:224:GLN:NE2  | 2.27        | 0.50     |
| 1:BO:123:ASP:HB2  | 1:BO:125:ARG:HG3  | 1.93        | 0.50     |
| 3:DJ:410:LEU:HD23 | 6:DM:562:VAL:HG22 | 1.93        | 0.50     |
| 6:DM:539:TYR:CE2  | 8:DX:837:G:N1     | 2.80        | 0.50     |
| 7:BG:744:GLU:N    | 7:BG:758:GLY:O    | 2.42        | 0.50     |
| 6:AM:530:LYS:HZ2  | 6:AM:530:LYS:HB3  | 1.76        | 0.50     |
| 5:CE:662:GLU:HA   | 5:CE:673:GLN:HA   | 1.93        | 0.50     |
| 6:CF:523:LEU:HD22 | 6:CF:569:VAL:HA   | 1.94        | 0.50     |
| 6:CF:521:VAL:CG1  | 6:CF:569:VAL:HG13 | 2.42        | 0.50     |
| 5:BS:677:ILE:CG2  | 5:BS:679:LEU:CD2  | 2.89        | 0.50     |
| 2:CB:265:ILE:HD13 | 2:CB:268:PHE:HZ   | 1.76        | 0.50     |
| 2:CB:265:ILE:HD13 | 2:CB:268:PHE:CZ   | 2.46        | 0.50     |
| 4:CK:62:TYR:O     | 7:CN:769:MET:HA   | 2.11        | 0.50     |
| 1:CH:171:LEU:C    | 1:CH:171:LEU:HD23 | 2.32        | 0.50     |
| 1:BH:179:SER:HA   | 2:BI:259:SER:O    | 2.12        | 0.50     |
| 5:DL:688:GLN:NE2  | 7:DN:757:ILE:HG13 | 2.26        | 0.50     |
| 8:AX:866:U:H6     | 8:AX:866:U:O5'    | 1.95        | 0.50     |
| 8:BY:862:A:O2'    | 8:BY:863:G:H5'    | 2.10        | 0.50     |
| 5:DE:686:LEU:HD22 | 7:DG:762:ILE:HG12 | 1.92        | 0.50     |
| 6:AM:508:LYS:HB2  | 6:AM:509:PRO:HD3  | 1.92        | 0.50     |
| 8:AY:858:A:O2'    | 8:AY:859:A:N7     | 2.45        | 0.50     |
| 1:CA:114:ASP:O    | 1:CA:187:PRO:CD   | 2.58        | 0.50     |
| 3:DQ:373:MET:O    | 3:DQ:373:MET:HG3  | 2.11        | 0.50     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:CU:712:PHE:HD2  | 7:CU:717:LEU:HD21 | 1.77        | 0.50     |
| 3:CC:324:PHE:HE1  | 8:CV:828:G:OP2    | 1.94        | 0.50     |
| 3:DJ:363:CYS:HB2  | 6:DM:565:ARG:NH1  | 2.26        | 0.50     |
| 3:CQ:391:ASN:CG   | 3:CQ:392:LYS:N    | 2.64        | 0.50     |
| 5:BL:680:LYS:HB3  | 6:BM:570:LEU:O    | 2.10        | 0.50     |
| 5:BS:656:LEU:CD1  | 5:BS:684:ILE:HD11 | 2.42        | 0.50     |
| 6:AF:539:TYR:CD2  | 6:AF:539:TYR:O    | 2.65        | 0.50     |
| 6:AF:539:TYR:HD2  | 6:AF:541:ASN:OD1  | 1.95        | 0.50     |
| 8:AV:840:A:C2     | 8:AV:841:G:C1'    | 2.94        | 0.50     |
| 3:CC:363:CYS:O    | 3:CC:363:CYS:SG   | 2.70        | 0.50     |
| 2:DB:287:VAL:O    | 2:DB:290:LYS:CG   | 2.58        | 0.50     |
| 8:AY:839:C:C4'    | 8:AY:839:C:C6     | 2.95        | 0.50     |
| 3:AJ:332:LEU:HD13 | 3:AJ:359:PHE:CD1  | 2.47        | 0.50     |
| 6:BT:526:GLY:CA   | 8:BY:868:G:OP1    | 2.55        | 0.50     |
| 1:AH:181:THR:CA   | 2:AI:257:THR:O    | 2.54        | 0.50     |
| 5:AE:658:LEU:N    | 5:AE:658:LEU:HD23 | 2.27        | 0.50     |
| 6:CT:582:GLY:HA2  | 6:CT:585:ARG:HE   | 1.77        | 0.50     |
| 7:AU:732:ARG:CG   | 7:AU:743:ASP:HB2  | 2.42        | 0.50     |
| 7:BG:709:LEU:HD11 | 7:BG:713:MET:SD   | 2.52        | 0.50     |
| 1:AA:132:LYS:HG2  | 1:AA:143:CYS:SG   | 2.52        | 0.50     |
| 2:AB:292:ARG:NH2  | 6:AT:586:GLU:OXT  | 2.44        | 0.50     |
| 1:BA:115:TYR:CE1  | 1:BA:186:PRO:HG3  | 2.46        | 0.50     |
| 1:AH:195:VAL:HG12 | 1:AH:195:VAL:OXT  | 2.12        | 0.50     |
| 2:CI:261:ARG:NH1  | 2:CI:263:ASN:HB3  | 2.26        | 0.50     |
| 7:AN:714:ASP:OD1  | 7:AN:732:ARG:NH1  | 2.43        | 0.50     |
| 2:AB:201:MET:HE2  | 2:AB:282:ASP:OD2  | 2.12        | 0.50     |
| 3:DJ:332:LEU:HB2  | 3:DJ:359:PHE:CD1  | 2.46        | 0.50     |
| 1:CO:137:HIS:NE2  | 8:CY:834:U:C2'    | 2.75        | 0.50     |
| 1:CO:173:ARG:CZ   | 8:CY:834:U:O2     | 2.60        | 0.50     |
| 5:BE:634:TRP:N    | 5:BE:688:GLN:O    | 2.38        | 0.50     |
| 5:BL:686:LEU:HD22 | 7:BN:762:ILE:HG12 | 1.93        | 0.50     |
| 6:CT:539:TYR:CE2  | 8:CY:837:G:N1     | 2.79        | 0.50     |
| 3:DC:345:ASN:HD22 | 3:DC:408:VAL:CB   | 2.23        | 0.50     |
| 3:DC:351:LYS:C    | 3:DC:352:LEU:HD23 | 2.31        | 0.50     |
| 7:DU:737:PHE:O    | 7:DU:738:MET:HB2  | 2.11        | 0.50     |
| 6:AF:567:ASN:O    | 8:AV:838:A:N6     | 2.45        | 0.50     |
| 3:CC:345:ASN:O    | 3:CC:407:ILE:HB   | 2.11        | 0.50     |
| 2:DB:265:ILE:CG2  | 2:DB:266:ARG:N    | 2.74        | 0.50     |
| 2:DB:265:ILE:O    | 3:DC:402:ARG:HG2  | 2.12        | 0.50     |
| 5:DS:674:LEU:CB   | 5:DS:677:ILE:HD11 | 2.42        | 0.50     |
| 3:BC:366:VAL:HG22 | 3:BC:400:PHE:CD2  | 2.47        | 0.50     |
| 6:AT:526:GLY:HA3  | 8:AY:868:G:P      | 2.52        | 0.50     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:AO:120:ILE:HD12 | 1:AO:179:SER:HB2  | 1.93        | 0.50     |
| 8:CX:847:A:C5     | 8:CX:849:G:C8     | 3.00        | 0.50     |
| 5:BL:644:GLU:HB3  | 5:BL:662:GLU:HB2  | 1.93        | 0.50     |
| 8:BV:809:G:H2'    | 8:BV:810:A:C8     | 2.47        | 0.50     |
| 4:BR:47:THR:CG2   | 4:BR:57:GLN:OE1   | 2.58        | 0.50     |
| 4:DK:64:ARG:NH1   | 7:DN:738:MET:HG3  | 2.26        | 0.50     |
| 4:AD:12:GLU:HG3   | 4:AD:79:ASN:ND2   | 2.27        | 0.50     |
| 2:DI:216:THR:HA   | 2:DI:225:VAL:O    | 2.12        | 0.50     |
| 7:DG:705:HIS:ND1  | 7:DG:736:PRO:HA   | 2.27        | 0.50     |
| 4:AK:23:ASN:OD1   | 4:AK:24:THR:N     | 2.45        | 0.50     |
| 8:DV:852:U:O4     | 8:DV:853:A:N6     | 2.45        | 0.50     |
| 6:BM:545:ALA:O    | 6:BM:546:ASN:C    | 2.49        | 0.50     |
| 3:DJ:332:LEU:C    | 3:DJ:359:PHE:CE1  | 2.85        | 0.50     |
| 6:DM:567:ASN:OD1  | 6:DM:568:ASN:N    | 2.45        | 0.50     |
| 6:AT:571:TYR:CE1  | 6:AT:573:ARG:HG3  | 2.47        | 0.50     |
| 3:CQ:350:LYS:HG2  | 3:CQ:374:TRP:CB   | 2.42        | 0.50     |
| 1:CH:130:THR:HB   | 1:CH:143:CYS:HB2  | 1.92        | 0.50     |
| 3:AC:347:ARG:HB2  | 8:AV:839:C:O2'    | 2.12        | 0.50     |
| 2:AI:210:LEU:O    | 2:AI:229:ILE:HD12 | 2.11        | 0.50     |
| 5:DS:658:LEU:CD1  | 5:DS:679:LEU:HD11 | 2.41        | 0.50     |
| 3:DQ:370:VAL:HG11 | 3:DQ:399:MET:SD   | 2.52        | 0.50     |
| 3:BC:357:LYS:HB2  | 3:BC:368:GLU:OE1  | 2.12        | 0.50     |
| 1:CA:118:ARG:O    | 1:CA:181:THR:N    | 2.42        | 0.50     |
| 3:DQ:328:PRO:HD3  | 6:DT:535:SER:HB2  | 1.94        | 0.50     |
| 1:AH:156:SER:HA   | 8:AX:849:G:H4'    | 1.94        | 0.50     |
| 1:AO:118:ARG:HE   | 1:AO:126:ILE:HG21 | 1.76        | 0.50     |
| 8:BY:838:A:O3'    | 8:BY:839:C:O4'    | 2.29        | 0.50     |
| 7:DU:745:CYS:O    | 7:DU:756:ASN:HB2  | 2.12        | 0.50     |
| 4:AD:70:PHE:O     | 4:AD:71:LEU:HD23  | 2.12        | 0.50     |
| 1:AH:154:LYS:CB   | 8:CV:813:G:C5'    | 2.90        | 0.50     |
| 8:BV:863:G:N3     | 8:BV:864:A:C8     | 2.80        | 0.50     |
| 8:AY:811:C:C2     | 8:AY:812:U:C6     | 3.00        | 0.50     |
| 6:BF:575:VAL:HG22 | 6:BF:576:GLU:H    | 1.77        | 0.50     |
| 5:BL:622:PHE:O    | 5:BL:623:ARG:C    | 2.49        | 0.50     |
| 4:BD:22:THR:OG1   | 4:BD:26:GLU:HB2   | 2.12        | 0.50     |
| 4:CK:30:GLY:C     | 4:CK:43:MET:CE    | 2.80        | 0.50     |
| 6:CT:546:ASN:N    | 6:CT:560:GLY:O    | 2.44        | 0.50     |
| 3:CC:342:VAL:HG21 | 3:CC:356:VAL:CG2  | 2.42        | 0.49     |
| 3:DJ:360:ASP:OD1  | 3:DJ:364:ASN:N    | 2.43        | 0.49     |
| 3:CQ:346:CYS:N    | 3:CQ:350:LYS:O    | 2.33        | 0.49     |
| 5:DE:624:TYR:CE2  | 7:DG:761:VAL:CG2  | 2.94        | 0.49     |
| 8:CV:847:A:O2'    | 8:CV:848:U:H6     | 1.94        | 0.49     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BS:679:LEU:HD23 | 6:BT:571:TYR:HB3  | 1.94        | 0.49     |
| 5:CS:635:LEU:CD1  | 5:CS:687:LEU:HD21 | 2.41        | 0.49     |
| 1:DO:171:LEU:HD23 | 1:DO:171:LEU:C    | 2.32        | 0.49     |
| 2:CI:232:VAL:HG22 | 2:CI:238:THR:OG1  | 2.12        | 0.49     |
| 2:BI:286:LYS:O    | 2:BI:290:LYS:HB3  | 2.11        | 0.49     |
| 2:AB:212:HIS:ND1  | 2:BB:212:HIS:N    | 2.60        | 0.49     |
| 2:DI:250:ARG:HH21 | 8:DX:859:A:H4'    | 1.76        | 0.49     |
| 1:AO:128:ILE:HG12 | 1:AO:148:PHE:CE1  | 2.46        | 0.49     |
| 6:BF:530:LYS:HB2  | 6:BF:550:TYR:CE2  | 2.47        | 0.49     |
| 5:CL:668:THR:CG2  | 5:CL:668:THR:O    | 2.60        | 0.49     |
| 1:DH:113:ILE:O    | 1:DH:114:ASP:HB2  | 2.11        | 0.49     |
| 1:BA:115:TYR:CZ   | 1:BA:186:PRO:HG3  | 2.46        | 0.49     |
| 7:AN:750:THR:OG1  | 7:AN:754:GLN:NE2  | 2.45        | 0.49     |
| 5:AS:657:VAL:O    | 5:AS:658:LEU:HD23 | 2.11        | 0.49     |
| 6:CM:528:GLU:O    | 6:CM:550:TYR:N    | 2.44        | 0.49     |
| 2:AP:280:LEU:HD22 | 2:AP:286:LYS:CE   | 2.41        | 0.49     |
| 2:CP:226:HIS:O    | 2:CP:243:VAL:HA   | 2.12        | 0.49     |
| 3:AJ:348:ASN:ND2  | 8:AX:840:A:C3'    | 2.75        | 0.49     |
| 3:CQ:407:ILE:O    | 3:CQ:408:VAL:CG2  | 2.60        | 0.49     |
| 6:DF:539:TYR:O    | 6:DF:540:MET:HB2  | 2.12        | 0.49     |
| 6:DF:539:TYR:HD2  | 6:DF:566:CYS:HB3  | 1.75        | 0.49     |
| 2:DP:280:LEU:CD2  | 2:DP:286:LYS:HE2  | 2.22        | 0.49     |
| 2:DP:292:ARG:HH12 | 3:DQ:355:ARG:HG3  | 1.77        | 0.49     |
| 3:BQ:357:LYS:HB3  | 3:BQ:366:VAL:O    | 2.12        | 0.49     |
| 6:BT:558:HIS:O    | 6:BT:559:LEU:HD12 | 2.12        | 0.49     |
| 5:AS:621:ILE:CG2  | 7:AU:741:VAL:HG21 | 2.42        | 0.49     |
| 1:DA:181:THR:OG1  | 2:DB:258:LEU:HD13 | 2.12        | 0.49     |
| 2:DB:276:LEU:HD11 | 3:DC:398:LYS:HZ2  | 1.75        | 0.49     |
| 3:BC:342:VAL:HG11 | 3:BC:409:VAL:HG13 | 1.92        | 0.49     |
| 4:AK:46:ILE:CD1   | 4:AK:58:LEU:HB2   | 2.39        | 0.49     |
| 4:AK:46:ILE:HD11  | 4:AK:58:LEU:HD12  | 1.94        | 0.49     |
| 3:DQ:331:VAL:CB   | 6:DT:543:GLN:HE22 | 2.25        | 0.49     |
| 5:CS:643:ILE:HG22 | 5:CS:644:GLU:N    | 2.27        | 0.49     |
| 8:AX:859:A:O2'    | 8:AX:860:G:H5'    | 2.12        | 0.49     |
| 1:AH:157:LYS:HG2  | 8:AX:849:G:OP2    | 2.12        | 0.49     |
| 2:AP:260:ILE:HG22 | 2:AP:261:ARG:O    | 2.13        | 0.49     |
| 3:DC:342:VAL:HG23 | 3:DC:356:VAL:HG23 | 1.94        | 0.49     |
| 2:CP:219:LEU:HD12 | 2:CP:219:LEU:N    | 2.26        | 0.49     |
| 1:BO:136:LYS:HD2  | 8:BY:801:G:O2'    | 2.12        | 0.49     |
| 3:BQ:355:ARG:O    | 3:BQ:367:LEU:HD22 | 2.12        | 0.49     |
| 4:CR:13:ALA:C     | 4:CR:16:HIS:HD2   | 2.15        | 0.49     |
| 4:DD:87:LYS:O     | 4:DD:91:GLN:HG2   | 2.12        | 0.49     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AP:286:LYS:CE   | 3:AQ:357:LYS:HZ3  | 2.25        | 0.49     |
| 2:CI:276:LEU:HB2  | 2:CI:290:LYS:HB2  | 1.94        | 0.49     |
| 3:AQ:347:ARG:N    | 3:AQ:405:SER:O    | 2.45        | 0.49     |
| 5:BL:653:TYR:O    | 5:BL:654:MET:HB2  | 2.13        | 0.49     |
| 7:AN:759:MET:HE1  | 5:AS:630:ARG:HH12 | 1.78        | 0.49     |
| 6:CM:565:ARG:HB3  | 8:CX:837:G:N2     | 2.26        | 0.49     |
| 1:AA:159:ALA:CA   | 8:AV:849:G:OP2    | 2.58        | 0.49     |
| 3:BJ:347:ARG:O    | 6:BM:525:TRP:CH2  | 2.65        | 0.49     |
| 3:AC:406:VAL:HG12 | 6:AF:565:ARG:HG3  | 1.94        | 0.49     |
| 6:AF:539:TYR:CD1  | 8:AV:837:G:O6     | 2.65        | 0.49     |
| 7:BN:728:GLN:O    | 7:BN:745:CYS:HA   | 2.12        | 0.49     |
| 7:BU:770:LEU:N    | 7:BU:770:LEU:HD12 | 2.26        | 0.49     |
| 2:CB:293:GLU:CB   | 3:CC:368:GLU:HB3  | 2.42        | 0.49     |
| 6:CF:524:LYS:HB2  | 8:CV:838:A:H61    | 1.77        | 0.49     |
| 2:AI:276:LEU:HB2  | 2:AI:290:LYS:HD2  | 1.95        | 0.49     |
| 2:DB:276:LEU:HB3  | 3:DC:357:LYS:HE2  | 1.93        | 0.49     |
| 2:DB:277:ASP:OD1  | 2:DB:278:THR:N    | 2.39        | 0.49     |
| 7:AN:772:ALA:O    | 7:AN:773:LEU:HB3  | 2.12        | 0.49     |
| 5:DE:679:LEU:HD23 | 6:DF:571:TYR:CB   | 2.42        | 0.49     |
| 7:CU:729:GLY:HA3  | 7:CU:742:ILE:HG21 | 1.93        | 0.49     |
| 2:DI:247:LEU:HD12 | 2:DI:248:LYS:N    | 2.27        | 0.49     |
| 4:DK:48:VAL:HG13  | 4:DK:48:VAL:O     | 2.11        | 0.49     |
| 7:CG:706:PRO:N    | 7:CG:707:PRO:CD   | 2.75        | 0.49     |
| 7:CG:706:PRO:N    | 7:CG:707:PRO:HD2  | 2.27        | 0.49     |
| 4:CK:33:ILE:HD11  | 4:CK:44:SER:OG    | 2.12        | 0.49     |
| 8:DX:866:U:O2'    | 8:DX:867:G:H5''   | 2.12        | 0.49     |
| 3:BJ:361:ARG:NE   | 8:BX:830:A:H5'    | 2.27        | 0.49     |
| 1:BH:195:VAL:HG21 | 4:BK:91:GLN:O     | 2.13        | 0.49     |
| 8:AY:843:C:H2'    | 8:AY:844:U:H6     | 1.77        | 0.49     |
| 1:BO:115:TYR:CE2  | 1:BO:185:PRO:CG   | 2.93        | 0.49     |
| 3:BC:370:VAL:HB   | 3:BC:399:MET:CE   | 2.42        | 0.49     |
| 8:DV:811:C:H2'    | 8:DV:812:U:O4'    | 2.12        | 0.49     |
| 7:AN:744:GLU:N    | 7:AN:758:GLY:O    | 2.33        | 0.49     |
| 5:AE:654:MET:SD   | 7:AG:763:ARG:HD2  | 2.52        | 0.49     |
| 5:AE:651:ASP:HB3  | 6:AF:507:PRO:HG2  | 1.93        | 0.49     |
| 1:BO:155:ASN:HD21 | 8:DY:816:A:N6     | 1.98        | 0.49     |
| 1:DH:138:MET:HG2  | 8:DX:835:U:C5     | 2.48        | 0.49     |
| 8:AV:847:A:N6     | 8:CX:814:A:H61    | 2.10        | 0.49     |
| 7:BN:741:VAL:CG1  | 7:BN:759:MET:SD   | 3.00        | 0.49     |
| 2:CB:203:LEU:CD2  | 3:CC:366:VAL:HG23 | 2.34        | 0.49     |
| 2:AI:276:LEU:CB   | 3:AJ:357:LYS:HE3  | 2.43        | 0.49     |
| 5:DS:656:LEU:CD1  | 5:DS:687:LEU:CD1  | 2.85        | 0.49     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:DR:72:ILE:O     | 4:DR:72:ILE:HG22  | 2.11        | 0.49     |
| 3:CJ:401:LEU:HD12 | 3:CJ:402:ARG:N    | 2.25        | 0.49     |
| 2:AI:266:ARG:O    | 3:AJ:402:ARG:HB2  | 2.11        | 0.49     |
| 5:CE:613:VAL:HG11 | 5:CE:616:GLN:HE22 | 1.74        | 0.49     |
| 3:BJ:342:VAL:HG11 | 3:BJ:409:VAL:CG1  | 2.43        | 0.49     |
| 8:AY:841:G:N2     | 8:AY:842:U:C2     | 2.81        | 0.49     |
| 6:AT:512:ASN:OD1  | 6:AT:512:ASN:C    | 2.51        | 0.49     |
| 4:DD:38:ASN:O     | 4:DD:39:MET:HB2   | 2.12        | 0.49     |
| 1:CO:132:LYS:O    | 4:CR:84:LYS:HE2   | 2.12        | 0.49     |
| 3:BJ:334:GLN:CG   | 3:BJ:417:GLY:HA3  | 2.42        | 0.49     |
| 3:DJ:368:GLU:N    | 3:DJ:368:GLU:OE1  | 2.45        | 0.49     |
| 5:CS:639:VAL:CG2  | 6:CT:524:LYS:HE3  | 2.42        | 0.49     |
| 6:CM:523:LEU:O    | 6:CM:570:LEU:HD12 | 2.13        | 0.49     |
| 8:AV:859:A:C6     | 8:CX:814:A:C6     | 3.00        | 0.49     |
| 2:AB:249:ASN:O    | 8:CX:814:A:H4'    | 2.12        | 0.49     |
| 3:BJ:402:ARG:CZ   | 8:BX:836:U:H1'    | 2.43        | 0.49     |
| 3:BQ:331:VAL:CG1  | 6:BT:543:GLN:NE2  | 2.58        | 0.49     |
| 7:BU:705:HIS:HB2  | 7:BU:734:PHE:HE2  | 1.78        | 0.49     |
| 2:AI:206:PHE:CZ   | 2:AI:210:LEU:CD1  | 2.85        | 0.49     |
| 2:AI:279:LEU:O    | 2:AI:281:VAL:HG23 | 2.13        | 0.49     |
| 2:AI:276:LEU:CD2  | 3:AJ:357:LYS:HD3  | 2.39        | 0.49     |
| 2:BB:274:LEU:HD21 | 2:BB:291:LYS:N    | 2.28        | 0.49     |
| 2:DI:267:TYR:HB3  | 3:DJ:401:LEU:HD13 | 1.95        | 0.49     |
| 2:AB:283:VAL:CG1  | 2:AB:286:LYS:CB   | 2.82        | 0.49     |
| 7:AU:712:PHE:HB3  | 7:AU:717:LEU:CD1  | 2.32        | 0.49     |
| 3:AJ:332:LEU:HB2  | 3:AJ:359:PHE:CE1  | 2.47        | 0.49     |
| 1:DO:118:ARG:HD2  | 1:DO:181:THR:HG23 | 1.95        | 0.49     |
| 1:CA:121:LEU:CD2  | 1:CA:172:LEU:HD21 | 2.38        | 0.49     |
| 3:AJ:327:GLY:N    | 3:AJ:330:SER:HB2  | 2.28        | 0.49     |
| 6:DF:524:LYS:N    | 6:DF:570:LEU:HG   | 2.27        | 0.49     |
| 1:CO:136:LYS:HD2  | 8:CY:801:G:C2'    | 2.42        | 0.49     |
| 8:AY:859:A:N7     | 8:AY:860:G:N7     | 2.61        | 0.49     |
| 7:DN:709:LEU:HD12 | 7:DN:734:PHE:HB3  | 1.94        | 0.49     |
| 6:AF:555:LEU:CD2  | 3:AQ:353:LEU:HD22 | 2.41        | 0.49     |
| 5:AL:633:VAL:CG2  | 5:AL:647:ILE:HG22 | 2.43        | 0.49     |
| 1:AH:160:GLU:HG3  | 8:AX:848:U:O2'    | 2.12        | 0.49     |
| 8:BV:804:G:O5'    | 8:BV:804:G:H8     | 1.94        | 0.49     |
| 3:DJ:377:VAL:HB   | 3:DJ:378:PRO:CD   | 2.43        | 0.49     |
| 1:CO:118:ARG:HG3  | 1:CO:126:ILE:CG2  | 2.43        | 0.49     |
| 2:CP:263:ASN:O    | 2:CP:263:ASN:OD1  | 2.29        | 0.49     |
| 1:AH:173:ARG:HD2  | 4:AK:68:ILE:O     | 2.13        | 0.49     |
| 3:CJ:410:LEU:HD22 | 6:CM:562:VAL:HG22 | 1.90        | 0.49     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BQ:352:LEU:HD12 | 3:BQ:401:LEU:HD22 | 1.94        | 0.49     |
| 3:CC:401:LEU:HD21 | 3:CC:406:VAL:HG23 | 1.94        | 0.49     |
| 3:CC:363:CYS:CB   | 6:CF:565:ARG:NH1  | 2.75        | 0.49     |
| 5:DS:678:MET:HE1  | 6:DT:511:LEU:HD23 | 1.94        | 0.49     |
| 5:CS:674:LEU:HD13 | 6:CT:573:ARG:HB3  | 1.93        | 0.49     |
| 8:AV:801:G:HO2'   | 8:AV:802:C:P      | 2.34        | 0.49     |
| 5:DL:621:ILE:HD11 | 7:DN:741:VAL:HG23 | 1.95        | 0.49     |
| 2:AB:212:HIS:HB2  | 2:BB:211:SER:O    | 2.12        | 0.49     |
| 3:BJ:332:LEU:HB3  | 3:BJ:359:PHE:CG   | 2.48        | 0.49     |
| 2:BP:223:THR:HG21 | 2:BP:247:LEU:HD23 | 1.95        | 0.49     |
| 2:CB:219:LEU:HD12 | 2:CB:223:THR:CB   | 2.39        | 0.49     |
| 1:DO:173:ARG:HH21 | 8:DY:834:U:H1'    | 1.77        | 0.49     |
| 7:BN:718:SER:HB3  | 7:BN:771:GLU:HB2  | 1.94        | 0.49     |
| 6:AM:504:PRO:O    | 6:AM:509:PRO:HG3  | 2.13        | 0.49     |
| 8:BV:857:U:O2'    | 8:DX:814:A:C2     | 2.61        | 0.49     |
| 3:BQ:333:THR:CG2  | 3:BQ:359:PHE:CZ   | 2.95        | 0.49     |
| 2:CP:210:LEU:HD21 | 2:CP:274:LEU:HD21 | 1.95        | 0.49     |
| 3:DQ:411:ARG:CB   | 6:DT:561:GLU:HB2  | 2.42        | 0.49     |
| 2:DP:284:GLU:N    | 2:DP:285:PRO:HD2  | 2.28        | 0.49     |
| 3:CC:342:VAL:HG13 | 3:CC:409:VAL:HG13 | 1.95        | 0.49     |
| 2:CP:220:LYS:HE3  | 2:CP:263:ASN:O    | 2.12        | 0.49     |
| 2:DI:217:ILE:HG23 | 2:DI:265:ILE:HG23 | 1.95        | 0.49     |
| 2:CI:280:LEU:HD21 | 2:CI:284:GLU:O    | 2.12        | 0.49     |
| 5:BE:633:VAL:HG12 | 5:BE:634:TRP:N    | 2.27        | 0.49     |
| 5:BE:688:GLN:NE2  | 7:BG:757:ILE:HG13 | 2.28        | 0.49     |
| 3:CQ:344:ILE:CG2  | 3:CQ:406:VAL:HG22 | 2.42        | 0.49     |
| 6:DF:529:TYR:CE2  | 6:DF:549:GLU:HB2  | 2.47        | 0.49     |
| 5:CE:661:ALA:O    | 5:CE:673:GLN:HA   | 2.12        | 0.49     |
| 7:DU:719:LEU:HD11 | 7:DU:770:LEU:HG   | 1.94        | 0.49     |
| 8:AV:849:G:H1'    | 8:CX:815:A:H61    | 1.77        | 0.49     |
| 8:BV:814:A:N1     | 8:BV:815:A:C2     | 2.80        | 0.49     |
| 3:BQ:410:LEU:HD23 | 6:BT:562:VAL:HG13 | 1.93        | 0.49     |
| 2:AI:279:LEU:HD22 | 3:AJ:366:VAL:HG11 | 1.93        | 0.49     |
| 5:CS:635:LEU:CD2  | 5:CS:679:LEU:HD13 | 2.38        | 0.49     |
| 4:AR:58:LEU:HD22  | 7:AU:771:GLU:HG3  | 1.95        | 0.49     |
| 2:BI:245:MET:CE   | 2:BI:258:LEU:HD22 | 2.43        | 0.49     |
| 3:AJ:342:VAL:CG2  | 3:AJ:356:VAL:CG2  | 2.65        | 0.49     |
| 3:BC:358:ALA:HB3  | 3:BC:366:VAL:HB   | 1.94        | 0.49     |
| 4:DD:58:LEU:HD13  | 4:DD:61:VAL:HG12  | 1.93        | 0.49     |
| 2:BP:294:ALA:O    | 2:BP:295:VAL:CB   | 2.61        | 0.49     |
| 2:CB:287:VAL:O    | 2:CB:291:LYS:HB2  | 2.12        | 0.49     |
| 2:CB:295:VAL:O    | 2:CB:296:ALA:HB2  | 2.12        | 0.49     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:DP:230:THR:HG21 | 2:DP:241:LYS:HD3  | 1.94        | 0.49     |
| 8:BY:839:C:H6     | 8:BY:839:C:H5''   | 1.77        | 0.49     |
| 4:CR:19:THR:HB    | 4:CR:72:ILE:CB    | 2.40        | 0.49     |
| 8:BV:865:C:H2'    | 8:BV:866:U:H6     | 1.77        | 0.49     |
| 3:BC:353:LEU:HD22 | 6:BT:555:LEU:HD23 | 1.94        | 0.49     |
| 5:AE:618:ILE:HG22 | 5:AE:619:ASN:N    | 2.27        | 0.49     |
| 8:CX:804:G:O5'    | 8:CX:804:G:H8     | 1.96        | 0.49     |
| 2:CI:280:LEU:O    | 2:CI:280:LEU:HD12 | 2.12        | 0.49     |
| 2:CI:274:LEU:CD1  | 3:CJ:398:LYS:HZ1  | 2.14        | 0.49     |
| 6:DF:539:TYR:CD2  | 6:DF:566:CYS:HB3  | 2.47        | 0.49     |
| 1:DH:131:PHE:CE1  | 1:DH:140:LEU:HD22 | 2.43        | 0.49     |
| 2:DP:277:ASP:HB2  | 2:DP:290:LYS:NZ   | 2.27        | 0.49     |
| 6:BM:539:TYR:CZ   | 8:BX:837:G:C6     | 3.00        | 0.49     |
| 7:CN:738:MET:O    | 7:CN:764:GLY:HA3  | 2.12        | 0.49     |
| 7:CN:740:LEU:N    | 7:CN:740:LEU:HD12 | 2.27        | 0.49     |
| 4:DR:21:GLU:HB3   | 4:DR:70:PHE:CE2   | 2.47        | 0.49     |
| 2:AB:206:PHE:HA   | 2:AB:276:LEU:HD13 | 1.92        | 0.49     |
| 5:AE:631:ILE:CD1  | 5:DE:690:VAL:HG21 | 2.42        | 0.49     |
| 2:BI:229:ILE:HG23 | 2:BI:238:THR:HG23 | 1.95        | 0.49     |
| 1:DH:150:LYS:CD   | 1:DH:162:GLU:HB3  | 2.43        | 0.49     |
| 3:AJ:362:HIS:ND1  | 8:AX:836:U:H2'    | 2.27        | 0.49     |
| 2:DP:232:VAL:HG22 | 2:DP:238:THR:HG23 | 1.95        | 0.49     |
| 2:CI:218:GLU:O    | 2:CI:266:ARG:HB3  | 2.13        | 0.49     |
| 2:AB:274:LEU:HB2  | 3:AC:398:LYS:HZ2  | 1.77        | 0.49     |
| 4:DK:28:TYR:OH    | 7:DN:769:MET:HE1  | 2.11        | 0.49     |
| 1:AO:154:LYS:HD2  | 8:AY:849:G:H5''   | 1.95        | 0.49     |
| 1:BH:150:LYS:O    | 1:BH:151:ILE:HD13 | 2.12        | 0.49     |
| 8:BY:818:G:N2     | 8:BY:819:U:C2     | 2.80        | 0.49     |
| 6:AF:551:ILE:HD11 | 6:AF:556:SER:OG   | 2.12        | 0.49     |
| 1:AA:144:ASP:OD1  | 4:AD:84:LYS:NZ    | 2.46        | 0.49     |
| 7:BU:748:MET:HA   | 7:BU:753:GLN:HA   | 1.95        | 0.49     |
| 2:DB:251:GLU:HB2  | 2:DB:252:PRO:HD2  | 1.94        | 0.49     |
| 1:BH:141:ILE:HG22 | 1:BH:141:ILE:O    | 2.12        | 0.49     |
| 2:DI:280:LEU:HG   | 2:DI:281:VAL:N    | 2.26        | 0.49     |
| 4:CK:9:VAL:CA     | 4:CK:80:ALA:CB    | 2.81        | 0.49     |
| 4:CK:81:PRO:HB3   | 4:CK:84:LYS:CE    | 2.43        | 0.49     |
| 1:AH:176:ASN:N    | 1:AH:176:ASN:HD22 | 2.11        | 0.49     |
| 8:BX:839:C:C2     | 8:BX:840:A:C8     | 3.01        | 0.49     |
| 8:AV:841:G:C4     | 8:AV:842:U:C5     | 3.00        | 0.49     |
| 3:DC:325:ASN:ND2  | 8:DV:829:C:OP1    | 2.46        | 0.49     |
| 3:AC:375:THR:OG1  | 3:AC:391:ASN:ND2  | 2.46        | 0.49     |
| 8:DV:814:A:N6     | 8:DV:815:A:N6     | 2.61        | 0.49     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BJ:359:PHE:HA   | 3:BJ:364:ASN:O    | 2.12        | 0.49     |
| 2:BP:260:ILE:CG2  | 2:BP:265:ILE:HD11 | 2.42        | 0.49     |
| 7:DU:742:ILE:O    | 7:DU:760:VAL:HG12 | 2.13        | 0.49     |
| 3:BC:360:ASP:OD1  | 3:BC:364:ASN:N    | 2.46        | 0.49     |
| 5:AL:634:TRP:HH2  | 5:AL:664:ILE:HG13 | 1.78        | 0.49     |
| 6:DT:528:GLU:HB2  | 6:DT:550:TYR:HB2  | 1.94        | 0.49     |
| 3:BJ:343:LEU:HB3  | 3:BJ:410:LEU:HB2  | 1.94        | 0.49     |
| 1:AH:119:CYS:SG   | 1:AH:140:LEU:CD1  | 3.00        | 0.49     |
| 3:AQ:330:SER:O    | 3:AQ:334:GLN:HG3  | 2.12        | 0.49     |
| 6:AT:535:SER:OG   | 6:AT:543:GLN:HB3  | 2.13        | 0.49     |
| 3:CQ:406:VAL:HG12 | 6:CT:565:ARG:HG3  | 1.95        | 0.49     |
| 6:CM:567:ASN:HB3  | 8:CX:837:G:N3     | 2.27        | 0.49     |
| 3:BJ:407:ILE:HD11 | 6:BM:525:TRP:HZ3  | 1.78        | 0.49     |
| 6:CT:570:LEU:HD23 | 6:CT:571:TYR:CD2  | 2.48        | 0.49     |
| 2:BB:207:LEU:HD11 | 3:BC:400:PHE:CE1  | 2.48        | 0.49     |
| 8:BX:807:A:H2'    | 8:BX:808:C:C5'    | 2.43        | 0.49     |
| 2:CB:286:LYS:HE2  | 3:CC:336:VAL:CG1  | 2.41        | 0.49     |
| 2:AI:247:LEU:HB2  | 2:AI:250:ARG:HB2  | 1.94        | 0.49     |
| 2:DI:215:VAL:HG12 | 2:DI:271:PRO:HD2  | 1.94        | 0.49     |
| 8:BY:807:A:OP2    | 8:BY:807:A:H4'    | 2.13        | 0.49     |
| 2:BI:287:VAL:HG13 | 2:BI:291:LYS:HD2  | 1.95        | 0.49     |
| 4:BR:36:GLU:OE2   | 7:BU:708:GLU:CG   | 2.61        | 0.49     |
| 4:BR:5:VAL:CG2    | 4:BR:6:PRO:HD3    | 2.43        | 0.49     |
| 2:DI:212:HIS:ND1  | 2:DI:212:HIS:O    | 2.46        | 0.49     |
| 4:CD:46:ILE:HD12  | 4:CD:46:ILE:C     | 2.33        | 0.49     |
| 5:CL:640:ASN:C    | 5:CL:640:ASN:OD1  | 2.51        | 0.49     |
| 6:DM:541:ASN:OD1  | 6:DM:565:ARG:HA   | 2.13        | 0.48     |
| 3:DC:362:HIS:ND1  | 8:DV:836:U:H2'    | 2.25        | 0.48     |
| 1:DH:179:SER:HA   | 2:DI:259:SER:O    | 2.13        | 0.48     |
| 6:CF:521:VAL:HG22 | 6:CF:572:ILE:CD1  | 2.42        | 0.48     |
| 5:CE:621:ILE:HD11 | 7:CG:741:VAL:HB   | 1.95        | 0.48     |
| 8:BX:837:G:H4'    | 8:BX:838:A:OP2    | 2.13        | 0.48     |
| 5:AE:681:GLY:HA2  | 5:AE:684:ILE:CD1  | 2.42        | 0.48     |
| 2:CB:265:ILE:HG21 | 2:CB:268:PHE:CE1  | 2.48        | 0.48     |
| 3:CC:347:ARG:HA   | 3:CC:407:ILE:HD12 | 1.94        | 0.48     |
| 8:CV:864:A:C6     | 8:CV:865:C:C4     | 3.01        | 0.48     |
| 2:DB:293:GLU:CD   | 3:DC:398:LYS:HE2  | 2.34        | 0.48     |
| 5:BE:657:VAL:O    | 5:BE:658:LEU:HD23 | 2.12        | 0.48     |
| 1:BA:131:PHE:CZ   | 1:BA:134:PHE:HB3  | 2.44        | 0.48     |
| 4:DK:29:ARG:O     | 4:DK:46:ILE:HA    | 2.12        | 0.48     |
| 7:CG:763:ARG:NH2  | 8:CV:832:U:H1'    | 2.28        | 0.48     |
| 5:CL:634:TRP:CZ2  | 5:CL:642:ARG:CD   | 2.95        | 0.48     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:DO:135:ASP:OD1  | 1:DO:139:ASN:N    | 2.46        | 0.48     |
| 5:AL:638:GLN:OE1  | 6:AM:524:LYS:NZ   | 2.46        | 0.48     |
| 7:BG:709:LEU:HD13 | 7:BG:734:PHE:CB   | 2.43        | 0.48     |
| 6:DT:576:GLU:OE1  | 6:DT:579:GLU:HB2  | 2.12        | 0.48     |
| 1:AO:192:ILE:O    | 1:AO:195:VAL:HG12 | 2.12        | 0.48     |
| 2:DI:213:GLU:C    | 2:DI:228:THR:HG23 | 2.34        | 0.48     |
| 7:DN:708:GLU:HA   | 7:DN:708:GLU:OE1  | 2.13        | 0.48     |
| 1:DO:117:MET:SD   | 1:DO:182:VAL:HG22 | 2.53        | 0.48     |
| 6:AM:579:GLU:O    | 6:AM:583:GLU:HG2  | 2.13        | 0.48     |
| 2:AP:229:ILE:HA   | 2:AP:240:LEU:HD23 | 1.96        | 0.48     |
| 4:CR:64:ARG:NE    | 4:CR:66:SER:HG    | 2.11        | 0.48     |
| 2:CI:280:LEU:HD22 | 2:CI:286:LYS:CB   | 2.38        | 0.48     |
| 2:CI:286:LYS:HE3  | 3:CJ:357:LYS:O    | 2.12        | 0.48     |
| 5:AS:661:ALA:CB   | 5:AS:677:ILE:HD12 | 2.43        | 0.48     |
| 3:AQ:347:ARG:HA   | 3:AQ:407:ILE:HD11 | 1.95        | 0.48     |
| 3:AJ:347:ARG:HD3  | 6:AM:525:TRP:HZ2  | 1.71        | 0.48     |
| 8:AX:840:A:C2     | 8:AX:841:G:H1'    | 2.47        | 0.48     |
| 7:DU:719:LEU:CD2  | 7:DU:740:LEU:CD1  | 2.90        | 0.48     |
| 3:CC:407:ILE:HG22 | 3:CC:408:VAL:HG23 | 1.94        | 0.48     |
| 2:DB:207:LEU:O    | 2:DB:232:VAL:CG2  | 2.58        | 0.48     |
| 3:BC:407:ILE:HG12 | 6:BF:568:ASN:ND2  | 2.28        | 0.48     |
| 2:BB:274:LEU:HD21 | 2:BB:290:LYS:C    | 2.34        | 0.48     |
| 5:CE:686:LEU:HD22 | 7:CG:762:ILE:HG12 | 1.94        | 0.48     |
| 8:BY:861:G:C2     | 8:BY:862:A:C8     | 3.01        | 0.48     |
| 7:CU:756:ASN:O    | 7:CU:757:ILE:HD13 | 2.14        | 0.48     |
| 8:DX:846:U:H6     | 8:DX:846:U:O5'    | 1.96        | 0.48     |
| 8:AY:840:A:H2'    | 8:AY:841:G:O4'    | 2.13        | 0.48     |
| 2:BB:284:GLU:N    | 2:BB:285:PRO:HD3  | 2.28        | 0.48     |
| 8:BV:829:C:H1'    | 8:BV:830:A:OP2    | 2.13        | 0.48     |
| 3:AQ:361:ARG:C    | 3:AQ:363:CYS:H    | 2.15        | 0.48     |
| 3:CJ:346:CYS:HB2  | 3:CJ:350:LYS:HB2  | 1.95        | 0.48     |
| 1:BO:154:LYS:HB3  | 1:BO:157:LYS:HE2  | 1.94        | 0.48     |
| 6:BT:546:ASN:N    | 6:BT:560:GLY:O    | 2.42        | 0.48     |
| 2:AP:287:VAL:HA   | 2:AP:290:LYS:HE2  | 1.93        | 0.48     |
| 4:BK:28:TYR:OH    | 7:BN:769:MET:SD   | 2.64        | 0.48     |
| 6:CT:523:LEU:HD23 | 6:CT:569:VAL:HA   | 1.95        | 0.48     |
| 6:DF:567:ASN:H    | 8:DV:837:G:N2     | 2.12        | 0.48     |
| 2:AI:280:LEU:HD23 | 2:AI:286:LYS:HE3  | 1.92        | 0.48     |
| 2:DP:286:LYS:O    | 2:DP:290:LYS:HG2  | 2.13        | 0.48     |
| 7:CG:741:VAL:HG22 | 7:CG:761:VAL:CG2  | 2.41        | 0.48     |
| 1:BA:179:SER:CB   | 2:BB:258:LEU:HD11 | 2.40        | 0.48     |
| 2:BI:263:ASN:HB2  | 8:BX:835:U:O2'    | 2.13        | 0.48     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:BN:758:GLY:C    | 5:BS:630:ARG:NH1  | 2.66        | 0.48     |
| 7:BU:743:ASP:HA   | 7:BU:758:GLY:O    | 2.13        | 0.48     |
| 1:DO:170:VAL:HA   | 4:DR:71:LEU:O     | 2.12        | 0.48     |
| 6:BF:539:TYR:HD1  | 8:BV:831:A:O5'    | 1.95        | 0.48     |
| 2:BB:274:LEU:HG   | 2:BB:290:LYS:HB2  | 1.95        | 0.48     |
| 1:DH:155:ASN:OD1  | 1:DH:156:SER:N    | 2.46        | 0.48     |
| 7:CG:737:PHE:O    | 7:CG:738:MET:HB2  | 2.11        | 0.48     |
| 3:DQ:362:HIS:CG   | 8:DY:836:U:C2     | 3.01        | 0.48     |
| 3:AJ:327:GLY:H    | 3:AJ:330:SER:HB2  | 1.78        | 0.48     |
| 7:DN:706:PRO:O    | 7:DN:710:LYS:HG3  | 2.13        | 0.48     |
| 1:DA:159:ALA:CB   | 8:DV:848:U:O2'    | 2.60        | 0.48     |
| 5:CL:690:VAL:HG11 | 5:CS:631:ILE:HD13 | 1.92        | 0.48     |
| 3:DQ:346:CYS:HB2  | 3:DQ:350:LYS:CG   | 2.42        | 0.48     |
| 5:AL:639:VAL:HG23 | 6:AM:524:LYS:HE3  | 1.96        | 0.48     |
| 7:BN:750:THR:O    | 7:BN:750:THR:CG2  | 2.60        | 0.48     |
| 5:AS:682:ASP:HA   | 7:AU:763:ARG:NH1  | 2.28        | 0.48     |
| 2:CB:202:LYS:CE   | 2:CB:204:VAL:CG2  | 2.92        | 0.48     |
| 4:DD:15:GLY:N     | 4:DD:32:LEU:O     | 2.36        | 0.48     |
| 2:CP:206:PHE:CE1  | 2:CP:279:LEU:HB3  | 2.48        | 0.48     |
| 8:BY:819:U:O4     | 8:BY:820:C:N4     | 2.46        | 0.48     |
| 2:DI:240:LEU:HD11 | 2:DI:260:ILE:HD12 | 1.95        | 0.48     |
| 4:AK:13:ALA:HA    | 4:AK:16:HIS:NE2   | 2.26        | 0.48     |
| 4:BK:9:VAL:CG1    | 4:BK:10:LEU:HG    | 2.35        | 0.48     |
| 3:BJ:347:ARG:CA   | 6:BM:525:TRP:HH2  | 2.25        | 0.48     |
| 5:AE:636:TYR:HB3  | 5:AE:686:LEU:HB2  | 1.95        | 0.48     |
| 6:BF:514:LEU:HD21 | 6:BF:572:ILE:CD1  | 2.44        | 0.48     |
| 6:BF:571:TYR:C    | 6:BF:571:TYR:CD1  | 2.87        | 0.48     |
| 8:CY:806:G:HO2'   | 8:CY:807:A:C1'    | 2.26        | 0.48     |
| 6:DT:548:GLU:OE1  | 6:DT:555:LEU:HD11 | 2.12        | 0.48     |
| 8:CX:802:C:H2'    | 8:CX:803:C:H5''   | 1.96        | 0.48     |
| 5:CL:646:CYS:O    | 5:CL:658:LEU:HA   | 2.14        | 0.48     |
| 7:AU:722:ASN:O    | 7:AU:724:GLY:N    | 2.47        | 0.48     |
| 4:AK:48:VAL:O     | 4:AK:48:VAL:HG13  | 2.13        | 0.48     |
| 6:AT:571:TYR:C    | 6:AT:571:TYR:CD1  | 2.86        | 0.48     |
| 5:BE:664:ILE:HD13 | 5:BE:670:SER:CB   | 2.44        | 0.48     |
| 3:DQ:343:LEU:HD23 | 3:DQ:410:LEU:HD13 | 1.96        | 0.48     |
| 2:BP:236:MET:CE   | 3:BQ:402:ARG:NH1  | 2.76        | 0.48     |
| 5:DS:631:ILE:HG22 | 5:DS:632:GLN:N    | 2.28        | 0.48     |
| 5:BE:663:GLU:OE2  | 5:BE:674:LEU:HD11 | 2.13        | 0.48     |
| 7:DN:729:GLY:HA3  | 7:DN:742:ILE:HG21 | 1.95        | 0.48     |
| 2:BP:230:THR:HG22 | 2:BP:241:LYS:HD3  | 1.94        | 0.48     |
| 1:DO:118:ARG:HA   | 1:DO:128:ILE:HD13 | 1.95        | 0.48     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:DO:118:ARG:O    | 1:DO:180:MET:HA   | 2.14        | 0.48     |
| 1:DO:118:ARG:HG3  | 1:DO:128:ILE:CD1  | 2.43        | 0.48     |
| 2:DP:258:LEU:HD23 | 2:DP:260:ILE:HD11 | 1.95        | 0.48     |
| 3:CJ:370:VAL:CB   | 3:CJ:399:MET:HE3  | 2.44        | 0.48     |
| 4:AK:81:PRO:O     | 4:AK:85:SER:HB2   | 2.13        | 0.48     |
| 1:CA:170:VAL:CG1  | 1:CA:171:LEU:N    | 2.76        | 0.48     |
| 7:AN:726:HIS:ND1  | 7:AN:748:MET:HE1  | 2.27        | 0.48     |
| 1:CH:109:MET:O    | 1:CH:113:ILE:HD11 | 2.14        | 0.48     |
| 7:BG:709:LEU:HD12 | 7:BG:713:MET:HG2  | 1.95        | 0.48     |
| 5:AS:628:ARG:O    | 5:AS:631:ILE:HB   | 2.13        | 0.48     |
| 5:AS:615:VAL:O    | 5:AS:615:VAL:HG12 | 2.14        | 0.48     |
| 5:DL:639:VAL:O    | 5:DL:639:VAL:HG12 | 2.13        | 0.48     |
| 4:DD:33:ILE:HD11  | 4:DD:44:SER:OG    | 2.13        | 0.48     |
| 7:CG:732:ARG:HG3  | 7:CG:743:ASP:HB2  | 1.94        | 0.48     |
| 8:CV:807:A:H2     | 8:CV:822:G:H22    | 1.60        | 0.48     |
| 7:DN:765:ASN:HB2  | 8:DX:832:U:O2     | 2.13        | 0.48     |
| 2:AP:245:MET:O    | 2:AP:252:PRO:HA   | 2.14        | 0.48     |
| 2:CP:217:ILE:HD12 | 2:CP:260:ILE:CD1  | 2.44        | 0.48     |
| 5:BE:665:HIS:ND1  | 5:BE:666:SER:N    | 2.62        | 0.48     |
| 6:AM:567:ASN:O    | 8:AX:838:A:C6     | 2.66        | 0.48     |
| 6:BM:523:LEU:CD1  | 6:BM:523:LEU:N    | 2.77        | 0.48     |
| 2:DP:290:LYS:N    | 3:DQ:357:LYS:NZ   | 2.61        | 0.48     |
| 6:BT:524:LYS:HA   | 6:BT:570:LEU:CG   | 2.43        | 0.48     |
| 3:AC:412:ASN:HB3  | 3:AC:413:PRO:HD3  | 1.96        | 0.48     |
| 8:BX:839:C:O2'    | 8:BX:840:A:H5'    | 2.14        | 0.48     |
| 7:BN:705:HIS:O    | 7:BN:708:GLU:HG2  | 2.14        | 0.48     |
| 1:CA:150:LYS:CG   | 1:CA:162:GLU:CG   | 2.63        | 0.48     |
| 3:AC:363:CYS:HB2  | 6:AF:565:ARG:NH1  | 2.29        | 0.48     |
| 2:CI:206:PHE:CD1  | 2:CI:279:LEU:HB3  | 2.48        | 0.48     |
| 4:BR:46:ILE:HD12  | 4:BR:46:ILE:C     | 2.34        | 0.48     |
| 2:BP:263:ASN:HB2  | 8:BY:835:U:O2'    | 2.13        | 0.48     |
| 5:BE:651:ASP:CB   | 6:BF:507:PRO:HD3  | 2.43        | 0.48     |
| 1:CH:118:ARG:HG3  | 1:CH:126:ILE:HG23 | 1.95        | 0.48     |
| 8:AY:839:C:C4'    | 8:AY:839:C:H6     | 2.26        | 0.48     |
| 8:BX:807:A:C2'    | 8:BX:808:C:H5''   | 2.43        | 0.48     |
| 5:BL:664:ILE:CG2  | 5:BL:665:HIS:N    | 2.75        | 0.48     |
| 5:DL:663:GLU:CB   | 5:DL:671:ARG:HB2  | 2.39        | 0.48     |
| 8:CY:811:C:C2     | 8:CY:812:U:C6     | 3.00        | 0.48     |
| 1:DA:130:THR:CB   | 1:DA:143:CYS:HB2  | 2.40        | 0.48     |
| 1:AA:109:MET:HE3  | 1:AA:134:PHE:CG   | 2.48        | 0.48     |
| 1:DO:178:VAL:HG22 | 2:DP:264:ASN:ND2  | 2.29        | 0.48     |
| 2:BB:215:VAL:HG13 | 2:BB:271:PRO:HG3  | 1.94        | 0.48     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:BJ:336:VAL:CG2  | 3:BJ:357:LYS:C    | 2.82        | 0.48     |
| 3:CC:324:PHE:CG   | 3:CC:325:ASN:N    | 2.81        | 0.48     |
| 3:BQ:338:ASN:O    | 3:BQ:338:ASN:OD1  | 2.32        | 0.48     |
| 4:DD:5:VAL:HB     | 4:DD:6:PRO:CD     | 2.43        | 0.48     |
| 6:DT:537:ASP:CG   | 6:DT:541:ASN:HD22 | 2.16        | 0.48     |
| 3:DC:410:LEU:HD13 | 6:DF:559:LEU:HD11 | 1.87        | 0.48     |
| 2:DI:220:LYS:O    | 3:DJ:347:ARG:NH2  | 2.47        | 0.48     |
| 8:DX:843:C:H2'    | 8:DX:844:U:O5'    | 2.14        | 0.48     |
| 2:CP:229:ILE:HA   | 2:CP:240:LEU:HD23 | 1.94        | 0.48     |
| 3:AJ:407:ILE:CD1  | 6:AM:525:TRP:CZ3  | 2.93        | 0.48     |
| 3:AJ:408:VAL:CG2  | 6:AM:564:ILE:HG12 | 2.26        | 0.48     |
| 1:DH:131:PHE:CZ   | 1:DH:134:PHE:HB3  | 2.49        | 0.48     |
| 1:CH:130:THR:CG2  | 1:CH:132:LYS:HD3  | 2.43        | 0.48     |
| 6:CF:521:VAL:HG11 | 6:CF:569:VAL:HG13 | 1.95        | 0.48     |
| 7:DU:734:PHE:CD1  | 7:DU:740:LEU:HD23 | 2.43        | 0.48     |
| 8:CX:814:A:C2     | 8:CX:815:A:C4     | 3.02        | 0.48     |
| 1:BA:179:SER:HB3  | 2:BB:258:LEU:CD1  | 2.40        | 0.48     |
| 2:BP:205:ARG:C    | 2:BP:208:MET:HE2  | 2.32        | 0.48     |
| 6:CT:511:LEU:HD21 | 6:CT:536:VAL:HB   | 1.96        | 0.48     |
| 4:DR:81:PRO:HB2   | 4:DR:85:SER:CA    | 2.44        | 0.48     |
| 5:DS:663:GLU:O    | 5:DS:670:SER:OG   | 2.19        | 0.48     |
| 4:AR:74:PRO:O     | 4:AR:77:LEU:CD1   | 2.62        | 0.48     |
| 7:DG:709:LEU:HD13 | 7:DG:734:PHE:HB3  | 1.95        | 0.48     |
| 4:DK:30:GLY:HA3   | 4:DK:46:ILE:HG22  | 1.96        | 0.48     |
| 5:AE:631:ILE:HG22 | 5:AE:632:GLN:N    | 2.28        | 0.48     |
| 1:DH:153:PRO:CB   | 1:DH:160:GLU:HG3  | 2.42        | 0.48     |
| 1:CO:151:ILE:HG13 | 1:CO:163:GLU:CG   | 2.44        | 0.48     |
| 3:BC:386:LYS:HD3  | 8:BY:868:G:O6     | 2.14        | 0.48     |
| 3:DQ:401:LEU:HD12 | 3:DQ:402:ARG:H    | 1.79        | 0.48     |
| 1:AO:151:ILE:HG13 | 1:AO:163:GLU:HG3  | 1.96        | 0.48     |
| 8:CY:801:G:N3     | 8:CY:801:G:H2'    | 2.28        | 0.48     |
| 2:BI:230:THR:N    | 2:BI:239:HIS:O    | 2.47        | 0.48     |
| 2:BI:212:HIS:HA   | 2:BI:228:THR:HG22 | 1.95        | 0.48     |
| 4:CR:19:THR:HB    | 4:CR:72:ILE:CG1   | 2.44        | 0.48     |
| 8:AY:865:C:O2'    | 8:AY:866:U:C5'    | 2.61        | 0.48     |
| 5:AL:690:VAL:CG1  | 5:AL:690:VAL:O    | 2.60        | 0.48     |
| 5:BL:689:SER:O    | 5:BL:690:VAL:HG12 | 2.14        | 0.48     |
| 2:AB:225:VAL:HG22 | 2:AB:245:MET:HG3  | 1.95        | 0.48     |
| 4:CK:78:LYS:HA    | 4:CK:85:SER:OG    | 2.13        | 0.48     |
| 2:CP:270:LEU:HB2  | 3:CQ:398:LYS:HG3  | 1.94        | 0.48     |
| 6:DF:537:ASP:OD2  | 6:DF:541:ASN:ND2  | 2.45        | 0.48     |
| 7:AN:721:LEU:HD12 | 7:AN:725:ARG:HB2  | 1.96        | 0.48     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CC:410:LEU:HD13 | 6:CF:559:LEU:HD13 | 1.96        | 0.48     |
| 2:CP:230:THR:N    | 2:CP:239:HIS:O    | 2.42        | 0.48     |
| 3:AQ:407:ILE:HD11 | 6:AT:525:TRP:CH2  | 2.49        | 0.48     |
| 3:CQ:361:ARG:C    | 3:CQ:363:CYS:H    | 2.17        | 0.48     |
| 4:DK:38:ASN:O     | 4:DK:39:MET:HB2   | 2.14        | 0.48     |
| 7:DU:738:MET:CE   | 7:DU:767:ILE:HB   | 2.43        | 0.48     |
| 8:BV:814:A:C2     | 8:BV:815:A:C4     | 3.02        | 0.48     |
| 3:BQ:332:LEU:HD12 | 6:BT:563:LEU:HD23 | 1.96        | 0.48     |
| 7:BN:704:ALA:HB1  | 7:BN:707:PRO:HG2  | 1.95        | 0.48     |
| 5:AE:684:ILE:HG21 | 5:AE:687:LEU:HD21 | 1.96        | 0.48     |
| 5:BS:661:ALA:O    | 5:BS:673:GLN:CA   | 2.55        | 0.48     |
| 2:AI:230:THR:N    | 2:AI:239:HIS:O    | 2.43        | 0.48     |
| 1:DO:170:VAL:HG13 | 4:DR:70:PHE:HB2   | 1.96        | 0.48     |
| 1:CA:143:CYS:SG   | 4:CD:84:LYS:HD2   | 2.52        | 0.48     |
| 1:DH:158:GLN:HG2  | 1:DH:159:ALA:N    | 2.29        | 0.48     |
| 5:CL:688:GLN:HB3  | 7:CN:760:VAL:HG23 | 1.96        | 0.48     |
| 5:BL:671:ARG:O    | 5:BL:672:LYS:HG3  | 2.14        | 0.48     |
| 4:DR:12:GLU:HG3   | 4:DR:79:ASN:CG    | 2.34        | 0.48     |
| 5:AE:656:LEU:CB   | 5:AE:658:LEU:HD21 | 2.44        | 0.48     |
| 8:AY:859:A:N7     | 8:AY:860:G:C8     | 2.81        | 0.48     |
| 4:AD:38:ASN:ND2   | 8:AV:833:U:O4     | 2.47        | 0.48     |
| 3:DJ:315:GLU:OE1  | 3:DJ:315:GLU:N    | 2.40        | 0.48     |
| 4:CR:81:PRO:HG2   | 4:CR:84:LYS:HZ2   | 1.77        | 0.48     |
| 3:BC:316:LEU:H    | 3:BC:316:LEU:CD2  | 2.27        | 0.48     |
| 5:BE:639:VAL:O    | 5:BE:639:VAL:HG12 | 2.14        | 0.48     |
| 8:DX:819:U:H2'    | 8:DX:820:C:C6     | 2.49        | 0.48     |
| 2:BI:292:ARG:O    | 2:BI:295:VAL:C    | 2.51        | 0.48     |
| 2:DB:215:VAL:HG12 | 2:DB:271:PRO:HD3  | 1.95        | 0.48     |
| 2:AP:286:LYS:CD   | 3:AQ:357:LYS:HZ1  | 2.21        | 0.48     |
| 3:DJ:347:ARG:HG2  | 8:DX:839:C:O2'    | 2.14        | 0.48     |
| 2:CP:217:ILE:HG21 | 2:CP:265:ILE:HD13 | 1.94        | 0.48     |
| 8:DV:838:A:H2'    | 8:DV:839:C:O4'    | 2.13        | 0.48     |
| 1:AH:121:LEU:HD22 | 1:AH:176:ASN:CB   | 2.40        | 0.48     |
| 5:AE:610:VAL:HG12 | 5:AE:612:LYS:CG   | 2.43        | 0.48     |
| 2:AB:261:ARG:HD2  | 8:AV:835:U:O4'    | 2.13        | 0.48     |
| 7:BU:731:LEU:HD13 | 7:BU:740:LEU:HD23 | 1.94        | 0.48     |
| 2:CB:270:LEU:CD1  | 3:CC:400:PHE:HB2  | 2.41        | 0.48     |
| 6:CT:511:LEU:HD21 | 6:CT:536:VAL:CB   | 2.44        | 0.48     |
| 3:DC:358:ALA:O    | 3:DC:366:VAL:N    | 2.31        | 0.48     |
| 6:BF:539:TYR:CG   | 8:BV:837:G:N1     | 2.81        | 0.48     |
| 3:BC:343:LEU:HB3  | 3:BC:410:LEU:HB2  | 1.96        | 0.48     |
| 4:AR:76:MET:O     | 4:AR:77:LEU:HD23  | 2.14        | 0.48     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:DG:713:MET:HG3  | 7:DG:714:ASP:OD1  | 2.13        | 0.48     |
| 1:AH:134:PHE:HA   | 1:AH:139:ASN:O    | 2.14        | 0.48     |
| 4:AK:40:ASN:CB    | 4:AK:62:TYR:OH    | 2.62        | 0.48     |
| 8:DY:861:G:C6     | 8:DY:862:A:N7     | 2.81        | 0.48     |
| 8:CY:802:C:H2'    | 8:CY:802:C:O2     | 2.14        | 0.48     |
| 2:DP:226:HIS:O    | 2:DP:243:VAL:HA   | 2.13        | 0.48     |
| 7:CU:727:VAL:HG22 | 7:CU:747:GLU:HG3  | 1.96        | 0.48     |
| 3:DJ:332:LEU:CB   | 3:DJ:359:PHE:CE2  | 2.87        | 0.48     |
| 2:CI:270:LEU:CB   | 3:CJ:398:LYS:NZ   | 2.77        | 0.48     |
| 3:CQ:407:ILE:HG12 | 6:CT:568:ASN:ND2  | 2.29        | 0.48     |
| 3:CJ:363:CYS:SG   | 6:CM:565:ARG:NH1  | 2.84        | 0.48     |
| 8:BX:838:A:H2'    | 8:BX:839:C:O4'    | 2.14        | 0.48     |
| 3:AC:363:CYS:HB3  | 6:AF:565:ARG:CZ   | 2.44        | 0.48     |
| 6:AF:523:LEU:O    | 6:AF:526:GLY:N    | 2.45        | 0.48     |
| 2:DB:276:LEU:HD13 | 3:DC:357:LYS:CG   | 2.40        | 0.48     |
| 2:DB:210:LEU:HD11 | 2:DB:274:LEU:CD2  | 2.44        | 0.48     |
| 4:CD:38:ASN:OD1   | 4:CD:40:ASN:ND2   | 2.45        | 0.48     |
| 6:DF:514:LEU:HA   | 6:DF:517:LYS:HG3  | 1.95        | 0.48     |
| 2:AI:289:SER:O    | 2:AI:293:GLU:CG   | 2.60        | 0.48     |
| 1:DO:188:LYS:HG2  | 1:DO:192:ILE:HD11 | 1.94        | 0.48     |
| 6:AF:555:LEU:CB   | 3:AQ:373:MET:SD   | 3.02        | 0.48     |
| 5:AL:668:THR:HG22 | 5:AL:668:THR:O    | 2.14        | 0.48     |
| 2:BI:246:THR:HG22 | 2:BI:252:PRO:HB3  | 1.94        | 0.48     |
| 3:DC:343:LEU:HB3  | 3:DC:410:LEU:HB2  | 1.95        | 0.47     |
| 3:CC:343:LEU:CD2  | 3:CC:410:LEU:HD12 | 2.30        | 0.47     |
| 8:DX:839:C:O2'    | 8:DX:840:A:H5'    | 2.14        | 0.47     |
| 7:DG:727:VAL:HG22 | 7:DG:747:GLU:HA   | 1.96        | 0.47     |
| 5:DL:678:MET:HB3  | 6:DM:572:ILE:HG22 | 1.96        | 0.47     |
| 2:BP:236:MET:HE1  | 8:BY:836:U:O2     | 2.11        | 0.47     |
| 2:CB:262:GLY:C    | 3:CC:402:ARG:NH2  | 2.68        | 0.47     |
| 2:DB:236:MET:CE   | 3:DC:364:ASN:ND2  | 2.77        | 0.47     |
| 1:BO:137:HIS:NE2  | 8:BY:834:U:C2     | 2.81        | 0.47     |
| 7:CN:706:PRO:N    | 7:CN:707:PRO:CD   | 2.77        | 0.47     |
| 5:BL:674:LEU:HD22 | 6:BM:573:ARG:HD2  | 1.95        | 0.47     |
| 3:AJ:312:THR:CG2  | 3:AJ:313:PRO:HD3  | 2.41        | 0.47     |
| 3:BJ:389:PRO:O    | 3:BJ:390:VAL:CG2  | 2.59        | 0.47     |
| 4:BR:47:THR:OG1   | 4:BR:57:GLN:OE1   | 2.23        | 0.47     |
| 1:CH:150:LYS:HZ3  | 8:CX:859:A:H2     | 1.62        | 0.47     |
| 5:AL:628:ARG:HG3  | 5:AL:647:ILE:HG21 | 1.95        | 0.47     |
| 2:AI:292:ARG:HD3  | 3:AJ:339:ASN:ND2  | 2.29        | 0.47     |
| 2:BB:271:PRO:C    | 2:BB:273:SER:H    | 2.17        | 0.47     |
| 4:DD:20:CYS:SG    | 4:DD:71:LEU:HD21  | 2.54        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CT:530:LYS:HG2  | 6:CT:531:GLY:N    | 2.29        | 0.47     |
| 8:CV:849:G:O6     | 8:CV:850:G:C6     | 2.67        | 0.47     |
| 8:CX:851:G:C4     | 8:CX:853:A:OP1    | 2.67        | 0.47     |
| 8:BY:810:A:H2'    | 8:BY:811:C:H6     | 1.78        | 0.47     |
| 8:CX:856:C:H3'    | 8:CX:856:C:C6     | 2.49        | 0.47     |
| 2:DB:233:ASP:OD1  | 2:DB:237:ASN:HB2  | 2.13        | 0.47     |
| 3:DJ:345:ASN:O    | 3:DJ:407:ILE:HB   | 2.13        | 0.47     |
| 3:DJ:407:ILE:CD1  | 6:DM:525:TRP:CZ2  | 2.86        | 0.47     |
| 4:BK:63:ILE:HG22  | 4:BK:64:ARG:O     | 2.14        | 0.47     |
| 6:CT:523:LEU:C    | 6:CT:525:TRP:N    | 2.67        | 0.47     |
| 6:CT:565:ARG:HB3  | 8:CY:837:G:N2     | 2.29        | 0.47     |
| 1:DH:120:ILE:C    | 1:DH:178:VAL:HG22 | 2.24        | 0.47     |
| 6:CF:523:LEU:HD12 | 6:CF:529:TYR:HE1  | 1.79        | 0.47     |
| 5:DS:618:ILE:CG2  | 7:DU:709:LEU:HD23 | 2.41        | 0.47     |
| 8:AV:849:G:C6     | 8:AV:850:G:N7     | 2.82        | 0.47     |
| 6:AF:559:LEU:N    | 6:AF:559:LEU:HD12 | 2.29        | 0.47     |
| 3:BJ:401:LEU:HD12 | 3:BJ:402:ARG:H    | 1.79        | 0.47     |
| 3:AC:407:ILE:HG23 | 6:AF:568:ASN:ND2  | 2.28        | 0.47     |
| 2:CB:220:LYS:CE   | 2:CB:263:ASN:O    | 2.59        | 0.47     |
| 7:CU:762:ILE:CG2  | 7:CU:767:ILE:HD11 | 2.41        | 0.47     |
| 1:BO:137:HIS:NE2  | 8:BY:834:U:C3'    | 2.76        | 0.47     |
| 8:BY:835:U:OP1    | 8:BY:835:U:H4'    | 2.14        | 0.47     |
| 6:BF:536:VAL:HG22 | 6:BF:542:MET:HG2  | 1.96        | 0.47     |
| 4:DD:62:TYR:O     | 7:DG:769:MET:HA   | 2.14        | 0.47     |
| 2:AB:286:LYS:NZ   | 3:AC:357:LYS:HA   | 2.28        | 0.47     |
| 3:AJ:329:LEU:HA   | 3:AJ:332:LEU:HB2  | 1.96        | 0.47     |
| 1:DH:148:PHE:HB3  | 1:DH:150:LYS:O    | 2.14        | 0.47     |
| 7:AN:705:HIS:HB2  | 7:AN:736:PRO:HA   | 1.97        | 0.47     |
| 8:BX:856:C:C4     | 8:BX:857:U:C5     | 3.01        | 0.47     |
| 2:AI:223:THR:OG1  | 2:AI:247:LEU:HA   | 2.15        | 0.47     |
| 1:DO:137:HIS:O    | 1:DO:138:MET:HB3  | 2.13        | 0.47     |
| 3:DQ:364:ASN:HD21 | 3:DQ:402:ARG:HH11 | 1.62        | 0.47     |
| 1:BA:137:HIS:CG   | 8:BV:834:U:C4     | 3.02        | 0.47     |
| 1:BA:137:HIS:O    | 1:BA:137:HIS:ND1  | 2.47        | 0.47     |
| 6:AM:508:LYS:HB2  | 6:AM:509:PRO:CD   | 2.43        | 0.47     |
| 8:DX:847:A:N3     | 8:DX:848:U:H5     | 2.12        | 0.47     |
| 2:DB:216:THR:HA   | 2:DB:225:VAL:O    | 2.14        | 0.47     |
| 5:BL:690:VAL:HG22 | 5:BL:690:VAL:O    | 2.15        | 0.47     |
| 1:CA:122:GLN:HA   | 1:CA:178:VAL:HG11 | 1.96        | 0.47     |
| 5:AS:615:VAL:O    | 5:AS:617:PRO:HD3  | 2.14        | 0.47     |
| 2:BI:246:THR:HG22 | 2:BI:252:PRO:CB   | 2.44        | 0.47     |
| 2:BB:224:GLN:HE21 | 2:BB:246:THR:HB   | 1.79        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:BB:245:MET:O    | 2:BB:252:PRO:HA   | 2.14        | 0.47     |
| 3:DQ:356:VAL:HG13 | 3:DQ:365:MET:CE   | 2.43        | 0.47     |
| 2:BB:265:ILE:HG22 | 2:BB:266:ARG:N    | 2.29        | 0.47     |
| 1:BH:142:LEU:HD13 | 1:BH:145:CYS:SG   | 2.54        | 0.47     |
| 2:AP:276:LEU:HD13 | 3:AQ:357:LYS:HE2  | 1.94        | 0.47     |
| 1:CO:109:MET:HA   | 1:CO:109:MET:CE   | 2.35        | 0.47     |
| 2:CP:227:GLY:HA3  | 2:CP:243:VAL:HG22 | 1.95        | 0.47     |
| 2:CI:203:LEU:HD21 | 3:CJ:400:PHE:CZ   | 2.48        | 0.47     |
| 3:AJ:407:ILE:HG22 | 3:AJ:408:VAL:HG23 | 1.96        | 0.47     |
| 3:DC:345:ASN:OD1  | 3:DC:351:LYS:HE2  | 2.15        | 0.47     |
| 5:BE:632:GLN:NE2  | 5:CE:690:VAL:HG11 | 2.28        | 0.47     |
| 4:AK:9:VAL:HG23   | 4:AK:10:LEU:N     | 2.28        | 0.47     |
| 7:DU:706:PRO:N    | 7:DU:707:PRO:HD2  | 2.29        | 0.47     |
| 7:DU:731:LEU:HD13 | 7:DU:740:LEU:HD22 | 1.96        | 0.47     |
| 8:BY:830:A:O2'    | 8:BY:831:A:H5'    | 2.15        | 0.47     |
| 5:AE:624:TYR:HE2  | 7:AG:759:MET:HG2  | 1.80        | 0.47     |
| 5:BS:679:LEU:HD23 | 6:BT:571:TYR:HB2  | 1.95        | 0.47     |
| 3:CC:359:PHE:CB   | 3:CC:365:MET:CG   | 2.86        | 0.47     |
| 2:AI:207:LEU:HB3  | 2:AI:232:VAL:HG11 | 1.96        | 0.47     |
| 4:AR:80:ALA:CB    | 4:AR:81:PRO:CD    | 2.61        | 0.47     |
| 7:DN:758:GLY:HA2  | 5:DS:630:ARG:HH21 | 1.79        | 0.47     |
| 4:DD:58:LEU:CD1   | 4:DD:61:VAL:HG12  | 2.44        | 0.47     |
| 2:BB:210:LEU:O    | 2:BB:213:GLU:HG2  | 2.14        | 0.47     |
| 7:AN:704:ALA:HB1  | 7:AN:706:PRO:HD2  | 1.96        | 0.47     |
| 6:AM:514:LEU:CD2  | 6:AM:514:LEU:C    | 2.82        | 0.47     |
| 2:AI:274:LEU:HD12 | 2:AI:275:PRO:N    | 2.29        | 0.47     |
| 7:AU:721:LEU:C    | 7:AU:768:ILE:CD1  | 2.82        | 0.47     |
| 1:BH:173:ARG:CD   | 4:BK:68:ILE:O     | 2.61        | 0.47     |
| 4:CK:5:VAL:N      | 4:CK:6:PRO:CD     | 2.78        | 0.47     |
| 7:CG:709:LEU:HD11 | 7:CG:713:MET:SD   | 2.54        | 0.47     |
| 6:AF:585:ARG:O    | 6:AF:585:ARG:HG3  | 2.14        | 0.47     |
| 2:AI:249:ASN:ND2  | 2:AI:249:ASN:O    | 2.48        | 0.47     |
| 8:DX:821:G:H5''   | 8:DX:821:G:H8     | 1.79        | 0.47     |
| 4:AR:82:MET:HE1   | 4:AR:84:LYS:HD2   | 1.95        | 0.47     |
| 6:CF:561:GLU:O    | 6:CF:562:VAL:CG2  | 2.60        | 0.47     |
| 5:BE:684:ILE:HD13 | 5:BE:687:LEU:HD21 | 1.96        | 0.47     |
| 4:BK:28:TYR:CE2   | 7:BN:769:MET:HE1  | 2.50        | 0.47     |
| 3:DC:407:ILE:HG23 | 6:DF:568:ASN:ND2  | 2.29        | 0.47     |
| 4:AK:20:CYS:CB    | 4:AK:71:LEU:CD2   | 2.91        | 0.47     |
| 4:AK:20:CYS:HB2   | 4:AK:71:LEU:CD2   | 2.44        | 0.47     |
| 5:CE:661:ALA:O    | 5:CE:674:LEU:N    | 2.41        | 0.47     |
| 5:CE:684:ILE:HD13 | 5:CE:687:LEU:HD21 | 1.95        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:BI:237:ASN:HD21 | 8:BX:835:U:H3     | 1.60        | 0.47     |
| 6:DM:507:PRO:O    | 6:DM:511:LEU:HG   | 2.15        | 0.47     |
| 7:BN:709:LEU:O    | 7:BN:713:MET:HB2  | 2.13        | 0.47     |
| 6:AF:539:TYR:CD1  | 8:AV:837:G:C6     | 3.02        | 0.47     |
| 8:AV:839:C:HO2'   | 8:AV:840:A:H5'    | 1.76        | 0.47     |
| 5:BS:629:SER:O    | 5:BS:630:ARG:HB2  | 2.13        | 0.47     |
| 7:BU:740:LEU:HD12 | 7:BU:740:LEU:N    | 2.29        | 0.47     |
| 5:CS:651:ASP:HB3  | 6:CT:507:PRO:HG3  | 1.97        | 0.47     |
| 7:DG:709:LEU:HD22 | 7:DG:734:PHE:HB3  | 1.97        | 0.47     |
| 7:DG:709:LEU:CD2  | 7:DG:734:PHE:HB3  | 2.43        | 0.47     |
| 2:CI:245:MET:HE2  | 2:CI:258:LEU:HD22 | 1.96        | 0.47     |
| 2:AB:212:HIS:C    | 2:AB:228:THR:HG23 | 2.35        | 0.47     |
| 1:BA:169:LEU:HG   | 4:BD:73:LEU:HD12  | 1.96        | 0.47     |
| 5:AE:640:ASN:CG   | 5:AE:640:ASN:O    | 2.52        | 0.47     |
| 6:CT:550:TYR:HA   | 6:CT:555:LEU:HA   | 1.96        | 0.47     |
| 5:AE:663:GLU:C    | 5:AE:664:ILE:HD13 | 2.35        | 0.47     |
| 3:BC:316:LEU:N    | 3:BC:316:LEU:CD2  | 2.77        | 0.47     |
| 2:BP:213:GLU:HB3  | 2:BP:271:PRO:CG   | 2.44        | 0.47     |
| 1:AA:116:ARG:HB2  | 1:AA:184:GLY:HA3  | 1.97        | 0.47     |
| 3:BJ:346:CYS:SG   | 3:BJ:352:LEU:HD12 | 2.55        | 0.47     |
| 1:DH:183:GLU:O    | 1:DH:183:GLU:HG3  | 2.14        | 0.47     |
| 1:DH:132:LYS:HG3  | 1:DH:143:CYS:SG   | 2.54        | 0.47     |
| 3:DJ:408:VAL:HG13 | 6:DM:563:LEU:O    | 2.13        | 0.47     |
| 6:CM:539:TYR:O    | 6:CM:540:MET:HB2  | 2.15        | 0.47     |
| 3:DQ:374:TRP:CE2  | 3:DQ:391:ASN:ND2  | 2.82        | 0.47     |
| 5:DL:674:LEU:CD1  | 5:DL:677:ILE:HD11 | 2.42        | 0.47     |
| 6:DT:558:HIS:CA   | 6:DT:559:LEU:HD12 | 2.45        | 0.47     |
| 5:CS:651:ASP:O    | 5:CS:653:TYR:N    | 2.48        | 0.47     |
| 1:CH:170:VAL:HG12 | 1:CH:171:LEU:N    | 2.29        | 0.47     |
| 4:CK:65:GLY:HA2   | 4:CK:68:ILE:HD12  | 1.97        | 0.47     |
| 3:CC:377:VAL:HG11 | 3:CC:389:PRO:HA   | 1.96        | 0.47     |
| 7:DG:719:LEU:HD21 | 7:DG:740:LEU:HD13 | 1.96        | 0.47     |
| 7:DN:712:PHE:CD2  | 7:DN:717:LEU:HD21 | 2.48        | 0.47     |
| 1:CO:151:ILE:HG22 | 1:CO:152:LYS:N    | 2.30        | 0.47     |
| 3:AC:379:LYS:HA   | 3:AC:387:SER:HB3  | 1.96        | 0.47     |
| 1:BO:121:LEU:CD1  | 1:BO:127:PHE:CE1  | 2.98        | 0.47     |
| 5:AL:683:ASN:HB2  | 6:AM:570:LEU:HD22 | 1.97        | 0.47     |
| 4:CR:19:THR:HG21  | 4:CR:72:ILE:HD12  | 1.96        | 0.47     |
| 6:BM:575:VAL:HG12 | 6:BM:576:GLU:N    | 2.29        | 0.47     |
| 5:AL:635:LEU:HD11 | 5:AL:684:ILE:HG12 | 1.97        | 0.47     |
| 7:BG:706:PRO:O    | 7:BG:710:LYS:HG3  | 2.14        | 0.47     |
| 8:AY:801:G:H2'    | 8:AY:801:G:N3     | 2.29        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:BF:554:ALA:O    | 6:BF:556:SER:N    | 2.48        | 0.47     |
| 8:AY:819:U:O2'    | 8:AY:820:C:C5'    | 2.63        | 0.47     |
| 5:AS:647:ILE:O    | 5:AS:647:ILE:HG23 | 2.14        | 0.47     |
| 1:CH:183:GLU:HA   | 1:CH:183:GLU:OE1  | 2.14        | 0.47     |
| 7:AG:748:MET:HA   | 7:AG:752:GLY:O    | 2.14        | 0.47     |
| 3:DQ:412:ASN:ND2  | 3:DQ:414:LEU:HB2  | 2.29        | 0.47     |
| 3:AQ:333:THR:O    | 3:AQ:337:LYS:HG2  | 2.15        | 0.47     |
| 1:CO:109:MET:HE3  | 2:CP:239:HIS:NE2  | 2.30        | 0.47     |
| 7:BG:742:ILE:HB   | 7:BG:760:VAL:CG1  | 2.45        | 0.47     |
| 3:CJ:407:ILE:HG23 | 6:CM:568:ASN:CG   | 2.35        | 0.47     |
| 6:CM:541:ASN:HA   | 6:CM:566:CYS:HB2  | 1.97        | 0.47     |
| 3:AC:342:VAL:HG11 | 3:AC:356:VAL:HG23 | 1.95        | 0.47     |
| 3:BQ:358:ALA:HB3  | 3:BQ:366:VAL:HB   | 1.96        | 0.47     |
| 2:BI:220:LYS:HG2  | 3:BJ:347:ARG:NH2  | 2.29        | 0.47     |
| 8:BX:840:A:C2     | 8:BX:841:G:C8     | 3.02        | 0.47     |
| 5:AS:641:MET:C    | 5:AS:642:ARG:CG   | 2.82        | 0.47     |
| 8:CV:863:G:H2'    | 8:CV:864:A:C8     | 2.49        | 0.47     |
| 7:CU:768:ILE:HG22 | 7:CU:769:MET:HE2  | 1.96        | 0.47     |
| 5:DS:677:ILE:HG22 | 5:DS:678:MET:N    | 2.28        | 0.47     |
| 7:AN:712:PHE:HB3  | 7:AN:717:LEU:HD11 | 1.95        | 0.47     |
| 2:AB:206:PHE:HA   | 2:AB:276:LEU:HD12 | 1.93        | 0.47     |
| 2:BB:274:LEU:HD21 | 2:BB:291:LYS:HA   | 1.96        | 0.47     |
| 7:CN:705:HIS:CD2  | 7:CN:736:PRO:HG3  | 2.50        | 0.47     |
| 1:CA:118:ARG:HH12 | 1:CA:128:ILE:HD11 | 1.75        | 0.47     |
| 1:CA:181:THR:HG22 | 2:CB:258:LEU:HA   | 1.96        | 0.47     |
| 3:DQ:332:LEU:HD11 | 6:DT:563:LEU:HD23 | 1.92        | 0.47     |
| 2:AI:260:ILE:HG22 | 2:AI:261:ARG:O    | 2.15        | 0.47     |
| 1:DO:173:ARG:CZ   | 8:DY:834:U:O2     | 2.63        | 0.47     |
| 3:BJ:390:VAL:HG13 | 3:BJ:391:ASN:H    | 1.79        | 0.47     |
| 8:DX:847:A:H2'    | 8:DX:848:U:H5'    | 1.96        | 0.47     |
| 4:BR:5:VAL:N      | 4:BR:6:PRO:CD     | 2.76        | 0.47     |
| 2:BB:215:VAL:CG1  | 2:BB:271:PRO:HG3  | 2.45        | 0.47     |
| 8:DX:803:C:O2'    | 8:DX:804:G:N7     | 2.45        | 0.47     |
| 8:CY:821:G:H3'    | 8:CY:822:G:H5''   | 1.96        | 0.47     |
| 3:DJ:326:THR:HB   | 3:DJ:330:SER:HB2  | 1.96        | 0.47     |
| 6:DF:547:THR:CG2  | 6:DF:562:VAL:HG21 | 2.32        | 0.47     |
| 4:BK:63:ILE:HD13  | 7:BN:769:MET:HE2  | 1.95        | 0.47     |
| 5:DE:641:MET:C    | 5:DE:642:ARG:HG3  | 2.35        | 0.47     |
| 5:DE:642:ARG:HH21 | 5:DE:664:ILE:CG2  | 2.28        | 0.47     |
| 2:DP:206:PHE:CZ   | 2:DP:276:LEU:HD23 | 2.40        | 0.47     |
| 5:CE:674:LEU:HB2  | 5:CE:677:ILE:HD11 | 1.96        | 0.47     |
| 8:CX:811:C:H2'    | 8:CX:812:U:O4'    | 2.15        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:DQ:326:THR:HG22 | 3:DQ:326:THR:O    | 2.15        | 0.47     |
| 6:BM:547:THR:HG21 | 6:BM:562:VAL:CG2  | 2.45        | 0.47     |
| 6:BM:539:TYR:CE1  | 8:BX:837:G:C5     | 3.02        | 0.47     |
| 5:CL:636:TYR:HB3  | 5:CL:686:LEU:HB2  | 1.96        | 0.47     |
| 3:CC:332:LEU:HA   | 3:CC:359:PHE:CZ   | 2.49        | 0.47     |
| 7:BU:738:MET:CB   | 7:BU:764:GLY:HA3  | 2.45        | 0.47     |
| 2:CB:274:LEU:O    | 2:CB:290:LYS:NZ   | 2.48        | 0.47     |
| 6:CT:570:LEU:HD23 | 6:CT:571:TYR:HD2  | 1.80        | 0.47     |
| 4:AR:46:ILE:HG12  | 4:AR:61:VAL:CG1   | 2.45        | 0.47     |
| 2:CI:207:LEU:HD13 | 2:CI:236:MET:CG   | 2.39        | 0.47     |
| 1:BO:137:HIS:NE2  | 8:BY:834:U:H3'    | 2.30        | 0.47     |
| 3:BC:408:VAL:HG11 | 6:BF:562:VAL:HG13 | 1.97        | 0.47     |
| 3:BC:349:ASN:OD1  | 6:BF:525:TRP:CZ3  | 2.68        | 0.47     |
| 3:BC:406:VAL:HG12 | 6:BF:565:ARG:HG3  | 1.94        | 0.47     |
| 2:BB:274:LEU:HD11 | 2:BB:290:LYS:O    | 2.15        | 0.47     |
| 6:BF:511:LEU:CD2  | 6:BF:536:VAL:HG11 | 2.33        | 0.47     |
| 3:DJ:372:GLU:HG3  | 3:DJ:372:GLU:O    | 2.13        | 0.47     |
| 7:BN:774:GLU:O    | 7:BN:775:ARG:CG   | 2.63        | 0.47     |
| 3:DQ:327:GLY:HA3  | 6:DT:535:SER:OG   | 2.14        | 0.47     |
| 8:CV:833:U:H6     | 8:CV:833:U:H5'    | 1.78        | 0.47     |
| 2:AB:211:SER:HB3  | 2:BB:212:HIS:CG   | 2.50        | 0.47     |
| 2:AB:212:HIS:CG   | 2:BB:211:SER:CB   | 2.98        | 0.47     |
| 8:DY:838:A:O3'    | 8:DY:839:C:O4'    | 2.33        | 0.47     |
| 6:BF:518:PRO:O    | 6:BF:519:VAL:CG1  | 2.62        | 0.47     |
| 2:CB:295:VAL:CG2  | 2:CB:295:VAL:O    | 2.60        | 0.47     |
| 5:DL:663:GLU:O    | 5:DL:671:ARG:CB   | 2.60        | 0.47     |
| 8:AX:813:G:C5     | 8:AX:817:A:C6     | 3.02        | 0.47     |
| 8:AX:813:G:C6     | 8:AX:817:A:N6     | 2.83        | 0.47     |
| 7:CN:742:ILE:HB   | 7:CN:760:VAL:CG1  | 2.45        | 0.47     |
| 1:BO:121:LEU:HG   | 1:BO:127:PHE:CE1  | 2.50        | 0.47     |
| 4:AK:63:ILE:CD1   | 7:AN:769:MET:HE2  | 2.43        | 0.47     |
| 5:CE:616:GLN:OE1  | 5:CE:616:GLN:N    | 2.48        | 0.47     |
| 8:CV:825:U:H6     | 8:CV:825:U:O5'    | 1.97        | 0.47     |
| 2:AI:271:PRO:O    | 3:AJ:398:LYS:HD2  | 2.14        | 0.47     |
| 3:CC:370:VAL:CG1  | 3:CC:399:MET:HE1  | 2.44        | 0.47     |
| 4:CD:12:GLU:HA    | 4:CD:12:GLU:OE1   | 2.14        | 0.47     |
| 1:CH:108:LYS:HD2  | 2:CI:239:HIS:CD2  | 2.50        | 0.47     |
| 2:BB:230:THR:OG1  | 2:BB:239:HIS:O    | 2.21        | 0.47     |
| 8:AV:863:G:H2'    | 8:AV:864:A:H8     | 1.79        | 0.47     |
| 4:BD:33:ILE:HB    | 4:BD:42:GLN:O     | 2.15        | 0.47     |
| 4:BD:20:CYS:HA    | 4:BD:71:LEU:HD23  | 1.96        | 0.47     |
| 1:CH:116:ARG:HB2  | 1:CH:184:GLY:O    | 2.15        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:CP:212:HIS:O    | 2:CP:212:HIS:HD2  | 1.98        | 0.47     |
| 6:AM:511:LEU:HD12 | 6:AM:512:ASN:N    | 2.29        | 0.47     |
| 5:BL:629:SER:O    | 5:BL:630:ARG:HB3  | 2.15        | 0.47     |
| 2:BP:213:GLU:HA   | 2:BP:213:GLU:OE1  | 2.15        | 0.47     |
| 2:BI:295:VAL:O    | 2:BI:296:ALA:HB2  | 2.14        | 0.47     |
| 5:BS:626:GLN:HB2  | 5:BS:650:PHE:HZ   | 1.80        | 0.47     |
| 4:BK:46:ILE:HD11  | 4:BK:58:LEU:HB2   | 1.96        | 0.47     |
| 5:CS:666:SER:C    | 5:CS:668:THR:H    | 2.18        | 0.47     |
| 8:DV:820:C:H6     | 8:DV:820:C:O5'    | 1.96        | 0.47     |
| 3:DC:410:LEU:HD22 | 6:DF:562:VAL:HG22 | 1.97        | 0.47     |
| 5:BL:654:MET:SD   | 7:BN:763:ARG:HD2  | 2.55        | 0.47     |
| 3:CQ:349:ASN:HB3  | 3:CQ:375:THR:HB   | 1.96        | 0.47     |
| 3:CQ:410:LEU:HD22 | 6:CT:562:VAL:HG22 | 1.79        | 0.47     |
| 2:CB:203:LEU:HD13 | 3:CC:358:ALA:CB   | 2.41        | 0.47     |
| 2:AI:229:ILE:HG22 | 2:AI:230:THR:N    | 2.29        | 0.47     |
| 7:CU:709:LEU:HD22 | 7:CU:734:PHE:HB3  | 1.96        | 0.47     |
| 5:DS:674:LEU:HB2  | 5:DS:677:ILE:CD1  | 2.43        | 0.47     |
| 1:CH:169:LEU:HD12 | 1:CH:170:VAL:H    | 1.80        | 0.47     |
| 2:BI:280:LEU:HD22 | 2:BI:286:LYS:CG   | 2.44        | 0.47     |
| 1:BO:139:ASN:OD1  | 1:BO:174:GLY:N    | 2.46        | 0.47     |
| 2:AB:202:LYS:NZ   | 8:AV:801:G:O6     | 2.45        | 0.47     |
| 7:DG:709:LEU:CD1  | 7:DG:734:PHE:HB3  | 2.44        | 0.47     |
| 5:DE:679:LEU:HD23 | 6:DF:571:TYR:HB2  | 1.97        | 0.47     |
| 4:AD:86:MET:O     | 4:AD:89:LYS:HG2   | 2.15        | 0.47     |
| 3:AC:327:GLY:O    | 3:AC:330:SER:OG   | 2.30        | 0.47     |
| 1:DA:132:LYS:HG3  | 1:DA:143:CYS:SG   | 2.55        | 0.47     |
| 6:AM:539:TYR:CE1  | 6:AM:566:CYS:HB3  | 2.49        | 0.47     |
| 1:BO:115:TYR:CE2  | 1:BO:185:PRO:CB   | 2.98        | 0.47     |
| 8:AV:819:U:H2'    | 8:AV:820:C:O4'    | 2.14        | 0.47     |
| 7:AG:718:SER:O    | 7:AG:771:GLU:N    | 2.33        | 0.47     |
| 3:AJ:324:PHE:CD1  | 3:AJ:325:ASN:HB3  | 2.50        | 0.47     |
| 8:AV:804:G:H8     | 8:AV:804:G:O5'    | 1.96        | 0.47     |
| 8:CV:850:G:O2'    | 8:CV:851:G:H5'    | 2.14        | 0.47     |
| 3:CJ:389:PRO:O    | 3:CJ:390:VAL:CG1  | 2.63        | 0.47     |
| 3:BJ:349:ASN:C    | 3:BJ:349:ASN:OD1  | 2.53        | 0.47     |
| 2:DP:245:MET:O    | 2:DP:252:PRO:HA   | 2.14        | 0.47     |
| 3:BQ:382:LYS:C    | 3:BQ:384:LYS:H    | 2.18        | 0.47     |
| 7:CU:708:GLU:OE2  | 7:CU:738:MET:SD   | 2.72        | 0.47     |
| 3:AQ:328:PRO:CB   | 6:AT:563:LEU:HD11 | 2.34        | 0.47     |
| 7:BN:719:LEU:HD22 | 7:BN:762:ILE:HD12 | 1.95        | 0.47     |
| 6:CM:539:TYR:HB3  | 6:CM:541:ASN:ND2  | 2.30        | 0.47     |
| 8:AV:846:U:O5'    | 8:AV:846:U:H6     | 1.97        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:BF:521:VAL:CG1  | 6:BF:522:LYS:N    | 2.77        | 0.47     |
| 3:DQ:370:VAL:CB   | 3:DQ:399:MET:CE   | 2.84        | 0.47     |
| 3:BC:357:LYS:HB3  | 3:BC:366:VAL:O    | 2.15        | 0.47     |
| 7:AU:719:LEU:HD21 | 7:AU:740:LEU:HD12 | 1.93        | 0.47     |
| 1:AA:180:MET:C    | 2:AB:258:LEU:HD12 | 2.33        | 0.47     |
| 1:CH:152:LYS:HE3  | 8:CX:848:U:O2     | 2.15        | 0.47     |
| 1:BO:121:LEU:HD11 | 1:BO:127:PHE:CZ   | 2.50        | 0.47     |
| 1:AO:150:LYS:O    | 1:AO:151:ILE:HD13 | 2.15        | 0.47     |
| 3:BQ:392:LYS:CE   | 8:BV:868:G:H2'    | 2.45        | 0.47     |
| 1:CO:136:LYS:CD   | 8:CY:801:G:H1'    | 2.44        | 0.47     |
| 2:DP:265:ILE:HG22 | 2:DP:266:ARG:N    | 2.30        | 0.47     |
| 5:DS:646:CYS:O    | 5:DS:648:ILE:CD1  | 2.62        | 0.47     |
| 5:DL:655:ASN:ND2  | 8:DX:831:A:N1     | 2.63        | 0.47     |
| 8:BY:805:U:H2'    | 8:BY:806:G:O4'    | 2.14        | 0.47     |
| 6:DT:566:CYS:O    | 6:DT:567:ASN:C    | 2.53        | 0.47     |
| 1:DO:182:VAL:O    | 1:DO:182:VAL:HG12 | 2.15        | 0.47     |
| 4:DD:5:VAL:HB     | 4:DD:6:PRO:HD3    | 1.96        | 0.47     |
| 2:DI:251:GLU:OE1  | 2:DI:251:GLU:N    | 2.48        | 0.47     |
| 1:AH:193:ALA:O    | 1:AH:194:ARG:C    | 2.52        | 0.47     |
| 8:DX:838:A:O2'    | 8:DX:839:C:C5'    | 2.63        | 0.47     |
| 1:CO:119:CYS:SG   | 1:CO:180:MET:HE3  | 2.55        | 0.47     |
| 5:BL:635:LEU:CD1  | 5:BL:684:ILE:HG23 | 2.45        | 0.47     |
| 5:CL:655:ASN:OD1  | 5:CL:681:GLY:N    | 2.43        | 0.47     |
| 6:CF:523:LEU:CD1  | 6:CF:529:TYR:CE1  | 2.98        | 0.47     |
| 8:AV:849:G:C5     | 8:AV:850:G:N7     | 2.83        | 0.47     |
| 5:AE:635:LEU:CD1  | 5:AE:687:LEU:HD21 | 2.44        | 0.47     |
| 5:AE:688:GLN:OE1  | 7:AG:757:ILE:HG13 | 2.14        | 0.47     |
| 6:BT:507:PRO:O    | 6:BT:511:LEU:HG   | 2.15        | 0.47     |
| 2:AB:237:ASN:ND2  | 8:AV:835:U:H3     | 2.13        | 0.47     |
| 2:CB:265:ILE:HG22 | 3:CC:402:ARG:HB2  | 1.97        | 0.47     |
| 1:DA:179:SER:HB3  | 2:DB:258:LEU:CG   | 2.45        | 0.47     |
| 7:CU:743:ASP:HA   | 7:CU:758:GLY:O    | 2.15        | 0.47     |
| 1:BO:181:THR:CB   | 2:BP:258:LEU:HD13 | 2.27        | 0.47     |
| 2:BI:286:LYS:HE3  | 2:BI:290:LYS:NZ   | 2.30        | 0.47     |
| 8:AX:866:U:OP2    | 8:AX:867:G:OP1    | 2.33        | 0.47     |
| 7:CG:725:ARG:CD   | 7:CG:749:ALA:HB2  | 2.43        | 0.47     |
| 5:CS:688:GLN:NE2  | 7:CU:757:ILE:HG13 | 2.30        | 0.47     |
| 2:BI:207:LEU:CD1  | 2:BI:236:MET:CE   | 2.93        | 0.47     |
| 7:DN:729:GLY:HA3  | 7:DN:742:ILE:CG2  | 2.45        | 0.47     |
| 4:DK:48:VAL:HG12  | 4:DK:56:ALA:O     | 2.14        | 0.47     |
| 4:BK:19:THR:HB    | 4:BK:72:ILE:HB    | 1.96        | 0.47     |
| 5:AE:656:LEU:HB3  | 5:AE:658:LEU:HD21 | 1.95        | 0.47     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:DL:648:ILE:HG22 | 5:DL:648:ILE:O    | 2.15        | 0.47     |
| 4:BR:47:THR:HG23  | 4:BR:57:GLN:CD    | 2.34        | 0.47     |
| 4:BD:19:THR:HB    | 4:BD:72:ILE:HD12  | 1.97        | 0.47     |
| 1:BO:115:TYR:HA   | 1:BO:186:PRO:HD2  | 1.95        | 0.47     |
| 8:BY:816:A:C2     | 8:BY:817:A:H1'    | 2.50        | 0.47     |
| 8:AY:863:G:O2'    | 8:AY:864:A:H5'    | 2.15        | 0.47     |
| 1:AO:182:VAL:CG2  | 2:AP:257:THR:CG2  | 2.93        | 0.47     |
| 8:BY:853:A:C2'    | 8:BY:854:A:O5'    | 2.63        | 0.47     |
| 7:AG:731:LEU:HD11 | 7:AG:733:GLY:O    | 2.15        | 0.47     |
| 6:CF:517:LYS:HG2  | 6:CF:518:PRO:HD2  | 1.97        | 0.47     |
| 6:CM:540:MET:CG   | 8:CX:831:A:C2     | 2.99        | 0.46     |
| 7:DG:729:GLY:CA   | 7:DG:742:ILE:CG2  | 2.85        | 0.46     |
| 2:DP:205:ARG:HA   | 2:DP:208:MET:SD   | 2.55        | 0.46     |
| 6:CF:521:VAL:HG13 | 6:CF:571:TYR:O    | 2.16        | 0.46     |
| 6:BM:539:TYR:CD2  | 6:BM:566:CYS:HB3  | 2.51        | 0.46     |
| 6:BM:533:LEU:HD12 | 6:BM:543:GLN:O    | 2.15        | 0.46     |
| 5:BS:677:ILE:HG22 | 5:BS:678:MET:N    | 2.31        | 0.46     |
| 1:DA:118:ARG:HG3  | 1:DA:126:ILE:CG2  | 2.45        | 0.46     |
| 7:CU:721:LEU:CD2  | 7:CU:767:ILE:HD13 | 2.46        | 0.46     |
| 1:DO:169:LEU:O    | 4:DR:73:LEU:N     | 2.47        | 0.46     |
| 2:DB:203:LEU:HD21 | 3:DC:400:PHE:CE2  | 2.50        | 0.46     |
| 2:DB:210:LEU:HD21 | 2:DB:279:LEU:CD1  | 2.46        | 0.46     |
| 2:AB:212:HIS:CG   | 2:BB:211:SER:HB2  | 2.50        | 0.46     |
| 2:BI:262:GLY:O    | 2:BI:265:ILE:HD12 | 2.15        | 0.46     |
| 4:AR:48:VAL:CG1   | 4:AR:56:ALA:HB3   | 2.45        | 0.46     |
| 7:BN:717:LEU:HA   | 7:BN:771:GLU:O    | 2.14        | 0.46     |
| 7:AU:721:LEU:HD21 | 7:AU:767:ILE:HD13 | 1.98        | 0.46     |
| 3:BC:332:LEU:HB3  | 3:BC:359:PHE:CE2  | 2.50        | 0.46     |
| 2:DP:247:LEU:CD2  | 2:DP:249:ASN:N    | 2.77        | 0.46     |
| 4:BD:19:THR:HG23  | 4:BD:29:ARG:HG2   | 1.97        | 0.46     |
| 2:AB:205:ARG:CD   | 2:AB:278:THR:OG1  | 2.63        | 0.46     |
| 4:CD:42:GLN:HG3   | 4:CD:60:GLN:HE21  | 1.80        | 0.46     |
| 1:CA:108:LYS:O    | 1:CA:112:HIS:ND1  | 2.47        | 0.46     |
| 2:DI:213:GLU:O    | 2:DI:228:THR:HA   | 2.15        | 0.46     |
| 7:BU:726:HIS:HB3  | 7:BU:748:MET:HE2  | 1.97        | 0.46     |
| 7:CU:737:PHE:HE1  | 8:CY:833:U:H5''   | 1.80        | 0.46     |
| 8:BY:824:A:H2'    | 8:BY:825:U:C6     | 2.50        | 0.46     |
| 3:CQ:412:ASN:HB3  | 3:CQ:413:PRO:HD3  | 1.98        | 0.46     |
| 3:BJ:350:LYS:HG2  | 3:BJ:374:TRP:HB2  | 1.95        | 0.46     |
| 6:AF:577:GLU:O    | 6:AF:580:GLU:N    | 2.48        | 0.46     |
| 6:DM:524:LYS:CB   | 8:DX:838:A:H61    | 2.27        | 0.46     |
| 3:AJ:407:ILE:HA   | 6:AM:568:ASN:HD21 | 1.80        | 0.46     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:DC:407:ILE:HG22 | 3:DC:408:VAL:HG23 | 1.97        | 0.46     |
| 5:AS:629:SER:O    | 5:AS:630:ARG:HB2  | 2.16        | 0.46     |
| 7:DG:760:VAL:O    | 7:DG:760:VAL:HG13 | 2.15        | 0.46     |
| 6:CF:521:VAL:HG21 | 6:CF:572:ILE:HD12 | 1.97        | 0.46     |
| 7:DU:737:PHE:CE1  | 8:DY:833:U:H5'    | 2.47        | 0.46     |
| 8:AV:846:U:C4     | 8:AV:858:A:C5     | 3.03        | 0.46     |
| 2:BP:236:MET:CE   | 3:BQ:364:ASN:ND2  | 2.79        | 0.46     |
| 3:AQ:391:ASN:CG   | 3:AQ:392:LYS:H    | 2.18        | 0.46     |
| 8:AV:867:G:H5'    | 8:AV:867:G:H8     | 1.80        | 0.46     |
| 3:CC:407:ILE:HA   | 6:CF:568:ASN:HD21 | 1.80        | 0.46     |
| 5:DS:662:GLU:HG2  | 5:DS:673:GLN:HB2  | 1.97        | 0.46     |
| 5:DS:674:LEU:CG   | 5:DS:677:ILE:HD11 | 2.44        | 0.46     |
| 1:DO:170:VAL:HG12 | 1:DO:171:LEU:H    | 1.80        | 0.46     |
| 2:CI:229:ILE:HG12 | 2:CI:240:LEU:HD21 | 1.96        | 0.46     |
| 1:BO:135:ASP:OD1  | 1:BO:139:ASN:N    | 2.49        | 0.46     |
| 1:BA:138:MET:HG2  | 8:BV:835:U:C4     | 2.50        | 0.46     |
| 2:BB:267:TYR:CB   | 3:BC:400:PHE:O    | 2.62        | 0.46     |
| 8:BV:836:U:H6     | 8:BV:836:U:C5'    | 2.26        | 0.46     |
| 4:CR:50:TYR:HE1   | 4:CR:56:ALA:CB    | 2.28        | 0.46     |
| 3:BC:377:VAL:HA   | 3:BC:389:PRO:O    | 2.14        | 0.46     |
| 4:DK:77:LEU:O     | 4:DK:81:PRO:HD2   | 2.15        | 0.46     |
| 2:AI:218:GLU:HG3  | 2:AI:223:THR:O    | 2.15        | 0.46     |
| 3:AC:394:ARG:CZ   | 3:AC:396:ILE:HD11 | 2.45        | 0.46     |
| 8:CX:848:U:H2'    | 8:CX:849:G:C5'    | 2.44        | 0.46     |
| 1:AO:152:LYS:NZ   | 8:CY:814:A:H8     | 2.07        | 0.46     |
| 7:AN:709:LEU:HD22 | 7:AN:734:PHE:HB3  | 1.97        | 0.46     |
| 3:DQ:347:ARG:HD2  | 3:DQ:405:SER:HB2  | 1.97        | 0.46     |
| 6:DT:514:LEU:HD13 | 6:DT:572:ILE:HD13 | 1.97        | 0.46     |
| 4:AD:19:THR:HB    | 4:AD:72:ILE:HD12  | 1.96        | 0.46     |
| 2:AI:267:TYR:HB3  | 3:AJ:401:LEU:HA   | 1.95        | 0.46     |
| 1:CA:114:ASP:CG   | 4:CD:87:LYS:HE2   | 2.35        | 0.46     |
| 3:AQ:406:VAL:HG12 | 6:AT:565:ARG:HG3  | 1.97        | 0.46     |
| 5:BS:631:ILE:HG22 | 5:BS:632:GLN:O    | 2.15        | 0.46     |
| 8:BY:833:U:H6     | 8:BY:833:U:H5'    | 1.79        | 0.46     |
| 5:DS:648:ILE:HD12 | 5:DS:648:ILE:N    | 2.30        | 0.46     |
| 6:AM:549:GLU:CG   | 6:AM:549:GLU:O    | 2.63        | 0.46     |
| 4:BD:23:ASN:N     | 4:BD:23:ASN:OD1   | 2.49        | 0.46     |
| 5:DL:643:ILE:HA   | 5:DL:662:GLU:O    | 2.15        | 0.46     |
| 8:AV:824:A:H2'    | 8:AV:825:U:C6     | 2.50        | 0.46     |
| 6:DM:524:LYS:CB   | 8:DX:838:A:N6     | 2.79        | 0.46     |
| 6:DM:562:VAL:HG12 | 6:DM:563:LEU:N    | 2.30        | 0.46     |
| 1:CO:137:HIS:CE1  | 8:CY:834:U:H2'    | 2.50        | 0.46     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:BN:719:LEU:CD2  | 7:BN:762:ILE:CD1  | 2.93        | 0.46     |
| 4:AK:20:CYS:HB2   | 4:AK:71:LEU:HD22  | 1.96        | 0.46     |
| 2:AI:280:LEU:CD2  | 2:AI:286:LYS:HD3  | 2.41        | 0.46     |
| 5:CE:621:ILE:HG21 | 7:CG:741:VAL:CG2  | 2.45        | 0.46     |
| 7:DU:709:LEU:HD12 | 7:DU:709:LEU:N    | 2.30        | 0.46     |
| 5:BS:639:VAL:O    | 5:BS:640:ASN:HB2  | 2.14        | 0.46     |
| 2:BP:276:LEU:HB2  | 2:BP:290:LYS:HG3  | 1.97        | 0.46     |
| 2:BP:280:LEU:HD23 | 2:BP:286:LYS:HE2  | 1.82        | 0.46     |
| 1:CH:173:ARG:NH2  | 8:CX:834:U:O2     | 2.47        | 0.46     |
| 6:BF:539:TYR:O    | 6:BF:566:CYS:HB3  | 2.15        | 0.46     |
| 2:BB:232:VAL:CG2  | 2:BB:238:THR:HG23 | 2.45        | 0.46     |
| 6:DF:514:LEU:O    | 6:DF:517:LYS:HG2  | 2.16        | 0.46     |
| 8:DV:814:A:H2'    | 8:DV:815:A:C8     | 2.49        | 0.46     |
| 3:BJ:366:VAL:HG22 | 3:BJ:400:PHE:CD2  | 2.50        | 0.46     |
| 6:BT:567:ASN:OD1  | 6:BT:568:ASN:N    | 2.48        | 0.46     |
| 8:BV:849:G:H1'    | 8:DX:814:A:H61    | 1.80        | 0.46     |
| 4:DD:38:ASN:ND2   | 8:DV:833:U:C4     | 2.84        | 0.46     |
| 4:BR:20:CYS:SG    | 4:BR:68:ILE:HG23  | 2.55        | 0.46     |
| 8:BY:815:A:H2'    | 8:BY:816:A:O4'    | 2.15        | 0.46     |
| 4:BR:6:PRO:O      | 4:BR:9:VAL:HG12   | 2.16        | 0.46     |
| 2:CP:206:PHE:CE1  | 2:CP:279:LEU:CB   | 2.98        | 0.46     |
| 3:DC:377:VAL:O    | 3:DC:377:VAL:HG23 | 2.15        | 0.46     |
| 3:CJ:324:PHE:O    | 3:CJ:325:ASN:OD1  | 2.34        | 0.46     |
| 6:DF:548:GLU:OE1  | 6:DF:555:LEU:HD11 | 2.16        | 0.46     |
| 2:CI:275:PRO:C    | 2:CI:276:LEU:HD23 | 2.35        | 0.46     |
| 3:CJ:347:ARG:NH2  | 8:CX:838:A:H1'    | 2.31        | 0.46     |
| 6:CF:520:MET:CG   | 6:CF:575:VAL:HG22 | 2.45        | 0.46     |
| 6:AF:561:GLU:O    | 6:AF:562:VAL:HG23 | 2.15        | 0.46     |
| 2:BP:277:ASP:H    | 2:BP:290:LYS:HD2  | 1.81        | 0.46     |
| 6:CF:565:ARG:NE   | 8:CV:837:G:N2     | 2.63        | 0.46     |
| 2:AI:279:LEU:HD12 | 2:AI:279:LEU:C    | 2.36        | 0.46     |
| 2:DB:229:ILE:HG23 | 2:DB:240:LEU:HD23 | 1.97        | 0.46     |
| 1:DO:167:LEU:HD22 | 4:DR:72:ILE:HD11  | 1.98        | 0.46     |
| 1:CH:121:LEU:HA   | 1:CH:176:ASN:O    | 2.15        | 0.46     |
| 5:DS:632:GLN:O    | 5:DS:633:VAL:CG2  | 2.63        | 0.46     |
| 4:AK:58:LEU:HD22  | 7:AN:773:LEU:HD21 | 1.96        | 0.46     |
| 1:CA:181:THR:HG21 | 2:CB:255:LEU:HD12 | 1.96        | 0.46     |
| 3:DQ:328:PRO:HG3  | 6:DT:543:GLN:HB2  | 1.98        | 0.46     |
| 4:CD:38:ASN:CG    | 4:CD:40:ASN:ND2   | 2.68        | 0.46     |
| 4:CR:27:VAL:O     | 4:CR:48:VAL:HA    | 2.15        | 0.46     |
| 5:DE:674:LEU:HD22 | 6:DF:573:ARG:HD3  | 1.98        | 0.46     |
| 8:AX:856:C:N4     | 8:AX:857:U:C4     | 2.83        | 0.46     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:AO:116:ARG:HG2  | 1:AO:187:PRO:HG3  | 1.98        | 0.46     |
| 2:AB:269:ILE:HD11 | 3:AC:394:ARG:HH22 | 1.78        | 0.46     |
| 2:DI:274:LEU:CD2  | 2:DI:274:LEU:C    | 2.72        | 0.46     |
| 8:CV:804:G:N1     | 8:CV:826:U:H1'    | 2.30        | 0.46     |
| 8:DY:814:A:N6     | 8:DY:815:A:C6     | 2.83        | 0.46     |
| 2:CP:206:PHE:CE1  | 2:CP:279:LEU:HD12 | 2.50        | 0.46     |
| 8:CV:849:G:N2     | 8:CV:857:U:O2     | 2.48        | 0.46     |
| 7:CU:737:PHE:HB3  | 8:CY:832:U:N3     | 2.31        | 0.46     |
| 5:CS:671:ARG:NH1  | 8:CY:868:G:O2'    | 2.48        | 0.46     |
| 5:BS:683:ASN:O    | 5:BS:683:ASN:OD1  | 2.33        | 0.46     |
| 2:AB:227:GLY:HA2  | 2:AB:242:ALA:O    | 2.15        | 0.46     |
| 8:CX:863:G:H2'    | 8:CX:864:A:H8     | 1.80        | 0.46     |
| 2:DI:286:LYS:HD2  | 3:DJ:357:LYS:HZ3  | 1.78        | 0.46     |
| 7:BN:739:ASN:OD1  | 8:BX:832:U:O4     | 2.34        | 0.46     |
| 7:CG:741:VAL:HG22 | 7:CG:761:VAL:HA   | 1.96        | 0.46     |
| 1:AA:156:SER:HB3  | 1:AA:159:ALA:O    | 2.15        | 0.46     |
| 8:CV:847:A:N7     | 8:CV:858:A:C2     | 2.83        | 0.46     |
| 3:CC:358:ALA:O    | 3:CC:365:MET:HA   | 2.15        | 0.46     |
| 3:AJ:358:ALA:HB3  | 3:AJ:366:VAL:HG21 | 1.98        | 0.46     |
| 5:BE:655:ASN:ND2  | 8:BV:831:A:N1     | 2.53        | 0.46     |
| 3:BC:340:THR:OG1  | 3:BC:416:ALA:HB2  | 2.14        | 0.46     |
| 7:AN:772:ALA:O    | 7:AN:773:LEU:CB   | 2.63        | 0.46     |
| 5:DS:667:LYS:O    | 5:DS:668:THR:CB   | 2.64        | 0.46     |
| 4:DD:46:ILE:HD12  | 4:DD:46:ILE:C     | 2.36        | 0.46     |
| 1:DH:155:ASN:CB   | 1:DH:158:GLN:O    | 2.56        | 0.46     |
| 2:AB:212:HIS:HA   | 2:AB:228:THR:HG22 | 1.97        | 0.46     |
| 5:BL:632:GLN:NE2  | 5:BL:644:GLU:CG   | 2.78        | 0.46     |
| 1:BA:173:ARG:HH21 | 4:BD:66:SER:HA    | 1.80        | 0.46     |
| 2:CB:284:GLU:HB3  | 2:CB:285:PRO:CD   | 2.42        | 0.46     |
| 4:AK:40:ASN:HB3   | 4:AK:62:TYR:OH    | 2.15        | 0.46     |
| 7:DG:726:HIS:HB3  | 7:DG:748:MET:CE   | 2.45        | 0.46     |
| 1:DO:127:PHE:CE2  | 1:DO:172:LEU:HD13 | 2.51        | 0.46     |
| 3:BJ:336:VAL:HG21 | 3:BJ:357:LYS:O    | 2.15        | 0.46     |
| 1:DA:150:LYS:O    | 1:DA:164:LYS:HE2  | 2.14        | 0.46     |
| 3:DJ:334:GLN:OE1  | 3:DJ:418:LYS:OXT  | 2.32        | 0.46     |
| 3:CC:342:VAL:HG12 | 3:CC:343:LEU:N    | 2.31        | 0.46     |
| 3:DJ:410:LEU:CD2  | 6:DM:562:VAL:CG1  | 2.89        | 0.46     |
| 8:DX:842:U:H2'    | 8:DX:843:C:C5'    | 2.45        | 0.46     |
| 1:CO:137:HIS:CD2  | 8:CY:834:U:H3'    | 2.47        | 0.46     |
| 6:CM:565:ARG:HB3  | 8:CX:837:G:H21    | 1.81        | 0.46     |
| 5:CE:621:ILE:CG1  | 7:CG:741:VAL:CG2  | 2.93        | 0.46     |
| 6:BM:525:TRP:CE2  | 8:BX:839:C:O2     | 2.69        | 0.46     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:BB:274:LEU:N    | 2:BB:275:PRO:HD2  | 2.28        | 0.46     |
| 7:DG:737:PHE:CB   | 7:DG:739:ASN:HD21 | 2.28        | 0.46     |
| 1:DH:182:VAL:HG21 | 2:DI:257:THR:HG21 | 1.96        | 0.46     |
| 5:CE:686:LEU:HD11 | 7:CG:721:LEU:HD21 | 1.94        | 0.46     |
| 1:AA:108:LYS:O    | 1:AA:112:HIS:ND1  | 2.48        | 0.46     |
| 8:DY:837:G:O3'    | 8:DY:838:A:O4'    | 2.34        | 0.46     |
| 2:BI:202:LYS:CB   | 2:BI:281:VAL:HG21 | 2.45        | 0.46     |
| 4:CK:14:GLU:CA    | 4:CK:32:LEU:O     | 2.61        | 0.46     |
| 6:DM:506:ASN:CB   | 6:DM:509:PRO:HG2  | 2.43        | 0.46     |
| 4:AR:64:ARG:HB3   | 4:AR:67:LYS:HG2   | 1.97        | 0.46     |
| 8:BY:808:C:H2'    | 8:BY:809:G:C8     | 2.51        | 0.46     |
| 8:AY:851:G:C2     | 8:AY:853:A:P      | 3.09        | 0.46     |
| 5:BE:686:LEU:HD21 | 7:BG:721:LEU:CD2  | 2.43        | 0.46     |
| 5:AL:647:ILE:HG12 | 5:AL:648:ILE:N    | 2.31        | 0.46     |
| 1:BO:149:ARG:NH1  | 8:BY:860:G:OP2    | 2.49        | 0.46     |
| 2:AI:284:GLU:HB2  | 2:AI:285:PRO:HD3  | 1.95        | 0.46     |
| 8:AY:811:C:C4     | 8:AY:812:U:C5     | 3.04        | 0.46     |
| 2:BB:215:VAL:HG12 | 2:BB:269:ILE:O    | 2.15        | 0.46     |
| 1:CO:133:ALA:HB2  | 4:CR:84:LYS:NZ    | 2.31        | 0.46     |
| 6:CT:580:GLU:HA   | 6:CT:580:GLU:OE1  | 2.14        | 0.46     |
| 2:BP:284:GLU:N    | 2:BP:285:PRO:HD2  | 2.31        | 0.46     |
| 2:DB:227:GLY:HA2  | 2:DB:242:ALA:O    | 2.16        | 0.46     |
| 2:CI:202:LYS:N    | 8:CX:801:G:O6     | 2.48        | 0.46     |
| 8:DX:840:A:H8     | 8:DX:840:A:O5'    | 1.99        | 0.46     |
| 8:AX:838:A:O2'    | 8:AX:839:C:H5'    | 2.16        | 0.46     |
| 3:DQ:357:LYS:HB2  | 3:DQ:368:GLU:OE1  | 2.15        | 0.46     |
| 5:DL:651:ASP:HB3  | 6:DM:507:PRO:HG2  | 1.97        | 0.46     |
| 7:BN:706:PRO:CD   | 7:BN:707:PRO:HD3  | 2.46        | 0.46     |
| 5:AE:635:LEU:HD13 | 5:AE:687:LEU:HD22 | 1.97        | 0.46     |
| 5:BS:686:LEU:HD21 | 7:BU:762:ILE:HG12 | 1.96        | 0.46     |
| 1:CA:179:SER:OG   | 2:CB:260:ILE:HG12 | 2.16        | 0.46     |
| 1:BO:137:HIS:CD2  | 8:BY:834:U:C6     | 3.04        | 0.46     |
| 3:BC:412:ASN:ND2  | 6:BF:559:LEU:HD23 | 2.27        | 0.46     |
| 3:DJ:374:TRP:CZ3  | 3:DJ:394:ARG:CB   | 2.99        | 0.46     |
| 3:DJ:374:TRP:HZ3  | 3:DJ:394:ARG:CB   | 2.29        | 0.46     |
| 2:AI:235:SER:HB3  | 8:AX:835:U:O2     | 2.16        | 0.46     |
| 2:BI:202:LYS:O    | 2:BI:205:ARG:HB2  | 2.16        | 0.46     |
| 2:BI:267:TYR:HA   | 3:BJ:400:PHE:O    | 2.15        | 0.46     |
| 8:AX:815:A:N6     | 8:AX:816:A:C6     | 2.84        | 0.46     |
| 2:CP:293:GLU:HG3  | 3:CQ:368:GLU:CG   | 2.44        | 0.46     |
| 1:BH:116:ARG:HB2  | 1:BH:184:GLY:O    | 2.16        | 0.46     |
| 6:CT:580:GLU:HG3  | 6:CT:580:GLU:O    | 2.16        | 0.46     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:AS:664:ILE:HA   | 5:AS:670:SER:HA   | 1.98        | 0.46     |
| 3:AJ:389:PRO:C    | 3:AJ:390:VAL:HG23 | 2.36        | 0.46     |
| 5:AE:627:ASN:O    | 5:AE:629:SER:N    | 2.49        | 0.46     |
| 5:AS:636:TYR:HB3  | 5:AS:686:LEU:O    | 2.16        | 0.46     |
| 5:BE:667:LYS:HG3  | 5:BE:669:LYS:HE3  | 1.98        | 0.46     |
| 3:CJ:406:VAL:HG12 | 6:CM:565:ARG:HG3  | 1.97        | 0.46     |
| 6:CM:566:CYS:SG   | 6:CM:566:CYS:O    | 2.73        | 0.46     |
| 5:CE:690:VAL:O    | 5:CE:690:VAL:HG12 | 2.16        | 0.46     |
| 3:BJ:408:VAL:HG11 | 6:BM:562:VAL:CG1  | 2.46        | 0.46     |
| 3:AC:362:HIS:CD2  | 8:AV:836:U:C5     | 3.04        | 0.46     |
| 6:AF:523:LEU:HD21 | 6:AF:564:ILE:HD13 | 1.98        | 0.46     |
| 2:CB:265:ILE:O    | 3:CC:402:ARG:HG2  | 2.15        | 0.46     |
| 2:DB:276:LEU:CD1  | 3:DC:357:LYS:HG3  | 2.42        | 0.46     |
| 2:AB:206:PHE:CE1  | 2:AB:210:LEU:HD21 | 2.51        | 0.46     |
| 6:BF:511:LEU:HD11 | 6:BF:536:VAL:HG11 | 1.97        | 0.46     |
| 4:DD:28:TYR:CZ    | 7:DG:769:MET:HE1  | 2.50        | 0.46     |
| 7:DG:734:PHE:HA   | 7:DG:739:ASN:O    | 2.16        | 0.46     |
| 7:CN:733:GLY:O    | 7:CN:741:VAL:N    | 2.49        | 0.46     |
| 7:AN:705:HIS:CB   | 7:AN:736:PRO:HA   | 2.46        | 0.46     |
| 1:AH:150:LYS:NZ   | 8:AX:859:A:N3     | 2.61        | 0.46     |
| 2:BP:217:ILE:CG2  | 2:BP:265:ILE:HD13 | 2.38        | 0.46     |
| 1:BA:114:ASP:O    | 1:BA:187:PRO:CD   | 2.64        | 0.46     |
| 4:AR:27:VAL:O     | 4:AR:48:VAL:HA    | 2.15        | 0.46     |
| 4:DR:12:GLU:CG    | 4:DR:79:ASN:ND2   | 2.79        | 0.46     |
| 7:BG:731:LEU:HD11 | 7:BG:740:LEU:HD23 | 1.98        | 0.46     |
| 3:BC:332:LEU:HD22 | 3:BC:359:PHE:CE2  | 2.50        | 0.46     |
| 1:CH:115:TYR:HD2  | 1:CH:185:PRO:HG3  | 1.81        | 0.46     |
| 1:CH:185:PRO:O    | 1:CH:187:PRO:HD3  | 2.16        | 0.46     |
| 5:DL:669:LYS:HZ3  | 8:DX:868:G:H21    | 1.64        | 0.46     |
| 8:CV:855:C:O2'    | 8:CV:856:C:H5'    | 2.15        | 0.46     |
| 3:CC:324:PHE:HE2  | 3:CC:329:LEU:HD11 | 1.81        | 0.46     |
| 8:DX:804:G:C8     | 8:DX:804:G:O5'    | 2.69        | 0.46     |
| 5:AE:618:ILE:HG22 | 5:AE:619:ASN:H    | 1.80        | 0.46     |
| 4:AK:27:VAL:O     | 4:AK:48:VAL:HA    | 2.16        | 0.46     |
| 6:DM:544:LEU:CB   | 6:DM:547:THR:HB   | 2.45        | 0.46     |
| 2:AP:223:THR:HG23 | 2:AP:246:THR:O    | 2.16        | 0.46     |
| 1:CH:119:CYS:SG   | 1:CH:142:LEU:HD11 | 2.56        | 0.46     |
| 3:AQ:359:PHE:HA   | 3:AQ:364:ASN:O    | 2.16        | 0.46     |
| 4:BK:38:ASN:ND2   | 7:BN:703:LYS:HA   | 2.30        | 0.46     |
| 4:AK:66:SER:CB    | 8:AX:833:U:O2     | 2.64        | 0.46     |
| 2:DP:290:LYS:HB3  | 3:DQ:357:LYS:HZ1  | 1.81        | 0.46     |
| 3:BJ:347:ARG:NH1  | 8:BX:840:A:C5'    | 2.76        | 0.46     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BS:653:TYR:CG   | 8:BY:831:A:C5     | 3.04        | 0.46     |
| 5:AE:661:ALA:O    | 5:AE:673:GLN:HA   | 2.15        | 0.46     |
| 7:BN:744:GLU:HA   | 7:BN:757:ILE:O    | 2.16        | 0.46     |
| 7:BU:738:MET:O    | 7:BU:740:LEU:HD12 | 2.15        | 0.46     |
| 2:AI:206:PHE:CG   | 2:AI:279:LEU:HB3  | 2.50        | 0.46     |
| 6:CT:571:TYR:CD1  | 6:CT:571:TYR:O    | 2.68        | 0.46     |
| 4:DR:84:LYS:O     | 4:DR:88:ASN:N     | 2.38        | 0.46     |
| 3:AJ:334:GLN:CB   | 3:AJ:418:LYS:HB2  | 2.45        | 0.46     |
| 8:AX:857:U:H4'    | 8:CV:815:A:O2'    | 2.16        | 0.46     |
| 7:CN:728:GLN:O    | 7:CN:745:CYS:HA   | 2.16        | 0.46     |
| 1:DO:136:LYS:HG3  | 1:DO:137:HIS:N    | 2.30        | 0.46     |
| 8:AV:810:A:C6     | 8:AV:811:C:N4     | 2.84        | 0.46     |
| 3:BJ:379:LYS:HB2  | 3:BJ:387:SER:CB   | 2.46        | 0.46     |
| 1:BH:148:PHE:HB3  | 1:BH:151:ILE:CD1  | 2.46        | 0.46     |
| 8:CX:836:U:H6     | 8:CX:836:U:H5'    | 1.80        | 0.46     |
| 8:DX:819:U:H2'    | 8:DX:820:C:H6     | 1.81        | 0.46     |
| 3:BQ:384:LYS:HG2  | 3:BQ:384:LYS:O    | 2.15        | 0.46     |
| 6:CM:535:SER:OG   | 6:CM:543:GLN:OE1  | 2.34        | 0.46     |
| 6:CF:526:GLY:HA3  | 8:CV:868:G:OP2    | 2.16        | 0.46     |
| 3:BQ:372:GLU:O    | 3:BQ:372:GLU:HG3  | 2.16        | 0.46     |
| 5:CL:671:ARG:NH2  | 8:CX:868:G:O3'    | 2.48        | 0.46     |
| 5:CS:665:HIS:HB3  | 5:CS:669:LYS:O    | 2.16        | 0.46     |
| 4:BK:38:ASN:O     | 4:BK:39:MET:HB2   | 2.16        | 0.46     |
| 7:AN:742:ILE:CG2  | 7:AN:745:CYS:HB3  | 2.46        | 0.46     |
| 2:DP:292:ARG:NH1  | 3:DQ:355:ARG:HG3  | 2.31        | 0.46     |
| 7:BN:708:GLU:OE2  | 7:BN:734:PHE:CE1  | 2.69        | 0.46     |
| 3:DC:336:VAL:HG23 | 3:DC:359:PHE:CE2  | 2.50        | 0.46     |
| 4:DR:81:PRO:HB2   | 4:DR:85:SER:CB    | 2.45        | 0.46     |
| 3:BC:387:SER:O    | 3:BC:389:PRO:HD3  | 2.16        | 0.46     |
| 8:BY:862:A:C2     | 8:BY:863:G:C4     | 3.04        | 0.46     |
| 2:DP:232:VAL:CG2  | 2:DP:238:THR:HG23 | 2.45        | 0.46     |
| 8:BY:839:C:C5'    | 8:BY:839:C:H6     | 2.29        | 0.46     |
| 8:BV:808:C:H2'    | 8:BV:809:G:O4'    | 2.16        | 0.46     |
| 8:CY:852:U:O4     | 8:CY:853:A:N6     | 2.49        | 0.46     |
| 8:CY:853:A:H2'    | 8:CY:854:A:C8     | 2.50        | 0.46     |
| 3:CJ:334:GLN:CG   | 3:CJ:416:ALA:HA   | 2.45        | 0.46     |
| 1:CH:190:THR:CG2  | 1:CH:194:ARG:HE   | 2.29        | 0.46     |
| 6:BF:526:GLY:HA3  | 8:BV:867:G:O2'    | 2.16        | 0.46     |
| 5:BL:628:ARG:HH12 | 5:BL:689:SER:CB   | 2.29        | 0.46     |
| 7:DG:725:ARG:NE   | 7:DG:749:ALA:HB2  | 2.31        | 0.46     |
| 3:BJ:410:LEU:HD23 | 3:BJ:410:LEU:N    | 2.31        | 0.46     |
| 6:AM:555:LEU:CD1  | 6:AM:555:LEU:N    | 2.78        | 0.46     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AB:217:ILE:HG12 | 2:AB:268:PHE:CD2  | 2.50        | 0.46     |
| 2:CB:211:SER:O    | 2:CB:212:HIS:HB3  | 2.16        | 0.46     |
| 1:BO:113:ILE:O    | 1:BO:114:ASP:HB2  | 2.15        | 0.46     |
| 2:AP:206:PHE:CD1  | 2:AP:279:LEU:CB   | 3.00        | 0.45     |
| 8:AX:839:C:H2'    | 8:AX:840:A:H8     | 1.80        | 0.45     |
| 4:BK:64:ARG:HD3   | 4:BK:67:LYS:HE2   | 1.98        | 0.45     |
| 5:BL:655:ASN:HA   | 5:BL:679:LEU:O    | 2.15        | 0.45     |
| 6:CM:567:ASN:O    | 8:CX:838:A:N6     | 2.49        | 0.45     |
| 5:DE:642:ARG:HH22 | 5:DE:668:THR:HA   | 1.81        | 0.45     |
| 7:DG:742:ILE:CG2  | 7:DG:745:CYS:HB3  | 2.45        | 0.45     |
| 2:DP:206:PHE:HB2  | 2:DP:280:LEU:CD1  | 2.45        | 0.45     |
| 2:DP:210:LEU:HD23 | 2:DP:279:LEU:HD11 | 1.96        | 0.45     |
| 1:AH:120:ILE:HD12 | 1:AH:179:SER:HB2  | 1.98        | 0.45     |
| 7:DU:705:HIS:HB2  | 7:DU:706:PRO:HD3  | 1.97        | 0.45     |
| 3:BJ:407:ILE:CA   | 6:BM:568:ASN:HD21 | 2.24        | 0.45     |
| 1:CA:162:GLU:OE1  | 1:CA:162:GLU:HA   | 2.17        | 0.45     |
| 2:CB:218:GLU:O    | 2:CB:266:ARG:HB3  | 2.16        | 0.45     |
| 6:CF:565:ARG:CZ   | 8:CV:837:G:N2     | 2.78        | 0.45     |
| 4:AR:46:ILE:HG21  | 4:AR:61:VAL:CG2   | 2.46        | 0.45     |
| 2:BI:271:PRO:HD2  | 2:BI:274:LEU:HD11 | 1.98        | 0.45     |
| 8:BV:841:G:C6     | 8:BV:842:U:C4     | 3.04        | 0.45     |
| 6:BF:564:ILE:CG2  | 6:BF:569:VAL:HG23 | 2.45        | 0.45     |
| 1:BA:131:PHE:CE1  | 1:BA:140:LEU:HD22 | 2.45        | 0.45     |
| 7:DN:718:SER:OG   | 7:DN:771:GLU:HB2  | 2.16        | 0.45     |
| 3:AJ:418:LYS:OXT  | 6:AM:561:GLU:OE1  | 2.34        | 0.45     |
| 5:DL:621:ILE:HD12 | 7:DN:761:VAL:HG13 | 1.98        | 0.45     |
| 3:DJ:372:GLU:O    | 3:DJ:374:TRP:CE3  | 2.69        | 0.45     |
| 1:DH:150:LYS:CE   | 1:DH:162:GLU:HB3  | 2.46        | 0.45     |
| 5:BL:664:ILE:CG2  | 5:BL:665:HIS:H    | 2.27        | 0.45     |
| 8:AY:807:A:H3'    | 8:AY:808:C:H5''   | 1.98        | 0.45     |
| 2:BI:202:LYS:C    | 2:BI:281:VAL:HG21 | 2.37        | 0.45     |
| 1:DO:137:HIS:NE2  | 8:DY:834:U:C2     | 2.83        | 0.45     |
| 8:CY:817:A:C2     | 8:CY:818:G:C4     | 3.04        | 0.45     |
| 4:AD:39:MET:HB2   | 4:AD:65:GLY:HA3   | 1.97        | 0.45     |
| 7:AU:739:ASN:OD1  | 7:AU:763:ARG:HA   | 2.16        | 0.45     |
| 2:CB:279:LEU:HD21 | 2:CB:281:VAL:O    | 2.17        | 0.45     |
| 1:AH:160:GLU:CG   | 8:AX:848:U:H1'    | 2.46        | 0.45     |
| 6:DT:579:GLU:O    | 6:DT:583:GLU:HG3  | 2.16        | 0.45     |
| 7:CG:709:LEU:HD13 | 7:CG:734:PHE:CB   | 2.46        | 0.45     |
| 4:BD:18:VAL:O     | 4:BD:43:MET:HE1   | 2.17        | 0.45     |
| 5:AS:653:TYR:O    | 5:AS:654:MET:HB2  | 2.16        | 0.45     |
| 1:BA:192:ILE:HA   | 1:BA:195:VAL:HG23 | 1.98        | 0.45     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:DX:804:G:H8     | 8:DX:804:G:O5'    | 2.00        | 0.45     |
| 7:DG:743:ASP:HA   | 7:DG:758:GLY:O    | 2.16        | 0.45     |
| 5:DE:681:GLY:O    | 5:DE:682:ASP:C    | 2.55        | 0.45     |
| 6:AF:535:SER:OG   | 6:AF:543:GLN:OE1  | 2.33        | 0.45     |
| 2:AP:275:PRO:HB2  | 2:AP:278:THR:HB   | 1.97        | 0.45     |
| 7:BN:719:LEU:HD22 | 7:BN:762:ILE:CD1  | 2.47        | 0.45     |
| 2:DP:276:LEU:HB2  | 2:DP:290:LYS:CB   | 2.41        | 0.45     |
| 4:DR:64:ARG:HH11  | 7:DU:738:MET:HG3  | 1.80        | 0.45     |
| 1:BH:178:VAL:CG1  | 2:BI:264:ASN:ND2  | 2.80        | 0.45     |
| 5:AE:688:GLN:HG2  | 7:AG:760:VAL:CG2  | 2.39        | 0.45     |
| 5:BS:674:LEU:HD12 | 5:BS:677:ILE:HD11 | 1.98        | 0.45     |
| 6:AF:540:MET:O    | 6:AF:542:MET:HG3  | 2.15        | 0.45     |
| 3:DC:364:ASN:HA   | 3:DC:401:LEU:O    | 2.16        | 0.45     |
| 7:CN:731:LEU:HD13 | 7:CN:740:LEU:HD23 | 1.98        | 0.45     |
| 3:CC:388:LYS:HG2  | 3:CC:390:VAL:HG13 | 1.97        | 0.45     |
| 8:AX:843:C:O2     | 8:AX:864:A:C2     | 2.69        | 0.45     |
| 4:DD:62:TYR:O     | 7:DG:769:MET:CB   | 2.65        | 0.45     |
| 5:CS:642:ARG:NE   | 5:CS:664:ILE:CG2  | 2.79        | 0.45     |
| 2:DI:267:TYR:HB3  | 3:DJ:401:LEU:CD1  | 2.46        | 0.45     |
| 1:DA:141:ILE:HA   | 1:DA:170:VAL:O    | 2.17        | 0.45     |
| 2:BP:247:LEU:HB2  | 2:BP:250:ARG:HB3  | 1.98        | 0.45     |
| 5:DL:663:GLU:HB2  | 5:DL:671:ARG:CB   | 2.39        | 0.45     |
| 2:AP:244:LYS:HB3  | 2:AP:254:GLN:OE1  | 2.16        | 0.45     |
| 2:BP:241:LYS:C    | 2:BP:243:VAL:HG23 | 2.36        | 0.45     |
| 4:AD:21:GLU:HB3   | 4:AD:70:PHE:CE1   | 2.51        | 0.45     |
| 3:DC:342:VAL:HG21 | 3:DC:356:VAL:HG21 | 1.98        | 0.45     |
| 7:AG:747:GLU:HB3  | 7:AG:755:ASN:HB3  | 1.99        | 0.45     |
| 3:AJ:350:LYS:HG2  | 3:AJ:374:TRP:HB2  | 1.98        | 0.45     |
| 2:DP:283:VAL:HG23 | 2:DP:284:GLU:N    | 2.31        | 0.45     |
| 1:BH:155:ASN:OD1  | 8:DV:813:G:H4'    | 2.16        | 0.45     |
| 3:BC:314:GLU:N    | 3:BC:314:GLU:OE1  | 2.49        | 0.45     |
| 2:DB:223:THR:HG22 | 2:DB:248:LYS:HG2  | 1.98        | 0.45     |
| 3:DJ:343:LEU:O    | 3:DJ:410:LEU:N    | 2.49        | 0.45     |
| 3:DJ:347:ARG:CG   | 8:DX:839:C:O2'    | 2.64        | 0.45     |
| 8:DX:841:G:C6     | 8:DX:842:U:C4     | 3.05        | 0.45     |
| 2:DI:217:ILE:HD12 | 2:DI:260:ILE:CD1  | 2.47        | 0.45     |
| 6:AT:524:LYS:HA   | 6:AT:570:LEU:HD21 | 1.98        | 0.45     |
| 7:BN:703:LYS:HG2  | 7:BN:703:LYS:O    | 2.16        | 0.45     |
| 6:CM:539:TYR:HD1  | 8:CX:831:A:O4'    | 1.95        | 0.45     |
| 1:BA:180:MET:HB2  | 2:BB:259:SER:HB3  | 1.99        | 0.45     |
| 8:BV:815:A:C2'    | 8:BV:816:A:C8     | 2.79        | 0.45     |
| 6:DT:559:LEU:HD12 | 6:DT:559:LEU:N    | 2.32        | 0.45     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:BN:756:ASN:OD1  | 7:BN:757:ILE:N    | 2.49        | 0.45     |
| 7:CU:709:LEU:CD1  | 7:CU:731:LEU:HD21 | 2.45        | 0.45     |
| 7:CN:737:PHE:HB3  | 7:CN:739:ASN:ND2  | 2.31        | 0.45     |
| 2:CI:207:LEU:HA   | 2:CI:210:LEU:HD12 | 1.98        | 0.45     |
| 1:CH:173:ARG:NH2  | 4:CK:66:SER:HA    | 2.32        | 0.45     |
| 3:AJ:334:GLN:HG2  | 3:AJ:418:LYS:HD2  | 1.97        | 0.45     |
| 4:BD:80:ALA:CB    | 4:BD:81:PRO:CD    | 2.94        | 0.45     |
| 3:AJ:332:LEU:C    | 3:AJ:359:PHE:CZ   | 2.90        | 0.45     |
| 1:CO:153:PRO:HB2  | 1:CO:158:GLN:HB3  | 1.99        | 0.45     |
| 5:BE:677:ILE:CG2  | 5:BE:679:LEU:HD23 | 2.45        | 0.45     |
| 1:AA:170:VAL:HG12 | 1:AA:171:LEU:N    | 2.31        | 0.45     |
| 2:DI:247:LEU:HD12 | 2:DI:248:LYS:H    | 1.81        | 0.45     |
| 7:DN:749:ALA:O    | 7:DN:750:THR:HB   | 2.16        | 0.45     |
| 2:CP:280:LEU:HD22 | 2:CP:286:LYS:HE2  | 1.99        | 0.45     |
| 7:BN:717:LEU:HD12 | 7:BN:731:LEU:HB2  | 1.99        | 0.45     |
| 1:AA:137:HIS:O    | 1:AA:137:HIS:CG   | 2.69        | 0.45     |
| 1:CH:150:LYS:H    | 1:CH:164:LYS:HD3  | 1.82        | 0.45     |
| 1:DA:173:ARG:HH12 | 4:DD:39:MET:HG3   | 1.81        | 0.45     |
| 8:BY:813:G:H2'    | 8:BY:814:A:H3'    | 1.97        | 0.45     |
| 5:BS:632:GLN:O    | 5:BS:689:SER:CB   | 2.65        | 0.45     |
| 4:CR:13:ALA:C     | 4:CR:16:HIS:CD2   | 2.90        | 0.45     |
| 3:DQ:411:ARG:HD2  | 6:DT:561:GLU:HB2  | 1.99        | 0.45     |
| 6:DF:548:GLU:HG2  | 6:DF:558:HIS:HB3  | 1.98        | 0.45     |
| 6:DF:548:GLU:HG2  | 6:DF:558:HIS:CB   | 2.47        | 0.45     |
| 5:CE:646:CYS:O    | 5:CE:646:CYS:SG   | 2.74        | 0.45     |
| 6:DT:526:GLY:HA3  | 8:DY:868:G:OP1    | 2.16        | 0.45     |
| 3:CC:342:VAL:O    | 3:CC:353:LEU:HD12 | 2.17        | 0.45     |
| 5:BE:642:ARG:HH21 | 5:BE:664:ILE:CG2  | 2.28        | 0.45     |
| 1:DH:139:ASN:OD1  | 1:DH:174:GLY:N    | 2.49        | 0.45     |
| 1:AH:175:GLU:C    | 1:AH:176:ASN:HD22 | 2.20        | 0.45     |
| 8:AV:858:A:H4'    | 8:AV:859:A:OP2    | 2.16        | 0.45     |
| 6:BM:524:LYS:HA   | 6:BM:570:LEU:HD13 | 1.99        | 0.45     |
| 6:CF:522:LYS:HG2  | 6:CF:570:LEU:HD12 | 1.97        | 0.45     |
| 2:AI:211:SER:HA   | 2:AI:229:ILE:CG2  | 2.46        | 0.45     |
| 3:BC:341:GLN:HB3  | 3:BC:355:ARG:HH11 | 1.81        | 0.45     |
| 3:BQ:361:ARG:C    | 3:BQ:363:CYS:H    | 2.19        | 0.45     |
| 2:AB:206:PHE:CD1  | 2:AB:210:LEU:HD11 | 2.51        | 0.45     |
| 2:BB:274:LEU:HD21 | 2:BB:291:LYS:CA   | 2.47        | 0.45     |
| 7:DG:737:PHE:HB2  | 7:DG:739:ASN:ND2  | 2.31        | 0.45     |
| 3:DJ:374:TRP:CZ3  | 3:DJ:394:ARG:HB2  | 2.52        | 0.45     |
| 8:DY:830:A:H62    | 8:DY:836:U:C5'    | 2.25        | 0.45     |
| 8:BV:858:A:C5'    | 8:BV:859:A:OP2    | 2.64        | 0.45     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AI:219:LEU:HD12 | 2:AI:223:THR:HG22 | 1.98        | 0.45     |
| 2:DI:248:LYS:O    | 2:DI:249:ASN:CG   | 2.55        | 0.45     |
| 5:CL:634:TRP:HH2  | 5:CL:664:ILE:HG13 | 1.81        | 0.45     |
| 5:AL:684:ILE:HD13 | 5:AL:687:LEU:HD21 | 1.98        | 0.45     |
| 8:BV:865:C:O2'    | 8:BV:866:U:H5'    | 2.16        | 0.45     |
| 8:BY:814:A:C2     | 8:BY:815:A:C4     | 3.04        | 0.45     |
| 8:AV:814:A:C6     | 8:AV:815:A:C5     | 3.04        | 0.45     |
| 4:DK:23:ASN:HA    | 4:DK:69:ARG:HH21  | 1.81        | 0.45     |
| 1:AA:109:MET:HE2  | 1:AA:134:PHE:CD2  | 2.51        | 0.45     |
| 5:CS:666:SER:C    | 5:CS:668:THR:N    | 2.69        | 0.45     |
| 5:BL:692:ASN:OXT  | 5:BL:692:ASN:OD1  | 2.34        | 0.45     |
| 5:BE:692:ASN:OD1  | 5:BE:692:ASN:C    | 2.54        | 0.45     |
| 4:AR:33:ILE:HD11  | 4:AR:44:SER:OG    | 2.17        | 0.45     |
| 1:AA:189:ASP:O    | 1:AA:192:ILE:N    | 2.48        | 0.45     |
| 4:CD:25:GLY:O     | 4:CD:26:GLU:C     | 2.55        | 0.45     |
| 2:AP:210:LEU:O    | 2:AP:229:ILE:HD12 | 2.17        | 0.45     |
| 3:DJ:407:ILE:CG1  | 6:DM:568:ASN:ND2  | 2.70        | 0.45     |
| 2:CI:289:SER:O    | 2:CI:293:GLU:CG   | 2.64        | 0.45     |
| 7:BG:741:VAL:HA   | 7:BG:760:VAL:O    | 2.16        | 0.45     |
| 1:DH:138:MET:O    | 1:DH:140:LEU:HD23 | 2.17        | 0.45     |
| 8:DX:834:U:H3'    | 8:DX:835:U:H5'    | 1.98        | 0.45     |
| 2:DP:274:LEU:HA   | 2:DP:275:PRO:HD3  | 1.81        | 0.45     |
| 5:CE:687:LEU:O    | 7:CG:760:VAL:HG23 | 2.17        | 0.45     |
| 3:BJ:408:VAL:HG12 | 6:BM:562:VAL:HG13 | 1.98        | 0.45     |
| 5:AE:634:TRP:HB3  | 5:AE:688:GLN:O    | 2.17        | 0.45     |
| 6:CF:565:ARG:HB3  | 8:CV:837:G:H21    | 1.82        | 0.45     |
| 2:AI:232:VAL:HG22 | 2:AI:238:THR:HG23 | 1.98        | 0.45     |
| 3:CC:374:TRP:N    | 3:CC:392:LYS:O    | 2.48        | 0.45     |
| 2:DB:229:ILE:HA   | 2:DB:240:LEU:CD2  | 2.46        | 0.45     |
| 7:AU:718:SER:N    | 7:AU:771:GLU:O    | 2.23        | 0.45     |
| 2:CI:229:ILE:HG12 | 2:CI:240:LEU:CD2  | 2.47        | 0.45     |
| 3:DC:367:LEU:C    | 3:DC:368:GLU:HG3  | 2.37        | 0.45     |
| 7:BG:765:ASN:HB2  | 8:BV:832:U:O2     | 2.17        | 0.45     |
| 5:DS:634:TRP:CZ2  | 5:DS:642:ARG:HG3  | 2.51        | 0.45     |
| 4:AD:46:ILE:C     | 4:AD:46:ILE:HD12  | 2.36        | 0.45     |
| 2:BB:229:ILE:CA   | 2:BB:240:LEU:HD22 | 2.43        | 0.45     |
| 3:BC:377:VAL:HG22 | 3:BC:388:LYS:HB2  | 1.99        | 0.45     |
| 6:BF:571:TYR:HE1  | 6:BF:573:ARG:HB3  | 1.81        | 0.45     |
| 2:CB:286:LYS:O    | 2:CB:287:VAL:C    | 2.53        | 0.45     |
| 8:AX:849:G:C6     | 8:AX:850:G:C5     | 3.04        | 0.45     |
| 1:DO:192:ILE:HG23 | 4:DR:92:GLY:N     | 2.32        | 0.45     |
| 3:CJ:313:PRO:O    | 3:CJ:317:GLN:HG3  | 2.16        | 0.45     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CJ:372:GLU:HG3  | 3:CJ:374:TRP:HZ3  | 1.81        | 0.45     |
| 4:DD:42:GLN:NE2   | 7:DG:708:GLU:OE2  | 2.50        | 0.45     |
| 5:AS:647:ILE:HA   | 5:AS:658:LEU:CD2  | 2.46        | 0.45     |
| 5:AE:682:ASP:HA   | 7:AG:763:ARG:CZ   | 2.46        | 0.45     |
| 2:DP:225:VAL:HG22 | 2:DP:245:MET:HG3  | 1.99        | 0.45     |
| 3:DJ:390:VAL:HG23 | 3:DJ:390:VAL:O    | 2.16        | 0.45     |
| 7:BU:721:LEU:HD12 | 7:BU:721:LEU:N    | 2.32        | 0.45     |
| 1:CO:116:ARG:HA   | 1:CO:129:GLY:O    | 2.17        | 0.45     |
| 3:AQ:339:ASN:OD1  | 3:AQ:355:ARG:NE   | 2.50        | 0.45     |
| 3:AQ:344:ILE:O    | 3:AQ:351:LYS:HA   | 2.17        | 0.45     |
| 8:AX:839:C:O2'    | 8:AX:840:A:O4'    | 2.30        | 0.45     |
| 3:CQ:347:ARG:HA   | 3:CQ:407:ILE:HD12 | 1.99        | 0.45     |
| 4:CK:80:ALA:CB    | 4:CK:81:PRO:CD    | 2.92        | 0.45     |
| 6:BM:540:MET:O    | 6:BM:542:MET:HG3  | 2.17        | 0.45     |
| 6:BM:531:GLY:HA3  | 6:BM:547:THR:HA   | 1.99        | 0.45     |
| 2:BP:266:ARG:O    | 3:BQ:402:ARG:CB   | 2.65        | 0.45     |
| 8:AV:840:A:N1     | 8:AV:841:G:C4     | 2.84        | 0.45     |
| 7:BN:757:ILE:HG22 | 7:BN:758:GLY:N    | 2.31        | 0.45     |
| 7:BU:738:MET:HB3  | 7:BU:764:GLY:HA3  | 1.99        | 0.45     |
| 4:CK:40:ASN:HB3   | 4:CK:62:TYR:OH    | 2.17        | 0.45     |
| 5:BE:680:LYS:CB   | 6:BF:570:LEU:O    | 2.62        | 0.45     |
| 7:DN:731:LEU:CD1  | 7:DN:740:LEU:HD23 | 2.47        | 0.45     |
| 4:CD:78:LYS:O     | 4:CD:81:PRO:HD2   | 2.16        | 0.45     |
| 7:DU:763:ARG:HH21 | 8:DY:832:U:H1'    | 1.81        | 0.45     |
| 8:BY:865:C:O2'    | 8:BY:866:U:H5'    | 2.17        | 0.45     |
| 5:CL:641:MET:C    | 5:CL:642:ARG:HG3  | 2.36        | 0.45     |
| 8:CY:842:U:O4     | 8:CY:843:C:N4     | 2.50        | 0.45     |
| 8:BX:853:A:N7     | 8:BX:854:A:C6     | 2.85        | 0.45     |
| 3:CJ:411:ARG:CD   | 3:CJ:416:ALA:HB3  | 2.46        | 0.45     |
| 1:DA:137:HIS:O    | 1:DA:138:MET:HB2  | 2.16        | 0.45     |
| 5:DL:665:HIS:HB3  | 5:DL:669:LYS:HB2  | 1.98        | 0.45     |
| 5:AE:609:LYS:HZ3  | 7:AG:744:GLU:HB2  | 1.82        | 0.45     |
| 4:CD:86:MET:HA    | 4:CD:89:LYS:HD3   | 1.97        | 0.45     |
| 7:DN:773:LEU:O    | 7:DN:774:GLU:C    | 2.55        | 0.45     |
| 8:BX:842:U:O2'    | 8:BX:843:C:H5'    | 2.16        | 0.45     |
| 4:DR:14:GLU:HG2   | 4:DR:32:LEU:HG    | 1.99        | 0.45     |
| 3:CC:373:MET:HA   | 3:CC:393:ASP:HA   | 1.97        | 0.45     |
| 8:BX:827:G:H8     | 8:BX:827:G:OP1    | 1.99        | 0.45     |
| 1:BA:122:GLN:N    | 1:BA:176:ASN:O    | 2.48        | 0.45     |
| 2:BI:289:SER:O    | 2:BI:293:GLU:HG2  | 2.16        | 0.45     |
| 6:DM:558:HIS:C    | 6:DM:559:LEU:HD12 | 2.37        | 0.45     |
| 2:DI:276:LEU:HD13 | 3:DJ:357:LYS:CD   | 2.40        | 0.45     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:CY:838:A:H2'    | 8:CY:839:C:C5     | 2.48        | 0.45     |
| 3:CJ:347:ARG:HH22 | 8:CX:838:A:H1'    | 1.81        | 0.45     |
| 3:CJ:408:VAL:HG12 | 3:CJ:409:VAL:N    | 2.32        | 0.45     |
| 2:DP:210:LEU:CD2  | 2:DP:274:LEU:HD11 | 2.47        | 0.45     |
| 5:BS:684:ILE:HD13 | 5:BS:687:LEU:HD21 | 1.99        | 0.45     |
| 3:AC:407:ILE:HD13 | 6:AF:568:ASN:CG   | 2.36        | 0.45     |
| 3:DC:332:LEU:CG   | 3:DC:359:PHE:CE1  | 2.99        | 0.45     |
| 5:CS:655:ASN:O    | 5:CS:656:LEU:HD12 | 2.16        | 0.45     |
| 7:CN:721:LEU:CD2  | 7:CN:767:ILE:HD13 | 2.47        | 0.45     |
| 4:DK:44:SER:O     | 4:DK:46:ILE:HG23  | 2.17        | 0.45     |
| 2:AB:290:LYS:HD3  | 3:AC:357:LYS:HE2  | 1.99        | 0.45     |
| 2:DB:249:ASN:ND2  | 8:DV:859:A:H5''   | 2.32        | 0.45     |
| 8:CV:806:G:N1     | 8:CV:823:C:N3     | 2.57        | 0.45     |
| 6:AT:539:TYR:HD1  | 6:AT:566:CYS:HB3  | 1.81        | 0.45     |
| 2:AI:218:GLU:OE2  | 2:AI:222:GLY:O    | 2.34        | 0.45     |
| 1:AH:150:LYS:NZ   | 8:AX:859:A:C2     | 2.79        | 0.45     |
| 5:BL:661:ALA:O    | 5:BL:673:GLN:HA   | 2.17        | 0.45     |
| 3:AJ:312:THR:CG2  | 3:AJ:313:PRO:CD   | 2.94        | 0.45     |
| 8:CY:814:A:H2'    | 8:CY:815:A:C8     | 2.52        | 0.45     |
| 8:CX:808:C:H2'    | 8:CX:809:G:H8     | 1.81        | 0.45     |
| 1:BO:133:ALA:HB3  | 1:BO:141:ILE:CG1  | 2.46        | 0.45     |
| 4:BD:19:THR:CB    | 4:BD:72:ILE:HD12  | 2.46        | 0.45     |
| 1:CH:109:MET:CE   | 1:CH:109:MET:HA   | 2.47        | 0.45     |
| 4:BK:68:ILE:HG21  | 4:BK:71:LEU:CD1   | 2.47        | 0.45     |
| 4:CK:64:ARG:HB3   | 4:CK:67:LYS:HG2   | 1.98        | 0.45     |
| 2:CP:206:PHE:CZ   | 2:CP:279:LEU:CD1  | 2.99        | 0.45     |
| 8:DX:821:G:H5'    | 8:DX:822:G:OP1    | 2.16        | 0.45     |
| 4:AD:23:ASN:ND2   | 4:AD:67:LYS:HA    | 2.32        | 0.45     |
| 5:CE:675:GLY:O    | 5:CE:676:ARG:HD2  | 2.16        | 0.45     |
| 8:DY:817:A:C2     | 8:DY:818:G:C5     | 3.05        | 0.45     |
| 3:CQ:378:PRO:HB3  | 3:CQ:387:SER:O    | 2.17        | 0.45     |
| 8:DX:863:G:H2'    | 8:DX:864:A:H8     | 1.82        | 0.45     |
| 6:DM:530:LYS:N    | 6:DM:548:GLU:O    | 2.37        | 0.45     |
| 1:CO:181:THR:OG1  | 2:CP:257:THR:O    | 2.21        | 0.45     |
| 2:CI:276:LEU:HD21 | 3:CJ:357:LYS:HZ3  | 1.66        | 0.45     |
| 1:DH:137:HIS:NE2  | 8:DX:834:U:C2'    | 2.79        | 0.45     |
| 2:BP:277:ASP:H    | 2:BP:290:LYS:CD   | 2.28        | 0.45     |
| 1:CO:188:LYS:O    | 1:CO:191:GLY:CA   | 2.64        | 0.45     |
| 3:AJ:366:VAL:O    | 3:AJ:367:LEU:HD23 | 2.17        | 0.45     |
| 2:DB:266:ARG:O    | 3:DC:402:ARG:HB2  | 2.17        | 0.45     |
| 5:BE:651:ASP:OD2  | 6:BF:507:PRO:HG3  | 2.17        | 0.45     |
| 7:DG:767:ILE:HG21 | 7:DG:770:LEU:HD11 | 1.99        | 0.45     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 7:AU:717:LEU:HD12 | 7:AU:731:LEU:HB2  | 1.99        | 0.45     |
| 7:CG:738:MET:HB2  | 7:CG:764:GLY:HA3  | 1.98        | 0.45     |
| 2:AB:230:THR:OG1  | 2:AB:239:HIS:O    | 2.31        | 0.45     |
| 6:AT:540:MET:HB2  | 6:AT:566:CYS:SG   | 2.57        | 0.45     |
| 5:BL:664:ILE:HD13 | 5:BL:670:SER:HA   | 1.99        | 0.45     |
| 4:DR:44:SER:O     | 4:DR:46:ILE:HG23  | 2.17        | 0.45     |
| 3:AJ:411:ARG:HD3  | 3:AJ:414:LEU:HD11 | 1.98        | 0.45     |
| 2:CP:276:LEU:HB2  | 2:CP:290:LYS:HG3  | 1.99        | 0.45     |
| 8:BX:847:A:C2'    | 8:BX:848:U:H5'    | 2.46        | 0.45     |
| 5:DS:691:SER:OG   | 7:DU:757:ILE:CD1  | 2.61        | 0.45     |
| 7:BN:717:LEU:HD23 | 7:BN:772:ALA:HA   | 1.99        | 0.45     |
| 8:DX:847:A:C2     | 8:DX:848:U:C5     | 3.05        | 0.45     |
| 4:BR:16:HIS:O     | 4:BR:18:VAL:HG13  | 2.17        | 0.45     |
| 1:CA:125:ARG:NH1  | 1:CA:147:GLU:OE2  | 2.50        | 0.45     |
| 3:CQ:382:LYS:C    | 3:CQ:384:LYS:H    | 2.20        | 0.45     |
| 2:CP:211:SER:HA   | 2:CP:229:ILE:HB   | 1.98        | 0.45     |
| 5:AS:662:GLU:HA   | 5:AS:673:GLN:HA   | 1.97        | 0.45     |
| 5:BE:668:THR:HG22 | 5:BE:668:THR:O    | 2.17        | 0.45     |
| 6:DF:550:TYR:O    | 6:DF:550:TYR:CD2  | 2.70        | 0.45     |
| 4:AK:64:ARG:NH1   | 7:AN:738:MET:HG3  | 2.31        | 0.45     |
| 4:DR:64:ARG:NH1   | 7:DU:738:MET:HG3  | 2.32        | 0.45     |
| 3:BQ:336:VAL:HG21 | 3:BQ:356:VAL:HG11 | 1.99        | 0.45     |
| 5:AE:677:ILE:HA   | 6:AF:572:ILE:O    | 2.16        | 0.45     |
| 8:AV:838:A:H4'    | 8:AV:838:A:OP2    | 2.17        | 0.45     |
| 2:AI:207:LEU:HD23 | 2:AI:210:LEU:HD12 | 1.99        | 0.45     |
| 6:DT:511:LEU:HD21 | 6:DT:540:MET:CE   | 2.47        | 0.45     |
| 4:DR:81:PRO:CB    | 4:DR:85:SER:N     | 2.80        | 0.45     |
| 2:DB:276:LEU:HD12 | 2:DB:290:LYS:HA   | 1.99        | 0.45     |
| 6:BF:539:TYR:CE1  | 8:BV:837:G:C5     | 3.04        | 0.45     |
| 5:AL:686:LEU:HD22 | 7:AN:762:ILE:HG12 | 1.99        | 0.45     |
| 8:AX:866:U:C2'    | 8:AX:867:G:O4'    | 2.50        | 0.45     |
| 2:AB:207:LEU:CB   | 2:AB:232:VAL:HG11 | 2.47        | 0.45     |
| 1:BA:131:PHE:CE1  | 1:BA:140:LEU:HD13 | 2.51        | 0.45     |
| 3:BC:403:GLY:O    | 3:BC:406:VAL:HB   | 2.17        | 0.45     |
| 4:BD:80:ALA:HB3   | 4:BD:81:PRO:HD3   | 1.98        | 0.45     |
| 4:BD:27:VAL:HB    | 4:BD:49:THR:HB    | 1.98        | 0.45     |
| 1:AO:179:SER:CA   | 2:AP:259:SER:O    | 2.59        | 0.45     |
| 6:CF:539:TYR:CG   | 6:CF:539:TYR:O    | 2.70        | 0.45     |
| 8:CY:812:U:O2     | 8:CY:818:G:C2     | 2.69        | 0.45     |
| 1:BA:107:SER:O    | 1:BA:111:GLN:NE2  | 2.49        | 0.45     |
| 1:BH:116:ARG:NH1  | 1:BH:130:THR:N    | 2.64        | 0.45     |
| 8:BV:856:C:C2'    | 8:BV:857:U:O5'    | 2.65        | 0.45     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:AY:865:C:H2'    | 8:AY:866:U:O4'    | 2.17        | 0.45     |
| 2:DI:269:ILE:CD1  | 3:DJ:396:ILE:CD1  | 2.95        | 0.45     |
| 6:DM:544:LEU:HB3  | 6:DM:547:THR:HB   | 1.98        | 0.45     |
| 5:CS:648:ILE:O    | 5:CS:648:ILE:HG22 | 2.16        | 0.45     |
| 2:CP:254:GLN:O    | 2:CP:255:LEU:HD23 | 2.17        | 0.45     |
| 8:BY:846:U:C2     | 8:BY:858:A:C2     | 3.05        | 0.45     |
| 8:DV:860:G:C2'    | 8:DV:861:G:H5'    | 2.47        | 0.45     |
| 2:DI:239:HIS:O    | 2:DI:240:LEU:HD23 | 2.17        | 0.45     |
| 3:CJ:407:ILE:HG12 | 6:CM:568:ASN:OD1  | 2.16        | 0.45     |
| 5:CE:678:MET:O    | 6:CF:571:TYR:HB2  | 2.17        | 0.45     |
| 1:BH:119:CYS:SG   | 1:BH:140:LEU:HD12 | 2.56        | 0.45     |
| 2:CB:249:ASN:OD1  | 8:CV:859:A:H5'    | 2.17        | 0.45     |
| 5:AE:624:TYR:CE1  | 7:AG:761:VAL:HG21 | 2.52        | 0.45     |
| 5:AE:636:TYR:CB   | 5:AE:686:LEU:HB2  | 2.47        | 0.45     |
| 3:AC:408:VAL:HG22 | 6:AF:564:ILE:HG12 | 1.98        | 0.45     |
| 2:AI:229:ILE:HG22 | 2:AI:231:GLY:H    | 1.82        | 0.45     |
| 2:AI:202:LYS:HG3  | 2:AI:281:VAL:HG11 | 1.99        | 0.45     |
| 7:CU:709:LEU:O    | 7:CU:713:MET:N    | 2.50        | 0.45     |
| 2:CI:207:LEU:CD2  | 2:CI:210:LEU:HD12 | 2.42        | 0.45     |
| 3:BC:407:ILE:HD12 | 6:BF:525:TRP:CE3  | 2.51        | 0.45     |
| 5:DE:625:LEU:O    | 5:DE:628:ARG:O    | 2.35        | 0.45     |
| 1:CA:118:ARG:CZ   | 1:CA:128:ILE:HD11 | 2.46        | 0.45     |
| 8:AX:857:U:H1'    | 8:CV:815:A:N3     | 2.32        | 0.45     |
| 5:BE:671:ARG:C    | 5:BE:672:LYS:CG   | 2.84        | 0.45     |
| 1:AO:151:ILE:HG22 | 1:AO:152:LYS:N    | 2.31        | 0.45     |
| 1:CA:115:TYR:O    | 1:CA:116:ARG:C    | 2.55        | 0.45     |
| 4:AK:85:SER:O     | 4:AK:89:LYS:HG2   | 2.16        | 0.45     |
| 3:BJ:396:ILE:HB   | 3:BJ:399:MET:HE2  | 1.98        | 0.45     |
| 4:AD:21:GLU:OE1   | 4:AD:70:PHE:HE1   | 1.99        | 0.45     |
| 1:BH:137:HIS:CE1  | 8:BX:834:U:C2     | 3.05        | 0.45     |
| 1:DA:171:LEU:CD2  | 1:DA:171:LEU:C    | 2.84        | 0.45     |
| 8:CX:861:G:C2'    | 8:CX:862:A:O5'    | 2.65        | 0.45     |
| 4:DR:11:HIS:HA    | 4:DR:14:GLU:HG3   | 1.99        | 0.45     |
| 3:BQ:348:ASN:O    | 3:BQ:349:ASN:HB3  | 2.17        | 0.45     |
| 2:AP:280:LEU:HD23 | 2:AP:286:LYS:HG2  | 1.99        | 0.44     |
| 3:CQ:407:ILE:O    | 3:CQ:407:ILE:HG22 | 2.16        | 0.44     |
| 1:DH:137:HIS:CD2  | 8:DX:834:U:H3'    | 2.52        | 0.44     |
| 4:AK:21:GLU:HA    | 4:AK:26:GLU:O     | 2.17        | 0.44     |
| 3:DQ:326:THR:HG21 | 3:DQ:329:LEU:CD1  | 2.44        | 0.44     |
| 2:BP:205:ARG:O    | 2:BP:208:MET:HE2  | 2.17        | 0.44     |
| 2:BI:276:LEU:O    | 2:BI:280:LEU:CD1  | 2.61        | 0.44     |
| 5:BE:683:ASN:CB   | 6:BF:570:LEU:CD1  | 2.94        | 0.44     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:DK:33:ILE:HD11  | 4:DK:44:SER:HG    | 1.81        | 0.44     |
| 1:AA:177:LEU:HD12 | 1:AA:178:VAL:N    | 2.28        | 0.44     |
| 1:AA:178:VAL:HG12 | 1:AA:179:SER:N    | 2.31        | 0.44     |
| 2:AB:212:HIS:O    | 2:AB:228:THR:CG2  | 2.65        | 0.44     |
| 8:BY:864:A:H2'    | 8:BY:865:C:C6     | 2.53        | 0.44     |
| 7:CU:745:CYS:SG   | 7:CU:760:VAL:HG11 | 2.57        | 0.44     |
| 5:BL:661:ALA:HB2  | 5:BL:677:ILE:HD12 | 1.98        | 0.44     |
| 5:DE:651:ASP:OD1  | 5:DE:655:ASN:HB2  | 2.16        | 0.44     |
| 8:BY:838:A:C5'    | 8:BY:838:A:C8     | 2.99        | 0.44     |
| 5:BE:662:GLU:CA   | 5:BE:672:LYS:O    | 2.59        | 0.44     |
| 8:CY:864:A:C2     | 8:CY:865:C:C2     | 3.05        | 0.44     |
| 4:AR:28:TYR:CE1   | 4:AR:48:VAL:HB    | 2.51        | 0.44     |
| 8:CY:853:A:C6     | 8:CY:854:A:C6     | 3.05        | 0.44     |
| 6:CF:505:LEU:C    | 6:CF:507:PRO:CD   | 2.85        | 0.44     |
| 6:CF:508:LYS:HB2  | 6:CF:509:PRO:HD2  | 1.95        | 0.44     |
| 6:AM:524:LYS:HD3  | 6:AM:570:LEU:HD21 | 1.99        | 0.44     |
| 6:AF:520:MET:HE3  | 6:AF:575:VAL:HG12 | 1.95        | 0.44     |
| 8:BV:863:G:C2     | 8:BV:864:A:C8     | 3.05        | 0.44     |
| 1:BO:151:ILE:HD11 | 8:BY:860:G:H4'    | 1.98        | 0.44     |
| 6:DT:518:PRO:HB2  | 6:DT:576:GLU:HB2  | 1.99        | 0.44     |
| 8:BY:804:G:C3'    | 8:BY:805:U:H5''   | 2.46        | 0.44     |
| 2:CP:269:ILE:CG2  | 2:CP:270:LEU:N    | 2.80        | 0.44     |
| 3:DJ:326:THR:CB   | 3:DJ:330:SER:HB2  | 2.47        | 0.44     |
| 5:DS:638:GLN:HG2  | 5:DS:638:GLN:O    | 2.17        | 0.44     |
| 4:BK:54:ARG:HA    | 4:BK:54:ARG:HD3   | 1.83        | 0.44     |
| 4:DR:45:ASN:OD1   | 4:DR:45:ASN:O     | 2.35        | 0.44     |
| 4:DK:66:SER:HB3   | 8:DX:833:U:O2     | 2.17        | 0.44     |
| 2:DP:276:LEU:CD1  | 3:DQ:357:LYS:NZ   | 2.81        | 0.44     |
| 2:BP:280:LEU:HD12 | 2:BP:281:VAL:H    | 1.81        | 0.44     |
| 2:BI:263:ASN:HA   | 3:BJ:402:ARG:NH2  | 2.31        | 0.44     |
| 2:DB:218:GLU:O    | 2:DB:266:ARG:HB3  | 2.17        | 0.44     |
| 1:DA:119:CYS:SG   | 1:DA:180:MET:HE3  | 2.57        | 0.44     |
| 5:BL:678:MET:SD   | 6:BM:511:LEU:HD23 | 2.55        | 0.44     |
| 1:CH:173:ARG:CZ   | 8:CX:834:U:C2     | 3.00        | 0.44     |
| 1:BO:137:HIS:O    | 1:BO:138:MET:CB   | 2.65        | 0.44     |
| 4:AK:46:ILE:HG12  | 4:AK:61:VAL:CG2   | 2.47        | 0.44     |
| 2:BB:207:LEU:HD11 | 3:BC:400:PHE:CZ   | 2.53        | 0.44     |
| 5:DE:635:LEU:HD12 | 5:DE:636:TYR:N    | 2.32        | 0.44     |
| 6:DF:522:LYS:CB   | 6:DF:571:TYR:CE2  | 3.01        | 0.44     |
| 3:DQ:331:VAL:CG1  | 6:DT:543:GLN:NE2  | 2.80        | 0.44     |
| 5:CS:621:ILE:CD1  | 7:CU:741:VAL:CG2  | 2.95        | 0.44     |
| 5:BL:666:SER:C    | 5:BL:668:THR:N    | 2.71        | 0.44     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:BI:205:ARG:O    | 2:BI:208:MET:N    | 2.50        | 0.44     |
| 2:BI:281:VAL:HG12 | 2:BI:282:ASP:OD1  | 2.17        | 0.44     |
| 3:CJ:396:ILE:CG2  | 3:CJ:399:MET:HE1  | 2.46        | 0.44     |
| 8:CY:852:U:H2'    | 8:CY:853:A:C8     | 2.52        | 0.44     |
| 4:CD:12:GLU:HG2   | 4:CD:79:ASN:ND2   | 2.31        | 0.44     |
| 8:AY:843:C:C2     | 8:AY:844:U:C5     | 3.05        | 0.44     |
| 8:BV:852:U:C4     | 8:BV:853:A:C6     | 3.06        | 0.44     |
| 1:AH:154:LYS:CG   | 8:CV:813:G:H5''   | 2.46        | 0.44     |
| 8:CY:806:G:O2'    | 8:CY:807:A:C1'    | 2.65        | 0.44     |
| 7:AN:726:HIS:O    | 7:AN:748:MET:HG2  | 2.17        | 0.44     |
| 4:DD:64:ARG:NH2   | 8:DV:833:U:C6     | 2.85        | 0.44     |
| 8:AV:862:A:H2'    | 8:AV:863:G:O4'    | 2.17        | 0.44     |
| 8:AV:817:A:C6     | 8:AV:818:G:C6     | 3.05        | 0.44     |
| 6:AM:533:LEU:HA   | 6:AM:544:LEU:HD23 | 1.99        | 0.44     |
| 6:BF:549:GLU:O    | 6:BF:549:GLU:CG   | 2.64        | 0.44     |
| 1:BO:136:LYS:O    | 1:BO:136:LYS:HG2  | 2.16        | 0.44     |
| 1:BO:114:ASP:OD1  | 4:BR:83:LEU:HD23  | 2.17        | 0.44     |
| 2:DI:232:VAL:CG2  | 2:DI:238:THR:HG23 | 2.46        | 0.44     |
| 1:AH:170:VAL:HG12 | 1:AH:171:LEU:N    | 2.32        | 0.44     |
| 8:BV:820:C:H2'    | 8:BV:821:G:C8     | 2.53        | 0.44     |
| 2:AP:206:PHE:CD1  | 2:AP:279:LEU:HB2  | 2.52        | 0.44     |
| 2:AP:293:GLU:OE1  | 3:AQ:397:SER:O    | 2.34        | 0.44     |
| 6:DM:521:VAL:CG1  | 6:DM:569:VAL:HG13 | 2.47        | 0.44     |
| 6:DM:522:LYS:HG2  | 6:DM:571:TYR:CE2  | 2.52        | 0.44     |
| 2:CP:237:ASN:ND2  | 8:CY:835:U:H3     | 2.15        | 0.44     |
| 5:AS:663:GLU:OE2  | 6:AT:573:ARG:NH1  | 2.50        | 0.44     |
| 7:BN:740:LEU:HD11 | 7:BN:762:ILE:HD12 | 1.98        | 0.44     |
| 3:CQ:359:PHE:CB   | 3:CQ:365:MET:HG2  | 2.45        | 0.44     |
| 3:DC:407:ILE:HA   | 6:DF:568:ASN:ND2  | 2.32        | 0.44     |
| 2:DP:210:LEU:HD21 | 2:DP:279:LEU:CD1  | 2.43        | 0.44     |
| 3:CJ:331:VAL:HG21 | 6:CM:563:LEU:CD1  | 2.46        | 0.44     |
| 4:AK:10:LEU:O     | 4:AK:13:ALA:HB3   | 2.17        | 0.44     |
| 7:DU:718:SER:C    | 7:DU:719:LEU:HD12 | 2.37        | 0.44     |
| 3:BJ:408:VAL:HG11 | 6:BM:564:ILE:HG12 | 1.93        | 0.44     |
| 5:AS:624:TYR:CE2  | 7:AU:761:VAL:HG23 | 2.50        | 0.44     |
| 2:CB:213:GLU:OE2  | 2:CB:274:LEU:HD21 | 2.16        | 0.44     |
| 5:CL:618:ILE:HA   | 7:CN:709:LEU:HD21 | 1.99        | 0.44     |
| 6:CT:511:LEU:CD2  | 6:CT:536:VAL:HG11 | 2.45        | 0.44     |
| 2:BI:245:MET:HE2  | 2:BI:258:LEU:HD22 | 2.00        | 0.44     |
| 4:BR:46:ILE:HG13  | 4:BR:58:LEU:O     | 2.18        | 0.44     |
| 2:BB:206:PHE:HB2  | 2:BB:276:LEU:HD22 | 1.99        | 0.44     |
| 2:AI:219:LEU:HD22 | 2:AI:264:ASN:ND2  | 2.32        | 0.44     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:AK:63:ILE:HD12  | 7:AN:769:MET:HE2  | 1.99        | 0.44     |
| 5:DS:688:GLN:OE1  | 7:DU:760:VAL:HG23 | 2.17        | 0.44     |
| 4:AD:27:VAL:HG11  | 4:AD:29:ARG:NH1   | 2.32        | 0.44     |
| 4:DD:12:GLU:HB3   | 4:DD:79:ASN:HD22  | 1.82        | 0.44     |
| 4:BK:18:VAL:HG11  | 4:BK:73:LEU:HD23  | 1.97        | 0.44     |
| 8:BX:843:C:H2'    | 8:BX:844:U:O5'    | 2.16        | 0.44     |
| 6:DF:585:ARG:O    | 6:DF:586:GLU:O    | 2.35        | 0.44     |
| 6:AT:532:TYR:N    | 6:AT:532:TYR:CD1  | 2.85        | 0.44     |
| 4:DR:39:MET:HB2   | 4:DR:65:GLY:HA3   | 1.98        | 0.44     |
| 4:CK:19:THR:HB    | 4:CK:72:ILE:HB    | 2.00        | 0.44     |
| 1:AO:144:ASP:N    | 1:AO:168:GLY:O    | 2.51        | 0.44     |
| 1:DH:131:PHE:HZ   | 1:DH:134:PHE:HB3  | 1.83        | 0.44     |
| 1:AH:175:GLU:HG3  | 1:AH:176:ASN:ND2  | 2.33        | 0.44     |
| 2:DP:276:LEU:HD12 | 2:DP:290:LYS:CB   | 2.47        | 0.44     |
| 5:CE:661:ALA:HB3  | 5:CE:677:ILE:CD1  | 2.46        | 0.44     |
| 7:DU:709:LEU:O    | 7:DU:713:MET:N    | 2.50        | 0.44     |
| 8:AV:859:A:C5     | 8:CX:814:A:C6     | 3.05        | 0.44     |
| 4:BK:5:VAL:HG23   | 4:BK:6:PRO:CD     | 2.46        | 0.44     |
| 2:BI:261:ARG:CZ   | 2:BI:263:ASN:HB3  | 2.48        | 0.44     |
| 5:AE:624:TYR:CE1  | 7:AG:761:VAL:CG2  | 3.00        | 0.44     |
| 7:BU:705:HIS:HB3  | 7:BU:734:PHE:HE2  | 1.81        | 0.44     |
| 8:CV:862:A:C4     | 8:CV:863:G:C8     | 3.06        | 0.44     |
| 2:AI:277:ASP:H    | 2:AI:290:LYS:HZ2  | 1.64        | 0.44     |
| 5:BE:653:TYR:O    | 5:BE:654:MET:CB   | 2.65        | 0.44     |
| 8:BV:839:C:O2'    | 8:BV:840:A:H5'    | 2.18        | 0.44     |
| 5:BE:678:MET:HB3  | 6:BF:572:ILE:CG2  | 2.46        | 0.44     |
| 6:AT:539:TYR:HB3  | 6:AT:541:ASN:ND2  | 2.32        | 0.44     |
| 6:AT:539:TYR:O    | 6:AT:566:CYS:HB3  | 2.18        | 0.44     |
| 1:AO:178:VAL:HG13 | 2:AP:264:ASN:ND2  | 2.32        | 0.44     |
| 1:CH:152:LYS:NZ   | 1:CH:160:GLU:HB2  | 2.33        | 0.44     |
| 1:DO:133:ALA:HB3  | 1:DO:141:ILE:HB   | 2.00        | 0.44     |
| 3:DQ:346:CYS:O    | 3:DQ:407:ILE:HD12 | 2.18        | 0.44     |
| 6:CF:510:PHE:CE2  | 6:CF:514:LEU:HD11 | 2.52        | 0.44     |
| 8:BV:852:U:O4     | 8:BV:853:A:N6     | 2.51        | 0.44     |
| 5:BS:691:SER:OG   | 7:BU:757:ILE:HD12 | 2.17        | 0.44     |
| 6:CF:530:LYS:NZ   | 6:CF:548:GLU:OE1  | 2.50        | 0.44     |
| 8:CV:849:G:O6     | 8:CV:850:G:C5     | 2.71        | 0.44     |
| 1:BO:123:ASP:OD1  | 1:BO:123:ASP:N    | 2.49        | 0.44     |
| 5:CS:667:LYS:O    | 5:CS:668:THR:CB   | 2.66        | 0.44     |
| 1:AH:167:LEU:CD1  | 1:AH:170:VAL:HG21 | 2.47        | 0.44     |
| 7:BU:746:VAL:HG23 | 7:BU:755:ASN:O    | 2.17        | 0.44     |
| 2:BP:269:ILE:HG22 | 2:BP:269:ILE:O    | 2.17        | 0.44     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:CO:112:HIS:O    | 1:CO:115:TYR:CD1  | 2.70        | 0.44     |
| 4:BR:33:ILE:HD11  | 4:BR:44:SER:OG    | 2.16        | 0.44     |
| 2:AP:287:VAL:CG2  | 2:AP:291:LYS:HE3  | 2.47        | 0.44     |
| 3:AQ:327:GLY:N    | 3:AQ:328:PRO:CD   | 2.81        | 0.44     |
| 3:CQ:332:LEU:O    | 3:CQ:359:PHE:HZ   | 2.01        | 0.44     |
| 7:DU:734:PHE:HD1  | 7:DU:740:LEU:CD2  | 2.26        | 0.44     |
| 3:AC:342:VAL:HG12 | 3:AC:356:VAL:HG23 | 1.99        | 0.44     |
| 3:BJ:347:ARG:HA   | 6:BM:525:TRP:CZ3  | 2.52        | 0.44     |
| 2:BP:204:VAL:HG12 | 2:BP:236:MET:HG3  | 2.00        | 0.44     |
| 8:BY:829:C:H5'    | 8:BY:830:A:OP1    | 2.16        | 0.44     |
| 6:AF:571:TYR:HD1  | 6:AF:572:ILE:N    | 2.16        | 0.44     |
| 5:BS:661:ALA:O    | 5:BS:673:GLN:HG3  | 2.18        | 0.44     |
| 5:AS:641:MET:C    | 5:AS:642:ARG:HG3  | 2.36        | 0.44     |
| 3:AC:407:ILE:CD1  | 6:AF:525:TRP:CZ2  | 3.00        | 0.44     |
| 2:CB:210:LEU:HB2  | 2:CB:229:ILE:HD12 | 1.98        | 0.44     |
| 8:DV:814:A:C6     | 8:DV:815:A:C6     | 3.05        | 0.44     |
| 2:BI:262:GLY:HA2  | 2:BI:265:ILE:CD1  | 2.43        | 0.44     |
| 8:CY:842:U:N3     | 8:CY:843:C:C4     | 2.86        | 0.44     |
| 2:CP:286:LYS:HE3  | 3:CQ:358:ALA:HB2  | 1.98        | 0.44     |
| 2:CP:290:LYS:HE3  | 2:CP:294:ALA:HB2  | 1.98        | 0.44     |
| 8:DX:849:G:C2     | 8:DX:857:U:O2     | 2.71        | 0.44     |
| 3:DJ:313:PRO:N    | 3:DJ:337:LYS:HZ1  | 2.14        | 0.44     |
| 1:DH:186:PRO:HA   | 1:DH:187:PRO:HD3  | 1.77        | 0.44     |
| 1:AA:132:LYS:HG3  | 1:AA:143:CYS:SG   | 2.58        | 0.44     |
| 3:AJ:346:CYS:HB2  | 3:AJ:350:LYS:HB2  | 1.99        | 0.44     |
| 4:BD:10:LEU:CD2   | 4:BD:35:ALA:HB1   | 2.48        | 0.44     |
| 8:AV:807:A:H2     | 8:AV:822:G:H22    | 1.65        | 0.44     |
| 2:CP:253:VAL:HG12 | 2:CP:255:LEU:HG   | 2.00        | 0.44     |
| 5:CL:647:ILE:HG23 | 5:CL:647:ILE:O    | 2.18        | 0.44     |
| 3:DC:385:LYS:O    | 3:DC:386:LYS:HG2  | 2.17        | 0.44     |
| 2:BP:224:GLN:O    | 2:BP:246:THR:N    | 2.41        | 0.44     |
| 6:BF:515:THR:HA   | 6:BF:533:LEU:HD23 | 2.00        | 0.44     |
| 2:CI:287:VAL:HA   | 2:CI:290:LYS:HG2  | 2.00        | 0.44     |
| 3:CJ:347:ARG:NH2  | 8:CX:839:C:O4'    | 2.45        | 0.44     |
| 2:DP:274:LEU:HB3  | 3:DQ:398:LYS:HZ2  | 1.82        | 0.44     |
| 3:BQ:358:ALA:HB3  | 3:BQ:366:VAL:CB   | 2.47        | 0.44     |
| 3:BQ:408:VAL:CG1  | 6:BT:562:VAL:CG1  | 2.96        | 0.44     |
| 5:CL:636:TYR:HD1  | 5:CL:685:THR:HB   | 1.83        | 0.44     |
| 6:BT:511:LEU:HD11 | 6:BT:540:MET:CE   | 2.47        | 0.44     |
| 3:AC:361:ARG:NE   | 8:AV:830:A:H5'    | 2.33        | 0.44     |
| 7:BU:713:MET:HE1  | 7:BU:732:ARG:O    | 2.17        | 0.44     |
| 1:DA:140:LEU:HD11 | 1:DA:180:MET:SD   | 2.58        | 0.44     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:DX:852:U:H2'    | 8:DX:853:A:C8     | 2.53        | 0.44     |
| 5:CL:643:ILE:HG23 | 5:CL:662:GLU:O    | 2.16        | 0.44     |
| 7:CU:741:VAL:HA   | 7:CU:760:VAL:O    | 2.16        | 0.44     |
| 2:CB:219:LEU:O    | 2:CB:222:GLY:N    | 2.40        | 0.44     |
| 1:AH:113:ILE:HG22 | 1:AH:114:ASP:N    | 2.32        | 0.44     |
| 3:AJ:335:SER:CB   | 3:AJ:411:ARG:NH2  | 2.80        | 0.44     |
| 8:AX:813:G:C4     | 8:AX:815:A:OP1    | 2.71        | 0.44     |
| 1:DO:135:ASP:HB3  | 4:DR:6:PRO:HG2    | 2.00        | 0.44     |
| 1:DO:138:MET:HB2  | 8:DY:835:U:C5     | 2.53        | 0.44     |
| 8:CY:814:A:N1     | 8:CY:815:A:C5     | 2.85        | 0.44     |
| 3:BQ:392:LYS:NZ   | 8:BV:868:G:H2'    | 2.33        | 0.44     |
| 8:CY:848:U:H2'    | 8:CY:849:G:H5''   | 1.98        | 0.44     |
| 2:DP:211:SER:O    | 2:DP:212:HIS:CB   | 2.65        | 0.44     |
| 3:DQ:388:LYS:H    | 3:DQ:389:PRO:CD   | 2.30        | 0.44     |
| 1:BO:133:ALA:HB3  | 1:BO:141:ILE:HG12 | 1.99        | 0.44     |
| 7:AU:732:ARG:HE   | 7:AU:743:ASP:HB3  | 1.82        | 0.44     |
| 1:CH:109:MET:HB3  | 1:CH:134:PHE:CZ   | 2.52        | 0.44     |
| 4:DK:23:ASN:CA    | 4:DK:69:ARG:HH21  | 2.31        | 0.44     |
| 4:DR:82:MET:HG3   | 4:DR:83:LEU:HD12  | 1.99        | 0.44     |
| 6:AF:528:GLU:H    | 6:AF:551:ILE:HG22 | 1.82        | 0.44     |
| 3:CJ:379:LYS:HG2  | 3:CJ:380:SER:N    | 2.32        | 0.44     |
| 5:AS:615:VAL:O    | 5:AS:617:PRO:HD2  | 2.17        | 0.44     |
| 6:BM:532:TYR:CE1  | 6:BM:546:ASN:ND2  | 2.86        | 0.44     |
| 7:BG:738:MET:CB   | 7:BG:764:GLY:HA3  | 2.47        | 0.44     |
| 2:DI:254:GLN:O    | 2:DI:255:LEU:HD23 | 2.18        | 0.44     |
| 2:AP:293:GLU:HG3  | 3:AQ:368:GLU:HB2  | 1.89        | 0.44     |
| 2:CI:203:LEU:C    | 2:CI:203:LEU:HD23 | 2.38        | 0.44     |
| 6:AT:523:LEU:C    | 6:AT:570:LEU:HG   | 2.38        | 0.44     |
| 2:AI:280:LEU:CD2  | 2:AI:286:LYS:CD   | 2.72        | 0.44     |
| 7:DU:719:LEU:HD21 | 7:DU:740:LEU:HD12 | 1.98        | 0.44     |
| 7:DU:717:LEU:HD12 | 7:DU:731:LEU:HB2  | 1.98        | 0.44     |
| 6:AF:558:HIS:CE1  | 3:AQ:413:PRO:HD2  | 2.51        | 0.44     |
| 3:BQ:332:LEU:HD12 | 6:BT:563:LEU:CD2  | 2.48        | 0.44     |
| 2:BP:208:MET:SD   | 2:BP:232:VAL:O    | 2.75        | 0.44     |
| 7:AG:757:ILE:CG2  | 7:AG:758:GLY:N    | 2.81        | 0.44     |
| 3:AC:358:ALA:O    | 3:AC:365:MET:HA   | 2.18        | 0.44     |
| 2:CI:205:ARG:HA   | 2:CI:208:MET:HG3  | 1.98        | 0.44     |
| 3:BC:407:ILE:O    | 3:BC:408:VAL:CG2  | 2.65        | 0.44     |
| 3:BC:335:SER:HB2  | 3:BC:411:ARG:NH1  | 2.32        | 0.44     |
| 5:DS:634:TRP:HZ2  | 5:DS:642:ARG:HD2  | 1.82        | 0.44     |
| 7:DG:763:ARG:O    | 7:DG:764:GLY:C    | 2.55        | 0.44     |
| 4:DK:44:SER:HA    | 4:DK:59:GLU:O     | 2.18        | 0.44     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AB:286:LYS:HE2  | 3:AC:357:LYS:HA   | 2.00        | 0.44     |
| 6:DF:522:LYS:HB3  | 6:DF:571:TYR:CE2  | 2.52        | 0.44     |
| 3:DQ:331:VAL:O    | 3:DQ:331:VAL:CG1  | 2.65        | 0.44     |
| 1:CO:149:ARG:HB2  | 1:CO:163:GLU:O    | 2.18        | 0.44     |
| 8:BX:857:U:O2'    | 8:DV:815:A:N3     | 2.48        | 0.44     |
| 5:CL:667:LYS:HG3  | 5:CL:667:LYS:O    | 2.18        | 0.44     |
| 3:AJ:327:GLY:O    | 3:AJ:330:SER:CB   | 2.66        | 0.44     |
| 5:CE:651:ASP:HA   | 6:CF:505:LEU:CD2  | 2.48        | 0.44     |
| 1:CH:109:MET:O    | 1:CH:113:ILE:HD13 | 2.17        | 0.44     |
| 8:BV:864:A:C2     | 8:BV:865:C:C2     | 3.05        | 0.44     |
| 3:DC:342:VAL:HG11 | 3:DC:409:VAL:HG13 | 1.98        | 0.44     |
| 1:AA:144:ASP:OD1  | 1:AA:144:ASP:N    | 2.51        | 0.44     |
| 8:BY:853:A:O2'    | 8:BY:854:A:C5'    | 2.65        | 0.44     |
| 1:BH:182:VAL:HB   | 2:BI:257:THR:HG23 | 1.99        | 0.44     |
| 7:BG:774:GLU:HG3  | 7:BG:775:ARG:HG3  | 1.98        | 0.44     |
| 1:AA:118:ARG:HH11 | 1:AA:126:ILE:HG21 | 1.83        | 0.44     |
| 1:DH:108:LYS:O    | 1:DH:111:GLN:HB3  | 2.17        | 0.44     |
| 1:CO:131:PHE:CE1  | 1:CO:140:LEU:HD22 | 2.50        | 0.44     |
| 7:DU:719:LEU:CD2  | 7:DU:740:LEU:HD12 | 2.48        | 0.44     |
| 8:AV:846:U:O4     | 8:AV:858:A:C8     | 2.71        | 0.44     |
| 1:BH:118:ARG:CZ   | 1:BH:128:ILE:CD1  | 2.96        | 0.44     |
| 3:BQ:368:GLU:HA   | 3:BQ:397:SER:O    | 2.17        | 0.44     |
| 5:BS:677:ILE:CG2  | 5:BS:679:LEU:HD23 | 2.48        | 0.44     |
| 5:DS:662:GLU:HA   | 5:DS:672:LYS:O    | 2.17        | 0.44     |
| 2:DB:287:VAL:HG13 | 2:DB:290:LYS:CD   | 2.29        | 0.44     |
| 4:DK:43:MET:HB3   | 4:DK:46:ILE:HG21  | 1.99        | 0.44     |
| 3:AJ:331:VAL:CA   | 3:AJ:418:LYS:O    | 2.66        | 0.44     |
| 3:DQ:342:VAL:CG1  | 3:DQ:409:VAL:HG13 | 2.45        | 0.44     |
| 7:CG:737:PHE:CE1  | 8:CV:833:U:C5'    | 2.99        | 0.44     |
| 1:CO:150:LYS:O    | 1:CO:151:ILE:HD13 | 2.17        | 0.44     |
| 5:BL:666:SER:C    | 5:BL:668:THR:H    | 2.20        | 0.44     |
| 8:AY:807:A:C3'    | 8:AY:808:C:H5"    | 2.48        | 0.44     |
| 3:DC:330:SER:HG   | 3:DC:334:GLN:NE2  | 2.13        | 0.44     |
| 3:CQ:357:LYS:HB2  | 3:CQ:368:GLU:OE2  | 2.17        | 0.44     |
| 7:DU:746:VAL:HA   | 7:DU:756:ASN:CB   | 2.47        | 0.44     |
| 8:BX:850:G:N2     | 8:BX:851:G:H1'    | 2.32        | 0.44     |
| 6:AM:504:PRO:O    | 6:AM:509:PRO:CG   | 2.65        | 0.44     |
| 5:BL:690:VAL:HG23 | 5:BS:631:ILE:HA   | 2.00        | 0.44     |
| 5:BS:631:ILE:CG2  | 5:BS:632:GLN:N    | 2.80        | 0.44     |
| 5:AE:642:ARG:O    | 5:AE:664:ILE:N    | 2.47        | 0.44     |
| 1:BH:170:VAL:HG12 | 1:BH:171:LEU:H    | 1.81        | 0.44     |
| 3:CJ:412:ASN:HB3  | 3:CJ:413:PRO:HD3  | 2.00        | 0.44     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CC:316:LEU:O    | 3:CC:319:ARG:HG2  | 2.18        | 0.44     |
| 2:AP:277:ASP:CB   | 2:AP:290:LYS:NZ   | 2.65        | 0.44     |
| 2:DI:217:ILE:HG12 | 2:DI:268:PHE:CE2  | 2.52        | 0.44     |
| 3:AQ:327:GLY:HA3  | 6:AT:535:SER:OG   | 2.17        | 0.44     |
| 3:AJ:347:ARG:CA   | 6:AM:525:TRP:HH2  | 2.28        | 0.44     |
| 5:AL:624:TYR:CZ   | 7:AN:761:VAL:HG21 | 2.39        | 0.44     |
| 6:CM:524:LYS:HA   | 6:CM:570:LEU:HD11 | 2.00        | 0.44     |
| 8:CX:813:G:C2     | 8:CX:815:A:OP1    | 2.71        | 0.44     |
| 3:AC:345:ASN:ND2  | 3:AC:410:LEU:HD11 | 2.29        | 0.44     |
| 2:BP:276:LEU:H    | 2:BP:290:LYS:HG3  | 1.83        | 0.44     |
| 5:BS:656:LEU:HD11 | 5:BS:684:ILE:CD1  | 2.48        | 0.44     |
| 3:AC:407:ILE:HD12 | 6:AF:525:TRP:CH2  | 2.53        | 0.44     |
| 6:CF:524:LYS:HG3  | 8:CV:839:C:N4     | 2.33        | 0.44     |
| 3:BC:407:ILE:C    | 3:BC:408:VAL:HG23 | 2.38        | 0.44     |
| 3:BC:336:VAL:CG1  | 3:BC:337:LYS:N    | 2.81        | 0.44     |
| 2:AB:230:THR:HG21 | 2:AB:241:LYS:CG   | 2.37        | 0.44     |
| 8:AX:858:A:H1'    | 8:AX:859:A:N7     | 2.32        | 0.44     |
| 2:BI:262:GLY:CA   | 2:BI:265:ILE:HD12 | 2.43        | 0.44     |
| 3:BJ:358:ALA:HB3  | 3:BJ:366:VAL:CG2  | 2.48        | 0.44     |
| 5:BL:661:ALA:HB1  | 5:BL:677:ILE:HD12 | 1.97        | 0.44     |
| 3:AQ:362:HIS:CE1  | 8:AY:836:U:H2'    | 2.53        | 0.44     |
| 3:CQ:353:LEU:O    | 3:CQ:370:VAL:HA   | 2.18        | 0.44     |
| 3:DQ:388:LYS:H    | 3:DQ:389:PRO:HD2  | 1.80        | 0.44     |
| 4:AD:48:VAL:HG12  | 4:AD:56:ALA:O     | 2.18        | 0.44     |
| 4:BK:87:LYS:O     | 4:BK:91:GLN:HB2   | 2.17        | 0.44     |
| 4:BD:36:GLU:OE1   | 7:BG:704:ALA:CB   | 2.66        | 0.44     |
| 8:AY:840:A:C2     | 8:AY:841:G:N9     | 2.86        | 0.44     |
| 2:CB:202:LYS:CE   | 2:CB:204:VAL:HG22 | 2.44        | 0.44     |
| 4:BR:68:ILE:CD1   | 4:BR:71:LEU:HD11  | 2.46        | 0.44     |
| 4:BD:20:CYS:HB2   | 4:BD:71:LEU:CD2   | 2.47        | 0.44     |
| 2:CP:206:PHE:CE1  | 2:CP:279:LEU:HD13 | 2.53        | 0.44     |
| 3:AJ:350:LYS:HG2  | 3:AJ:374:TRP:CB   | 2.48        | 0.44     |
| 3:DC:390:VAL:CG1  | 3:DC:391:ASN:N    | 2.80        | 0.44     |
| 8:BY:810:A:C6     | 8:BY:811:C:C4     | 3.06        | 0.44     |
| 2:DI:253:VAL:CG1  | 2:DI:255:LEU:HD21 | 2.48        | 0.44     |
| 4:AR:70:PHE:C     | 4:AR:70:PHE:CD1   | 2.91        | 0.44     |
| 6:CF:547:THR:HG21 | 6:CF:562:VAL:HB   | 1.99        | 0.43     |
| 2:DI:266:ARG:NH2  | 3:DJ:347:ARG:NH2  | 2.65        | 0.43     |
| 6:DM:539:TYR:CD2  | 8:DX:837:G:N1     | 2.85        | 0.43     |
| 8:DX:838:A:O2'    | 8:DX:839:C:H5'    | 2.18        | 0.43     |
| 2:DI:293:GLU:HB2  | 3:DJ:368:GLU:HG2  | 1.99        | 0.43     |
| 2:DI:286:LYS:HD2  | 3:DJ:357:LYS:HZ1  | 1.79        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CQ:407:ILE:HG12 | 6:CT:568:ASN:CG   | 2.37        | 0.43     |
| 1:CH:132:LYS:HG3  | 4:CK:84:LYS:CD    | 2.48        | 0.43     |
| 8:BX:837:G:H5'    | 8:BX:838:A:OP1    | 2.18        | 0.43     |
| 2:BP:206:PHE:HE1  | 2:BP:279:LEU:HB2  | 1.76        | 0.43     |
| 5:AE:624:TYR:CE1  | 5:AE:628:ARG:HG3  | 2.53        | 0.43     |
| 5:AS:634:TRP:HB3  | 5:AS:688:GLN:O    | 2.19        | 0.43     |
| 3:AC:347:ARG:HB3  | 3:AC:405:SER:HA   | 2.00        | 0.43     |
| 5:CS:651:ASP:OD1  | 5:CS:655:ASN:N    | 2.45        | 0.43     |
| 7:CU:731:LEU:HD12 | 7:CU:732:ARG:N    | 2.33        | 0.43     |
| 7:CU:719:LEU:HG   | 7:CU:770:LEU:CD1  | 2.48        | 0.43     |
| 7:CN:709:LEU:O    | 7:CN:713:MET:HB2  | 2.18        | 0.43     |
| 5:DS:634:TRP:HZ2  | 5:DS:642:ARG:CD   | 2.31        | 0.43     |
| 3:DJ:352:LEU:HD23 | 3:DJ:372:GLU:HB2  | 1.99        | 0.43     |
| 1:AA:112:HIS:C    | 1:AA:115:TYR:CD2  | 2.91        | 0.43     |
| 2:AB:212:HIS:HA   | 2:AB:228:THR:CG2  | 2.48        | 0.43     |
| 1:AA:108:LYS:HE3  | 2:AB:231:GLY:HA3  | 2.00        | 0.43     |
| 2:AB:212:HIS:CD2  | 2:BB:211:SER:HB3  | 2.53        | 0.43     |
| 5:DE:674:LEU:HD13 | 6:DF:573:ARG:HD3  | 2.00        | 0.43     |
| 1:DH:149:ARG:O    | 1:DH:150:LYS:HD3  | 2.18        | 0.43     |
| 3:AC:394:ARG:NE   | 3:AC:396:ILE:HD11 | 2.33        | 0.43     |
| 2:BP:217:ILE:CG2  | 2:BP:265:ILE:CG2  | 2.95        | 0.43     |
| 1:DH:172:LEU:HD21 | 1:DH:177:LEU:CD1  | 2.48        | 0.43     |
| 8:AY:852:U:H4'    | 7:CU:706:PRO:CG   | 2.42        | 0.43     |
| 3:AC:352:LEU:HD22 | 3:AC:372:GLU:CB   | 2.43        | 0.43     |
| 6:BF:552:ASP:O    | 3:BQ:392:LYS:CA   | 2.60        | 0.43     |
| 3:DQ:378:PRO:HB3  | 3:DQ:388:LYS:HG2  | 1.99        | 0.43     |
| 8:AY:851:G:C2     | 8:AY:853:A:OP1    | 2.71        | 0.43     |
| 1:BO:115:TYR:O    | 1:BO:131:PHE:N    | 2.50        | 0.43     |
| 2:CI:265:ILE:HG21 | 2:CI:268:PHE:CZ   | 2.53        | 0.43     |
| 8:CX:865:C:O2'    | 8:CX:866:U:H5'    | 2.18        | 0.43     |
| 2:AB:292:ARG:NH2  | 6:AT:583:GLU:O    | 2.51        | 0.43     |
| 1:AA:169:LEU:HG   | 4:AD:73:LEU:HD12  | 1.99        | 0.43     |
| 3:BQ:355:ARG:NH1  | 3:BQ:369:ASN:HD22 | 2.16        | 0.43     |
| 2:BI:295:VAL:O    | 2:BI:295:VAL:HG12 | 2.18        | 0.43     |
| 3:BJ:350:LYS:HB3  | 3:BJ:374:TRP:HB3  | 1.99        | 0.43     |
| 5:BE:673:GLN:HB2  | 5:BE:673:GLN:HE21 | 1.65        | 0.43     |
| 5:BL:650:PHE:O    | 6:BM:506:ASN:OD1  | 2.36        | 0.43     |
| 1:CO:137:HIS:NE2  | 8:CY:834:U:H2'    | 2.34        | 0.43     |
| 1:CO:181:THR:HB   | 2:CP:258:LEU:HD13 | 2.00        | 0.43     |
| 5:AS:636:TYR:HB3  | 5:AS:686:LEU:HB2  | 2.00        | 0.43     |
| 3:AJ:348:ASN:O    | 3:AJ:349:ASN:CG   | 2.56        | 0.43     |
| 3:CJ:361:ARG:C    | 3:CJ:363:CYS:H    | 2.21        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AI:280:LEU:HD13 | 2:AI:286:LYS:CG   | 2.48        | 0.43     |
| 1:AA:159:ALA:CB   | 8:AV:849:G:P      | 3.05        | 0.43     |
| 8:AV:858:A:H5'    | 8:AV:859:A:OP2    | 2.18        | 0.43     |
| 6:DM:519:VAL:HB   | 6:DM:573:ARG:O    | 2.18        | 0.43     |
| 6:CF:565:ARG:NH2  | 8:CV:837:G:C2     | 2.85        | 0.43     |
| 8:CV:864:A:C5     | 8:CV:865:C:C4     | 3.06        | 0.43     |
| 6:CT:506:ASN:N    | 6:CT:507:PRO:HD3  | 2.33        | 0.43     |
| 6:DT:511:LEU:HD11 | 6:DT:540:MET:SD   | 2.58        | 0.43     |
| 1:DO:169:LEU:HB3  | 4:DR:73:LEU:O     | 2.18        | 0.43     |
| 2:CI:233:ASP:OD1  | 2:CI:237:ASN:HB2  | 2.18        | 0.43     |
| 2:DB:293:GLU:CG   | 3:DC:398:LYS:HE2  | 2.48        | 0.43     |
| 7:DN:758:GLY:HA2  | 5:DS:630:ARG:CZ   | 2.48        | 0.43     |
| 7:DN:758:GLY:HA2  | 5:DS:630:ARG:NH2  | 2.33        | 0.43     |
| 3:BC:358:ALA:HB3  | 3:BC:366:VAL:HG23 | 1.98        | 0.43     |
| 7:DG:737:PHE:HB2  | 7:DG:739:ASN:HD21 | 1.83        | 0.43     |
| 2:AB:212:HIS:O    | 2:AB:228:THR:HG23 | 2.18        | 0.43     |
| 6:BF:571:TYR:HD1  | 6:BF:572:ILE:N    | 2.16        | 0.43     |
| 8:AY:807:A:H3'    | 8:AY:808:C:C5'    | 2.48        | 0.43     |
| 3:BJ:361:ARG:CG   | 8:BX:830:A:H5'    | 2.45        | 0.43     |
| 8:DX:848:U:H3'    | 8:DX:849:G:C5'    | 2.47        | 0.43     |
| 1:CA:190:THR:O    | 1:CA:194:ARG:N    | 2.36        | 0.43     |
| 2:BI:244:LYS:CD   | 2:BI:254:GLN:HE22 | 2.32        | 0.43     |
| 6:DT:536:VAL:HA   | 6:DT:541:ASN:O    | 2.18        | 0.43     |
| 1:DH:183:GLU:O    | 1:DH:183:GLU:CG   | 2.66        | 0.43     |
| 1:DH:130:THR:HG22 | 1:DH:132:LYS:HD3  | 2.00        | 0.43     |
| 1:DH:154:LYS:NZ   | 1:DH:154:LYS:HB2  | 2.34        | 0.43     |
| 1:BO:189:ASP:HA   | 1:BO:192:ILE:HD12 | 2.00        | 0.43     |
| 3:DJ:353:LEU:HB3  | 3:DJ:373:MET:HE1  | 2.00        | 0.43     |
| 6:CF:544:LEU:HB3  | 6:CF:547:THR:HB   | 1.99        | 0.43     |
| 3:DJ:410:LEU:CD2  | 6:DM:562:VAL:HG21 | 2.48        | 0.43     |
| 8:DX:842:U:C3'    | 8:DX:843:C:H5'    | 2.47        | 0.43     |
| 8:DX:842:U:C3'    | 8:DX:843:C:C5'    | 2.96        | 0.43     |
| 5:BL:621:ILE:HD11 | 7:BN:739:ASN:C    | 2.39        | 0.43     |
| 3:CJ:342:VAL:CG2  | 3:CJ:356:VAL:HG23 | 2.48        | 0.43     |
| 8:CX:839:C:H2'    | 8:CX:840:A:O4'    | 2.18        | 0.43     |
| 5:CE:621:ILE:HG22 | 5:CE:625:LEU:HG   | 2.00        | 0.43     |
| 7:DU:734:PHE:CE1  | 7:DU:738:MET:HA   | 2.53        | 0.43     |
| 3:BJ:407:ILE:HG23 | 6:BM:568:ASN:HB3  | 2.00        | 0.43     |
| 8:CV:866:U:C3'    | 8:CV:867:G:C5'    | 2.97        | 0.43     |
| 2:AI:207:LEU:HD12 | 2:AI:236:MET:CE   | 2.49        | 0.43     |
| 7:CU:730:ILE:HG21 | 7:CU:732:ARG:CZ   | 2.49        | 0.43     |
| 2:DB:284:GLU:N    | 2:DB:285:PRO:HD2  | 2.33        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:DK:57:GLN:O     | 4:DK:58:LEU:HD23  | 2.19        | 0.43     |
| 8:BV:854:A:C3'    | 8:BV:855:C:H5''   | 2.33        | 0.43     |
| 3:AC:386:LYS:HG2  | 3:AC:387:SER:N    | 2.33        | 0.43     |
| 1:BA:173:ARG:NH2  | 4:BD:66:SER:HA    | 2.34        | 0.43     |
| 7:AU:730:ILE:CG2  | 7:AU:732:ARG:CZ   | 2.96        | 0.43     |
| 5:AS:682:ASP:HA   | 7:AU:763:ARG:HH12 | 1.82        | 0.43     |
| 4:BK:14:GLU:HG3   | 4:BK:33:ILE:O     | 2.18        | 0.43     |
| 7:AU:722:ASN:C    | 7:AU:724:GLY:N    | 2.71        | 0.43     |
| 4:BK:46:ILE:HD12  | 4:BK:46:ILE:O     | 2.18        | 0.43     |
| 8:DY:818:G:H2'    | 8:DY:819:U:C6     | 2.53        | 0.43     |
| 4:BK:88:ASN:OD1   | 4:BK:88:ASN:O     | 2.36        | 0.43     |
| 2:CP:227:GLY:HA2  | 2:CP:242:ALA:O    | 2.18        | 0.43     |
| 2:CP:243:VAL:HG11 | 2:CP:258:LEU:HD22 | 1.99        | 0.43     |
| 5:BE:664:ILE:HD13 | 5:BE:670:SER:HB2  | 2.01        | 0.43     |
| 4:BK:64:ARG:HH12  | 7:BN:738:MET:HG3  | 1.83        | 0.43     |
| 7:BU:734:PHE:CD1  | 7:BU:740:LEU:HG   | 2.52        | 0.43     |
| 3:CC:407:ILE:CD1  | 6:CF:525:TRP:CZ2  | 3.01        | 0.43     |
| 3:CC:364:ASN:ND2  | 8:CV:836:U:O2     | 2.50        | 0.43     |
| 6:CT:506:ASN:N    | 6:CT:507:PRO:HD2  | 2.32        | 0.43     |
| 2:CI:204:VAL:HG13 | 2:CI:236:MET:CA   | 2.48        | 0.43     |
| 2:BB:203:LEU:HD12 | 2:BB:279:LEU:HD21 | 2.01        | 0.43     |
| 7:DG:739:ASN:OD1  | 7:DG:763:ARG:HA   | 2.18        | 0.43     |
| 3:DJ:374:TRP:CZ2  | 3:DJ:392:LYS:CE   | 3.01        | 0.43     |
| 7:AN:705:HIS:N    | 7:AN:706:PRO:CD   | 2.81        | 0.43     |
| 6:AT:537:ASP:OD1  | 6:AT:541:ASN:HB2  | 2.19        | 0.43     |
| 4:AR:20:CYS:N     | 4:AR:28:TYR:O     | 2.39        | 0.43     |
| 2:BI:212:HIS:HD2  | 2:BI:228:THR:HG21 | 1.80        | 0.43     |
| 4:DR:28:TYR:CZ    | 4:DR:48:VAL:HG21  | 2.52        | 0.43     |
| 5:CE:650:PHE:O    | 6:CF:505:LEU:HD23 | 2.17        | 0.43     |
| 8:BV:849:G:H2'    | 8:BV:850:G:C8     | 2.53        | 0.43     |
| 7:DN:734:PHE:CD1  | 7:DN:735:ASP:N    | 2.87        | 0.43     |
| 1:AO:134:PHE:HA   | 1:AO:139:ASN:O    | 2.17        | 0.43     |
| 3:CC:324:PHE:CE2  | 3:CC:325:ASN:HB2  | 2.53        | 0.43     |
| 2:BB:251:GLU:HG3  | 2:BB:252:PRO:HD2  | 2.01        | 0.43     |
| 1:BA:133:ALA:HB3  | 1:BA:141:ILE:HB   | 2.00        | 0.43     |
| 6:BF:578:GLU:O    | 6:BF:581:ASP:N    | 2.52        | 0.43     |
| 1:DA:186:PRO:HB2  | 1:DA:189:ASP:HB2  | 2.00        | 0.43     |
| 2:CP:237:ASN:ND2  | 8:CY:835:U:N3     | 2.66        | 0.43     |
| 2:CI:276:LEU:HD11 | 3:CJ:357:LYS:NZ   | 2.11        | 0.43     |
| 7:BG:729:GLY:HA3  | 7:BG:742:ILE:CG2  | 2.48        | 0.43     |
| 8:AX:839:C:HO2'   | 8:AX:840:A:C4'    | 2.32        | 0.43     |
| 5:BL:653:TYR:HB2  | 8:BX:831:A:C2     | 2.53        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CQ:350:LYS:HG2  | 3:CQ:374:TRP:HB2  | 1.99        | 0.43     |
| 3:CQ:410:LEU:HB3  | 6:CT:559:LEU:HD22 | 2.01        | 0.43     |
| 4:AK:20:CYS:HA    | 4:AK:71:LEU:HD23  | 2.01        | 0.43     |
| 2:AI:258:LEU:HD12 | 2:AI:259:SER:N    | 2.31        | 0.43     |
| 3:DQ:343:LEU:HD23 | 3:DQ:410:LEU:CD1  | 2.49        | 0.43     |
| 2:BP:236:MET:HE1  | 3:BQ:364:ASN:HD21 | 1.84        | 0.43     |
| 3:AC:362:HIS:O    | 3:AC:363:CYS:HB3  | 2.17        | 0.43     |
| 1:DO:195:VAL:HG22 | 1:DO:195:VAL:O    | 2.17        | 0.43     |
| 2:DP:204:VAL:CG1  | 2:DP:236:MET:CE   | 2.87        | 0.43     |
| 2:AB:275:PRO:HD2  | 2:BB:275:PRO:CB   | 2.48        | 0.43     |
| 2:BB:267:TYR:CA   | 3:BC:400:PHE:O    | 2.66        | 0.43     |
| 3:BC:362:HIS:NE2  | 8:BV:836:U:C5     | 2.87        | 0.43     |
| 5:BS:642:ARG:CG   | 5:BS:664:ILE:HB   | 2.46        | 0.43     |
| 1:CA:137:HIS:O    | 1:CA:137:HIS:ND1  | 2.51        | 0.43     |
| 2:BB:212:HIS:C    | 2:BB:228:THR:CG2  | 2.87        | 0.43     |
| 6:AT:539:TYR:CD1  | 6:AT:566:CYS:HB3  | 2.54        | 0.43     |
| 8:AX:856:C:C4     | 8:AX:857:U:C5     | 3.06        | 0.43     |
| 8:AX:852:U:O4     | 8:AX:853:A:N6     | 2.51        | 0.43     |
| 4:DK:48:VAL:CG1   | 4:DK:48:VAL:O     | 2.66        | 0.43     |
| 8:AV:810:A:H2'    | 8:AV:811:C:C6     | 2.53        | 0.43     |
| 1:AH:143:CYS:HB3  | 4:AK:84:LYS:HZ2   | 1.83        | 0.43     |
| 3:AC:352:LEU:CD2  | 3:AC:372:GLU:HB3  | 2.42        | 0.43     |
| 3:BC:326:THR:O    | 3:BC:330:SER:CB   | 2.61        | 0.43     |
| 7:BG:715:LYS:O    | 7:BG:717:LEU:HG   | 2.17        | 0.43     |
| 7:CN:744:GLU:HA   | 7:CN:757:ILE:O    | 2.18        | 0.43     |
| 5:AL:634:TRP:CE3  | 5:AL:644:GLU:HB2  | 2.52        | 0.43     |
| 1:CH:187:PRO:O    | 1:CH:190:THR:N    | 2.51        | 0.43     |
| 5:BL:628:ARG:O    | 5:BL:631:ILE:HD12 | 2.18        | 0.43     |
| 8:AX:806:G:H2'    | 8:AX:807:A:C8     | 2.53        | 0.43     |
| 7:CU:715:LYS:O    | 7:CU:717:LEU:HG   | 2.18        | 0.43     |
| 4:DD:36:GLU:OE2   | 7:DG:708:GLU:HG3  | 2.18        | 0.43     |
| 8:CX:805:U:H2'    | 8:CX:806:G:O4'    | 2.18        | 0.43     |
| 3:DQ:412:ASN:HB2  | 3:DQ:413:PRO:CD   | 2.49        | 0.43     |
| 8:CV:817:A:H2'    | 8:CV:818:G:C8     | 2.54        | 0.43     |
| 1:CO:167:LEU:HB3  | 1:CO:170:VAL:HG22 | 1.99        | 0.43     |
| 4:DK:49:THR:OG1   | 4:DK:55:VAL:HG22  | 2.18        | 0.43     |
| 3:AC:371:LYS:HG2  | 3:AC:395:TYR:CD2  | 2.54        | 0.43     |
| 2:DB:254:GLN:C    | 2:DB:255:LEU:HD23 | 2.39        | 0.43     |
| 2:DI:284:GLU:HB2  | 2:DI:285:PRO:HD3  | 2.00        | 0.43     |
| 2:CI:270:LEU:HD11 | 3:CJ:400:PHE:HB2  | 2.00        | 0.43     |
| 5:AS:678:MET:O    | 6:AT:571:TYR:HB2  | 2.18        | 0.43     |
| 6:DF:540:MET:O    | 6:DF:542:MET:HG3  | 2.19        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CM:537:ASP:OD2  | 6:CM:541:ASN:HB2  | 2.17        | 0.43     |
| 5:CE:621:ILE:CD1  | 7:CG:741:VAL:HB   | 2.48        | 0.43     |
| 7:DU:705:HIS:CG   | 7:DU:736:PRO:HA   | 2.54        | 0.43     |
| 8:AV:859:A:C4     | 8:CX:814:A:C5     | 3.06        | 0.43     |
| 6:BM:539:TYR:CG   | 8:BX:837:G:C6     | 3.05        | 0.43     |
| 8:AV:837:G:O3'    | 8:AV:838:A:O4'    | 2.36        | 0.43     |
| 1:CA:138:MET:HG2  | 8:CV:835:U:C4     | 2.53        | 0.43     |
| 3:CC:361:ARG:C    | 3:CC:363:CYS:N    | 2.72        | 0.43     |
| 3:BJ:338:ASN:O    | 3:BJ:339:ASN:HB3  | 2.19        | 0.43     |
| 5:DS:631:ILE:CG2  | 5:DS:632:GLN:N    | 2.81        | 0.43     |
| 3:DJ:401:LEU:HD12 | 3:DJ:402:ARG:H    | 1.82        | 0.43     |
| 1:CA:140:LEU:CD1  | 1:CA:180:MET:SD   | 3.05        | 0.43     |
| 3:AC:316:LEU:HD12 | 3:AC:317:GLN:N    | 2.34        | 0.43     |
| 2:AI:253:VAL:HG12 | 2:AI:254:GLN:N    | 2.34        | 0.43     |
| 2:BI:207:LEU:HD12 | 2:BI:236:MET:CE   | 2.47        | 0.43     |
| 2:BP:223:THR:CG2  | 2:BP:247:LEU:HD23 | 2.48        | 0.43     |
| 4:CK:15:GLY:O     | 4:CK:31:LYS:HD3   | 2.18        | 0.43     |
| 4:AK:84:LYS:HE2   | 4:AK:88:ASN:ND2   | 2.25        | 0.43     |
| 4:AR:42:GLN:OE1   | 7:AU:711:LYS:HE2  | 2.18        | 0.43     |
| 5:DS:653:TYR:CD1  | 8:DY:831:A:H2'    | 2.53        | 0.43     |
| 1:AO:136:LYS:HE2  | 8:AY:801:G:HO2'   | 1.83        | 0.43     |
| 5:DL:653:TYR:CE2  | 8:DX:831:A:H2'    | 2.53        | 0.43     |
| 4:BD:10:LEU:HD21  | 4:BD:35:ALA:HB1   | 2.00        | 0.43     |
| 3:CC:324:PHE:CE1  | 8:CV:828:G:OP2    | 2.71        | 0.43     |
| 3:DQ:356:VAL:HG13 | 3:DQ:365:MET:HE2  | 2.00        | 0.43     |
| 2:DB:247:LEU:O    | 2:DB:248:LYS:C    | 2.56        | 0.43     |
| 1:BH:123:ASP:OD1  | 1:BH:125:ARG:HG3  | 2.18        | 0.43     |
| 1:CO:140:LEU:HD11 | 1:CO:180:MET:HE1  | 1.89        | 0.43     |
| 2:CI:280:LEU:O    | 2:CI:282:ASP:N    | 2.50        | 0.43     |
| 7:BN:719:LEU:CD2  | 7:BN:740:LEU:HD11 | 2.47        | 0.43     |
| 1:CO:122:GLN:HE22 | 8:CY:839:C:H5'    | 1.83        | 0.43     |
| 5:AL:624:TYR:HE2  | 7:AN:761:VAL:CG2  | 1.94        | 0.43     |
| 6:CF:549:GLU:O    | 6:CF:555:LEU:HA   | 2.19        | 0.43     |
| 6:BT:511:LEU:HD11 | 6:BT:540:MET:SD   | 2.59        | 0.43     |
| 3:AC:348:ASN:CA   | 8:AV:840:A:H4'    | 2.45        | 0.43     |
| 3:CC:348:ASN:O    | 3:CC:349:ASN:HB2  | 2.18        | 0.43     |
| 8:CV:838:A:H2'    | 8:CV:839:C:H6     | 1.84        | 0.43     |
| 3:DC:359:PHE:HA   | 3:DC:364:ASN:O    | 2.18        | 0.43     |
| 5:CS:655:ASN:C    | 5:CS:656:LEU:HD12 | 2.39        | 0.43     |
| 3:DC:368:GLU:CG   | 3:DC:398:LYS:HZ3  | 2.29        | 0.43     |
| 2:BI:275:PRO:C    | 2:BI:276:LEU:HD23 | 2.39        | 0.43     |
| 5:BE:653:TYR:CZ   | 8:BV:831:A:N7     | 2.86        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BE:683:ASN:CG   | 6:BF:570:LEU:CD1  | 2.79        | 0.43     |
| 5:BS:667:LYS:O    | 5:BS:668:THR:CB   | 2.66        | 0.43     |
| 1:CA:169:LEU:CD2  | 4:CD:80:ALA:HB1   | 2.47        | 0.43     |
| 7:AU:713:MET:CA   | 7:AU:731:LEU:HD23 | 2.49        | 0.43     |
| 5:CE:634:TRP:CZ2  | 5:CE:642:ARG:HD2  | 2.54        | 0.43     |
| 3:BC:377:VAL:CG2  | 3:BC:388:LYS:HB2  | 2.49        | 0.43     |
| 2:DP:229:ILE:HG22 | 2:DP:230:THR:N    | 2.33        | 0.43     |
| 7:AN:719:LEU:N    | 7:AN:719:LEU:CD1  | 2.81        | 0.43     |
| 2:AI:295:VAL:O    | 2:AI:295:VAL:CG1  | 2.62        | 0.43     |
| 1:BH:116:ARG:HG2  | 1:BH:186:PRO:CB   | 2.48        | 0.43     |
| 3:CJ:340:THR:HG21 | 3:CJ:414:LEU:CD1  | 2.47        | 0.43     |
| 4:DK:64:ARG:HH11  | 7:DN:738:MET:HG3  | 1.84        | 0.43     |
| 1:CA:187:PRO:HA   | 1:CA:190:THR:CG2  | 2.49        | 0.43     |
| 8:BV:865:C:H2'    | 8:BV:866:U:C6     | 2.53        | 0.43     |
| 2:AP:236:MET:HE3  | 2:AP:236:MET:HB3  | 1.81        | 0.43     |
| 1:AA:147:GLU:OE1  | 1:AA:165:ARG:HD2  | 2.17        | 0.43     |
| 1:AA:106:SER:O    | 1:AA:110:LEU:HG   | 2.18        | 0.43     |
| 3:DC:388:LYS:HG3  | 3:DC:389:PRO:CD   | 2.49        | 0.43     |
| 4:BR:27:VAL:O     | 4:BR:48:VAL:HA    | 2.19        | 0.43     |
| 7:AG:763:ARG:HG2  | 7:AG:765:ASN:HB3  | 1.99        | 0.43     |
| 4:BR:40:ASN:OD1   | 4:BR:65:GLY:N     | 2.44        | 0.43     |
| 5:AS:666:SER:C    | 5:AS:668:THR:H    | 2.22        | 0.43     |
| 4:CK:47:THR:OG1   | 4:CK:57:GLN:NE2   | 2.51        | 0.43     |
| 2:AP:286:LYS:CE   | 3:AQ:357:LYS:NZ   | 2.82        | 0.43     |
| 1:CO:179:SER:HA   | 2:CP:259:SER:O    | 2.18        | 0.43     |
| 8:AX:839:C:O2'    | 8:AX:840:A:C4'    | 2.67        | 0.43     |
| 6:DF:539:TYR:CE2  | 8:DV:837:G:C2     | 3.07        | 0.43     |
| 5:CL:651:ASP:HB3  | 6:CM:507:PRO:HD3  | 2.00        | 0.43     |
| 6:CM:537:ASP:OD1  | 6:CM:541:ASN:N    | 2.50        | 0.43     |
| 1:AH:173:ARG:CD   | 4:AK:68:ILE:O     | 2.66        | 0.43     |
| 2:DP:289:SER:HB3  | 3:DQ:357:LYS:HD3  | 2.00        | 0.43     |
| 5:CE:621:ILE:CG2  | 7:CG:741:VAL:CG2  | 2.97        | 0.43     |
| 3:CJ:332:LEU:CD1  | 3:CJ:359:PHE:CD2  | 3.01        | 0.43     |
| 7:DU:735:ASP:HB2  | 7:DU:736:PRO:CD   | 2.48        | 0.43     |
| 5:DL:677:ILE:HG21 | 5:DL:679:LEU:HD21 | 2.01        | 0.43     |
| 3:BQ:408:VAL:CG1  | 6:BT:562:VAL:HG13 | 2.49        | 0.43     |
| 6:AF:571:TYR:HE1  | 6:AF:573:ARG:HG2  | 1.83        | 0.43     |
| 7:BU:713:MET:HE3  | 7:BU:732:ARG:O    | 2.19        | 0.43     |
| 2:CB:203:LEU:O    | 2:CB:203:LEU:HG   | 2.17        | 0.43     |
| 4:CD:51:ARG:NE    | 8:CV:862:A:OP2    | 2.52        | 0.43     |
| 2:AI:276:LEU:HD22 | 2:AI:290:LYS:CA   | 2.44        | 0.43     |
| 2:AI:277:ASP:H    | 2:AI:290:LYS:NZ   | 2.16        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:BD:12:GLU:HG3   | 4:BD:79:ASN:HB3   | 2.01        | 0.43     |
| 4:BD:9:VAL:HG22   | 4:BD:79:ASN:O     | 2.19        | 0.43     |
| 5:DL:621:ILE:HD11 | 7:DN:740:LEU:C    | 2.39        | 0.43     |
| 5:DL:621:ILE:CD1  | 7:DN:741:VAL:CG2  | 2.85        | 0.43     |
| 6:BT:566:CYS:HA   | 6:BT:569:VAL:HG23 | 2.00        | 0.43     |
| 8:BY:837:G:O3'    | 8:BY:838:A:O4'    | 2.37        | 0.43     |
| 3:BJ:331:VAL:HG11 | 6:BM:563:LEU:HD13 | 2.01        | 0.43     |
| 3:BJ:409:VAL:N    | 6:BM:563:LEU:O    | 2.36        | 0.43     |
| 4:BD:36:GLU:OE1   | 7:BG:704:ALA:HB1  | 2.19        | 0.43     |
| 4:AK:41:CYS:O     | 4:AK:62:TYR:HA    | 2.19        | 0.43     |
| 3:AJ:363:CYS:HB2  | 6:AM:565:ARG:HD3  | 2.00        | 0.43     |
| 8:BY:851:G:C4     | 8:BY:853:A:OP1    | 2.72        | 0.43     |
| 2:DB:247:LEU:HD12 | 2:DB:250:ARG:HD2  | 2.00        | 0.43     |
| 7:CU:750:THR:O    | 7:CU:750:THR:HG22 | 2.18        | 0.43     |
| 8:DX:826:U:O5'    | 8:DX:826:U:H6     | 2.01        | 0.43     |
| 3:CJ:391:ASN:OD1  | 3:CJ:391:ASN:N    | 2.51        | 0.43     |
| 7:CN:732:ARG:CG   | 7:CN:743:ASP:HB2  | 2.48        | 0.43     |
| 7:DU:721:LEU:O    | 7:DU:768:ILE:HD11 | 2.19        | 0.43     |
| 3:DJ:413:PRO:O    | 3:DJ:414:LEU:HD23 | 2.19        | 0.43     |
| 2:AB:291:LYS:O    | 2:AB:295:VAL:HG22 | 2.19        | 0.43     |
| 8:BV:806:G:OP2    | 8:BV:807:A:OP1    | 2.37        | 0.43     |
| 5:DE:654:MET:HE1  | 5:DE:684:ILE:CG2  | 2.48        | 0.43     |
| 4:CR:23:ASN:O     | 4:CR:69:ARG:NH2   | 2.52        | 0.43     |
| 3:DJ:409:VAL:N    | 6:DM:563:LEU:O    | 2.50        | 0.43     |
| 1:CO:180:MET:HB2  | 2:CP:259:SER:HB3  | 2.00        | 0.43     |
| 3:CQ:410:LEU:HD23 | 6:CT:562:VAL:HA   | 2.00        | 0.43     |
| 5:AL:621:ILE:HD11 | 7:AN:741:VAL:CG2  | 2.45        | 0.43     |
| 2:DP:206:PHE:CD1  | 2:DP:279:LEU:HB3  | 2.53        | 0.43     |
| 6:CF:520:MET:O    | 6:CF:573:ARG:HG3  | 2.19        | 0.43     |
| 2:BP:264:ASN:CG   | 2:BP:264:ASN:O    | 2.56        | 0.43     |
| 5:CE:621:ILE:O    | 5:CE:622:PHE:C    | 2.57        | 0.43     |
| 3:CJ:332:LEU:HB2  | 3:CJ:359:PHE:CZ   | 2.53        | 0.43     |
| 4:AK:9:VAL:CG2    | 4:AK:10:LEU:N     | 2.82        | 0.43     |
| 3:AC:361:ARG:NE   | 8:AV:830:A:OP2    | 2.52        | 0.43     |
| 2:CP:285:PRO:CG   | 3:CQ:337:LYS:HZ2  | 2.31        | 0.43     |
| 5:CS:655:ASN:HA   | 5:CS:679:LEU:O    | 2.19        | 0.43     |
| 6:BF:558:HIS:HD2  | 3:BQ:413:PRO:HD3  | 1.78        | 0.43     |
| 5:DS:667:LYS:HD2  | 5:DS:667:LYS:O    | 2.18        | 0.43     |
| 3:DQ:327:GLY:N    | 3:DQ:328:PRO:CD   | 2.81        | 0.43     |
| 7:CG:718:SER:O    | 7:CG:719:LEU:HD12 | 2.19        | 0.43     |
| 1:AH:182:VAL:CG2  | 2:AI:257:THR:CG2  | 2.85        | 0.43     |
| 3:AC:316:LEU:HD12 | 3:AC:337:LYS:HZ3  | 1.83        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AI:219:LEU:HD12 | 2:AI:223:THR:CG2  | 2.48        | 0.43     |
| 2:BI:279:LEU:HD12 | 2:BI:279:LEU:C    | 2.39        | 0.43     |
| 5:BL:663:GLU:HB2  | 5:BL:671:ARG:HG3  | 2.01        | 0.43     |
| 8:BX:814:A:HO2'   | 8:BX:815:A:C5'    | 2.30        | 0.43     |
| 8:DX:856:C:C6     | 8:DX:856:C:O5'    | 2.61        | 0.43     |
| 1:BH:152:LYS:N    | 1:BH:153:PRO:HD2  | 2.33        | 0.43     |
| 5:BE:630:ARG:HG3  | 5:BE:630:ARG:O    | 2.19        | 0.43     |
| 1:AO:109:MET:CA   | 1:AO:109:MET:HE2  | 2.49        | 0.43     |
| 5:AE:663:GLU:O    | 5:AE:664:ILE:HD13 | 2.18        | 0.43     |
| 6:DM:576:GLU:OE1  | 6:DM:576:GLU:N    | 2.33        | 0.43     |
| 7:AG:705:HIS:N    | 7:AG:706:PRO:CD   | 2.82        | 0.43     |
| 3:CJ:341:GLN:HE21 | 3:CJ:355:ARG:CZ   | 2.32        | 0.43     |
| 8:BY:851:G:C2     | 8:BY:853:A:OP1    | 2.72        | 0.43     |
| 2:DP:283:VAL:CG2  | 2:DP:284:GLU:N    | 2.82        | 0.43     |
| 1:BH:133:ALA:HB3  | 1:BH:141:ILE:HB   | 2.01        | 0.43     |
| 2:CB:211:SER:O    | 2:CB:212:HIS:CB   | 2.66        | 0.43     |
| 1:DO:123:ASP:N    | 1:DO:123:ASP:OD1  | 2.52        | 0.43     |
| 2:BB:247:LEU:O    | 2:BB:248:LYS:C    | 2.57        | 0.43     |
| 2:CP:225:VAL:HG22 | 2:CP:245:MET:HG3  | 2.00        | 0.43     |
| 7:BU:765:ASN:HB2  | 8:BY:832:U:O2     | 2.17        | 0.43     |
| 2:AP:270:LEU:HB2  | 3:AQ:398:LYS:HB3  | 2.01        | 0.43     |
| 6:DM:524:LYS:HG2  | 8:DX:838:A:C6     | 2.54        | 0.43     |
| 1:CO:120:ILE:O    | 1:CO:177:LEU:HD12 | 2.19        | 0.43     |
| 2:CP:236:MET:HG2  | 3:CQ:402:ARG:NH1  | 2.31        | 0.43     |
| 7:BG:755:ASN:OD1  | 7:BG:756:ASN:N    | 2.52        | 0.43     |
| 7:BN:767:ILE:CG2  | 7:BN:770:LEU:HD11 | 2.49        | 0.43     |
| 3:CQ:347:ARG:NH1  | 8:CY:839:C:HI'    | 2.34        | 0.43     |
| 3:CQ:376:GLU:H    | 3:CQ:390:VAL:HG13 | 1.84        | 0.43     |
| 7:DG:741:VAL:HA   | 7:DG:760:VAL:O    | 2.19        | 0.43     |
| 2:DP:210:LEU:HD23 | 2:DP:274:LEU:HD11 | 2.01        | 0.43     |
| 8:BX:865:C:HO2'   | 8:BX:866:U:C5'    | 2.32        | 0.43     |
| 5:BS:674:LEU:HD13 | 6:BT:573:ARG:CB   | 2.49        | 0.43     |
| 3:AC:363:CYS:O    | 3:AC:365:MET:HG3  | 2.18        | 0.43     |
| 8:AV:866:U:H3'    | 8:AV:867:G:C5'    | 2.47        | 0.43     |
| 3:CC:344:ILE:HG21 | 3:CC:406:VAL:HG22 | 2.00        | 0.43     |
| 1:DA:179:SER:HG   | 2:DB:260:ILE:HG12 | 1.84        | 0.43     |
| 5:CS:651:ASP:O    | 5:CS:654:MET:N    | 2.43        | 0.43     |
| 7:CU:740:LEU:CD1  | 7:CU:770:LEU:HD21 | 2.43        | 0.43     |
| 2:CI:207:LEU:CB   | 2:CI:232:VAL:HG11 | 2.49        | 0.43     |
| 2:AP:204:VAL:HG12 | 2:AP:208:MET:CE   | 2.48        | 0.43     |
| 8:AX:853:A:H2'    | 8:AX:854:A:C8     | 2.53        | 0.43     |
| 5:BL:639:VAL:O    | 5:BL:640:ASN:HB3  | 2.18        | 0.43     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AQ:336:VAL:HG22 | 3:AQ:356:VAL:HB   | 2.01        | 0.43     |
| 4:BD:5:VAL:HG12   | 4:BD:6:PRO:N      | 2.34        | 0.43     |
| 1:BO:182:VAL:HG12 | 1:BO:184:GLY:H    | 1.83        | 0.43     |
| 6:AT:565:ARG:CZ   | 8:AY:837:G:C2     | 3.02        | 0.43     |
| 1:AA:149:ARG:HB3  | 1:AA:164:LYS:CG   | 2.48        | 0.43     |
| 1:BA:194:ARG:O    | 1:BA:195:VAL:C    | 2.57        | 0.43     |
| 8:CX:804:G:H2'    | 8:CX:805:U:H5'    | 2.00        | 0.43     |
| 5:AS:686:LEU:CD2  | 7:AU:762:ILE:HG12 | 2.36        | 0.42     |
| 5:BE:667:LYS:O    | 5:BE:668:THR:HB   | 2.19        | 0.42     |
| 8:CY:837:G:H5''   | 8:CY:838:A:OP1    | 2.19        | 0.42     |
| 6:DF:527:MET:HG2  | 6:DF:551:ILE:HD11 | 2.00        | 0.42     |
| 6:CM:540:MET:O    | 6:CM:542:MET:HG3  | 2.18        | 0.42     |
| 3:CJ:328:PRO:O    | 3:CJ:331:VAL:CG2  | 2.65        | 0.42     |
| 3:CJ:331:VAL:HG23 | 3:CJ:332:LEU:N    | 2.33        | 0.42     |
| 4:DR:64:ARG:HG2   | 4:DR:67:LYS:HG2   | 2.01        | 0.42     |
| 2:CB:220:LYS:HG3  | 2:CB:265:ILE:O    | 2.19        | 0.42     |
| 2:CB:213:GLU:OE2  | 2:CB:274:LEU:CD2  | 2.66        | 0.42     |
| 2:DB:236:MET:HE3  | 3:DC:364:ASN:HD21 | 1.84        | 0.42     |
| 3:CQ:336:VAL:HG12 | 3:CQ:337:LYS:N    | 2.34        | 0.42     |
| 2:CI:212:HIS:CA   | 2:CI:229:ILE:O    | 2.66        | 0.42     |
| 2:DB:276:LEU:HD21 | 3:DC:398:LYS:HZ2  | 1.82        | 0.42     |
| 7:DN:757:ILE:HG22 | 7:DN:758:GLY:N    | 2.34        | 0.42     |
| 5:DS:630:ARG:HG3  | 5:DS:630:ARG:O    | 2.19        | 0.42     |
| 6:BF:539:TYR:CG   | 8:BV:837:G:O6     | 2.72        | 0.42     |
| 5:CS:674:LEU:HD23 | 6:CT:575:VAL:HG21 | 2.00        | 0.42     |
| 4:DK:58:LEU:CD1   | 7:DN:771:GLU:OE2  | 2.67        | 0.42     |
| 4:CD:80:ALA:N     | 4:CD:81:PRO:CD    | 2.82        | 0.42     |
| 3:AC:374:TRP:NE1  | 3:AC:392:LYS:HB2  | 2.33        | 0.42     |
| 5:CE:655:ASN:C    | 5:CE:656:LEU:HD23 | 2.40        | 0.42     |
| 1:DO:140:LEU:O    | 1:DO:141:ILE:HD13 | 2.18        | 0.42     |
| 5:AL:639:VAL:CG2  | 6:AM:524:LYS:HE3  | 2.49        | 0.42     |
| 1:AO:154:LYS:HE3  | 8:AY:848:U:O2'    | 2.19        | 0.42     |
| 8:AY:859:A:C8     | 8:AY:860:G:N7     | 2.86        | 0.42     |
| 1:DA:175:GLU:CD   | 8:DV:834:U:O2'    | 2.57        | 0.42     |
| 1:AO:136:LYS:HD3  | 8:AY:801:G:O2'    | 2.18        | 0.42     |
| 7:CG:709:LEU:HD13 | 7:CG:734:PHE:HB3  | 2.00        | 0.42     |
| 2:BB:269:ILE:O    | 2:BB:269:ILE:HG22 | 2.19        | 0.42     |
| 5:DL:653:TYR:CE2  | 8:DX:831:A:C8     | 3.07        | 0.42     |
| 8:BX:843:C:O2     | 8:BX:864:A:C2     | 2.72        | 0.42     |
| 3:DC:374:TRP:CG   | 3:DC:374:TRP:O    | 2.72        | 0.42     |
| 7:CG:722:ASN:OD1  | 7:CG:723:GLY:N    | 2.52        | 0.42     |
| 4:DR:5:VAL:HG22   | 4:DR:8:LYS:HD2    | 2.01        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:DJ:332:LEU:HB2  | 3:DJ:359:PHE:CD2  | 2.48        | 0.42     |
| 2:CI:282:ASP:C    | 2:CI:283:VAL:HG23 | 2.39        | 0.42     |
| 3:AQ:407:ILE:HG23 | 6:AT:568:ASN:ND2  | 2.34        | 0.42     |
| 3:AQ:408:VAL:HG11 | 3:AQ:410:LEU:HD21 | 1.99        | 0.42     |
| 3:AJ:347:ARG:CD   | 6:AM:525:TRP:HZ2  | 2.31        | 0.42     |
| 4:BK:39:MET:HB2   | 4:BK:65:GLY:HA3   | 2.01        | 0.42     |
| 7:AN:741:VAL:CG1  | 7:AN:760:VAL:O    | 2.63        | 0.42     |
| 3:CJ:410:LEU:HB3  | 6:CM:559:LEU:CD2  | 2.49        | 0.42     |
| 5:CE:684:ILE:HG21 | 5:CE:687:LEU:HD21 | 2.01        | 0.42     |
| 6:BT:524:LYS:CA   | 6:BT:570:LEU:CG   | 2.97        | 0.42     |
| 6:BT:523:LEU:C    | 6:BT:570:LEU:HG   | 2.39        | 0.42     |
| 5:DL:674:LEU:CD1  | 6:DM:573:ARG:HD3  | 2.48        | 0.42     |
| 3:AC:359:PHE:HB3  | 3:AC:365:MET:HG2  | 2.00        | 0.42     |
| 5:CS:685:THR:O    | 5:CS:686:LEU:HD23 | 2.19        | 0.42     |
| 4:CK:62:TYR:HE2   | 7:CN:738:MET:SD   | 2.41        | 0.42     |
| 2:CP:283:VAL:CG2  | 2:CP:283:VAL:O    | 2.67        | 0.42     |
| 1:DO:167:LEU:HD13 | 4:DR:70:PHE:CE1   | 2.54        | 0.42     |
| 2:DB:276:LEU:HD12 | 2:DB:290:LYS:CA   | 2.49        | 0.42     |
| 2:BI:280:LEU:HD22 | 2:BI:286:LYS:CD   | 2.49        | 0.42     |
| 8:BV:839:C:H2'    | 8:BV:840:A:H8     | 1.83        | 0.42     |
| 3:AJ:331:VAL:HG21 | 6:AM:563:LEU:CD1  | 2.48        | 0.42     |
| 2:DB:209:LYS:HB3  | 2:DB:279:LEU:HD22 | 2.01        | 0.42     |
| 2:BI:204:VAL:HG11 | 2:BI:236:MET:H    | 1.84        | 0.42     |
| 2:BP:230:THR:CG2  | 2:BP:241:LYS:HD3  | 2.48        | 0.42     |
| 5:CL:664:ILE:HG22 | 5:CL:665:HIS:N    | 2.34        | 0.42     |
| 7:DU:742:ILE:HG22 | 7:DU:745:CYS:HB3  | 2.00        | 0.42     |
| 1:BA:173:ARG:NH2  | 8:BV:834:U:C2     | 2.87        | 0.42     |
| 3:CC:370:VAL:CG1  | 3:CC:399:MET:CE   | 2.95        | 0.42     |
| 1:BH:173:ARG:CZ   | 8:BX:834:U:O2     | 2.67        | 0.42     |
| 1:AO:167:LEU:HB3  | 1:AO:170:VAL:CG2  | 2.49        | 0.42     |
| 8:AY:862:A:H2'    | 8:AY:863:G:H8     | 1.84        | 0.42     |
| 4:CD:42:GLN:CG    | 4:CD:60:GLN:HE21  | 2.32        | 0.42     |
| 8:BX:863:G:O2'    | 8:BX:864:A:H5'    | 2.19        | 0.42     |
| 1:BA:182:VAL:HG23 | 2:BB:257:THR:CG2  | 2.49        | 0.42     |
| 4:DR:11:HIS:HA    | 4:DR:14:GLU:CD    | 2.40        | 0.42     |
| 3:BQ:341:GLN:HB3  | 3:BQ:355:ARG:HD3  | 2.02        | 0.42     |
| 7:BU:737:PHE:HB3  | 8:BY:832:U:O4     | 2.19        | 0.42     |
| 4:BK:16:HIS:O     | 4:BK:31:LYS:HA    | 2.18        | 0.42     |
| 8:BV:801:G:O2'    | 8:BV:802:C:H5'    | 2.19        | 0.42     |
| 3:AC:388:LYS:HB2  | 3:AC:389:PRO:HD2  | 2.00        | 0.42     |
| 2:AP:276:LEU:CD1  | 3:AQ:357:LYS:CE   | 2.86        | 0.42     |
| 3:AQ:409:VAL:C    | 3:AQ:410:LEU:HD23 | 2.38        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:AM:567:ASN:OD1  | 6:AM:568:ASN:N    | 2.53        | 0.42     |
| 6:BM:522:LYS:C    | 6:BM:523:LEU:HD12 | 2.38        | 0.42     |
| 5:BL:651:ASP:OD2  | 8:BX:831:A:N1     | 2.52        | 0.42     |
| 3:CQ:352:LEU:HD23 | 3:CQ:372:GLU:HB3  | 2.01        | 0.42     |
| 4:AK:70:PHE:O     | 4:AK:71:LEU:HD23  | 2.19        | 0.42     |
| 2:DP:210:LEU:CD2  | 2:DP:274:LEU:HD22 | 2.48        | 0.42     |
| 1:AA:150:LYS:HG2  | 1:AA:151:ILE:O    | 2.19        | 0.42     |
| 3:BQ:336:VAL:CG2  | 3:BQ:356:VAL:CG1  | 2.95        | 0.42     |
| 5:BS:653:TYR:CD1  | 8:BY:831:A:C6     | 3.07        | 0.42     |
| 7:BU:738:MET:O    | 7:BU:740:LEU:CD1  | 2.67        | 0.42     |
| 7:CN:763:ARG:HE   | 7:CN:765:ASN:CB   | 2.32        | 0.42     |
| 3:DC:397:SER:OG   | 3:DC:398:LYS:N    | 2.52        | 0.42     |
| 2:BI:270:LEU:HB3  | 2:BI:274:LEU:HD11 | 1.94        | 0.42     |
| 6:BF:525:TRP:HE3  | 6:BF:527:MET:SD   | 2.42        | 0.42     |
| 5:BS:665:HIS:ND1  | 5:BS:667:LYS:CB   | 2.82        | 0.42     |
| 1:DO:116:ARG:HG2  | 1:DO:186:PRO:CG   | 2.48        | 0.42     |
| 4:CD:38:ASN:O     | 4:CD:39:MET:HB2   | 2.19        | 0.42     |
| 8:BY:861:G:C6     | 8:BY:862:A:N7     | 2.87        | 0.42     |
| 7:CU:745:CYS:SG   | 7:CU:760:VAL:CG1  | 3.07        | 0.42     |
| 8:AX:813:G:N7     | 8:AX:817:A:N6     | 2.67        | 0.42     |
| 3:AJ:327:GLY:C    | 3:AJ:330:SER:H    | 2.18        | 0.42     |
| 7:DN:750:THR:O    | 7:DN:751:SER:HB3  | 2.19        | 0.42     |
| 4:AR:28:TYR:CE2   | 4:AR:63:ILE:HD11  | 2.54        | 0.42     |
| 7:DU:746:VAL:O    | 7:DU:746:VAL:HG13 | 2.20        | 0.42     |
| 4:DR:62:TYR:O     | 7:DU:769:MET:HA   | 2.19        | 0.42     |
| 4:DR:63:ILE:CD1   | 7:DU:769:MET:HE1  | 2.48        | 0.42     |
| 4:CK:74:PRO:HG2   | 4:CK:77:LEU:HD21  | 2.00        | 0.42     |
| 4:DK:64:ARG:HB3   | 4:DK:67:LYS:HG2   | 2.01        | 0.42     |
| 5:AL:678:MET:HB3  | 6:AM:572:ILE:HG22 | 2.01        | 0.42     |
| 6:AM:521:VAL:HG13 | 6:AM:571:TYR:O    | 2.18        | 0.42     |
| 1:AO:158:GLN:HG2  | 1:AO:159:ALA:N    | 2.35        | 0.42     |
| 6:CT:530:LYS:HE3  | 6:CT:550:TYR:HE1  | 1.84        | 0.42     |
| 8:BX:863:G:H2'    | 8:BX:864:A:C8     | 2.55        | 0.42     |
| 4:CD:46:ILE:O     | 4:CD:46:ILE:HD12  | 2.20        | 0.42     |
| 7:DG:732:ARG:HG3  | 7:DG:743:ASP:HB2  | 2.01        | 0.42     |
| 2:DB:247:LEU:HB2  | 2:DB:250:ARG:HB2  | 2.01        | 0.42     |
| 2:BB:227:GLY:HA2  | 2:BB:242:ALA:O    | 2.19        | 0.42     |
| 1:BO:107:SER:O    | 1:BO:111:GLN:HG3  | 2.19        | 0.42     |
| 8:CY:830:A:N6     | 8:CY:836:U:C5'    | 2.81        | 0.42     |
| 6:CT:565:ARG:HB3  | 8:CY:837:G:H21    | 1.84        | 0.42     |
| 5:CL:650:PHE:O    | 6:CM:506:ASN:HB3  | 2.18        | 0.42     |
| 1:DH:137:HIS:O    | 1:DH:138:MET:HB2  | 2.20        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:CH:132:LYS:CE   | 4:CK:84:LYS:HG3   | 2.49        | 0.42     |
| 6:BM:539:TYR:CZ   | 8:BX:837:G:N1     | 2.88        | 0.42     |
| 2:BP:232:VAL:HG22 | 2:BP:238:THR:HG23 | 2.01        | 0.42     |
| 7:BU:705:HIS:HB3  | 7:BU:734:PHE:CE2  | 2.55        | 0.42     |
| 2:CB:210:LEU:CB   | 2:CB:229:ILE:HD12 | 2.50        | 0.42     |
| 2:CB:210:LEU:O    | 2:CB:213:GLU:HB2  | 2.20        | 0.42     |
| 2:DB:204:VAL:HG13 | 2:DB:205:ARG:N    | 2.34        | 0.42     |
| 6:CT:535:SER:O    | 6:CT:536:VAL:CG2  | 2.67        | 0.42     |
| 6:CT:575:VAL:HG13 | 6:CT:575:VAL:O    | 2.19        | 0.42     |
| 4:DK:58:LEU:HD13  | 7:DN:771:GLU:HG2  | 2.01        | 0.42     |
| 3:DQ:328:PRO:HB3  | 6:DT:563:LEU:CD1  | 2.46        | 0.42     |
| 2:BB:212:HIS:O    | 2:BB:212:HIS:CD2  | 2.72        | 0.42     |
| 8:BY:862:A:C2     | 8:BY:863:G:C8     | 3.07        | 0.42     |
| 2:AI:257:THR:HG23 | 2:AI:257:THR:O    | 2.19        | 0.42     |
| 2:DI:247:LEU:CD2  | 2:DI:250:ARG:HH11 | 2.30        | 0.42     |
| 1:AO:178:VAL:O    | 2:AP:260:ILE:HA   | 2.20        | 0.42     |
| 3:AQ:336:VAL:HG13 | 3:AQ:356:VAL:HB   | 2.00        | 0.42     |
| 8:BY:838:A:C4'    | 8:BY:838:A:C8     | 3.02        | 0.42     |
| 8:CY:862:A:C4     | 8:CY:863:G:C8     | 3.08        | 0.42     |
| 8:CV:825:U:H2'    | 8:CV:826:U:C6     | 2.55        | 0.42     |
| 5:DS:690:VAL:CG1  | 5:DS:690:VAL:O    | 2.58        | 0.42     |
| 2:DB:261:ARG:HH12 | 2:DB:263:ASN:HB3  | 1.82        | 0.42     |
| 1:BH:116:ARG:HG2  | 1:BH:186:PRO:HB3  | 2.02        | 0.42     |
| 8:AY:866:U:H2'    | 8:AY:867:G:C5'    | 2.47        | 0.42     |
| 4:BD:19:THR:HG21  | 4:BD:72:ILE:HD12  | 2.00        | 0.42     |
| 1:BH:173:ARG:NH2  | 8:BX:834:U:O2     | 2.52        | 0.42     |
| 8:CX:858:A:H4'    | 8:CX:859:A:OP2    | 2.20        | 0.42     |
| 7:AG:732:ARG:HG3  | 7:AG:743:ASP:HB2  | 2.00        | 0.42     |
| 5:BS:631:ILE:HG22 | 5:BS:632:GLN:N    | 2.35        | 0.42     |
| 3:BQ:393:ASP:OD1  | 3:BQ:393:ASP:O    | 2.38        | 0.42     |
| 8:DY:859:A:N6     | 8:DY:860:G:C2     | 2.88        | 0.42     |
| 8:BY:818:G:C2     | 8:BY:819:U:C2     | 3.07        | 0.42     |
| 6:DF:506:ASN:HB2  | 6:DF:507:PRO:CD   | 2.50        | 0.42     |
| 1:AH:147:GLU:HB3  | 1:AH:165:ARG:O    | 2.20        | 0.42     |
| 3:CC:342:VAL:HG21 | 3:CC:356:VAL:HG23 | 2.02        | 0.42     |
| 3:AQ:360:ASP:OD1  | 3:AQ:364:ASN:HB2  | 2.19        | 0.42     |
| 2:CI:276:LEU:CD1  | 2:CI:290:LYS:HB2  | 2.45        | 0.42     |
| 5:AS:674:LEU:HD12 | 5:AS:677:ILE:HD11 | 2.01        | 0.42     |
| 3:AC:342:VAL:HG22 | 3:AC:343:LEU:N    | 2.33        | 0.42     |
| 1:CO:195:VAL:HA   | 4:CR:92:GLY:N     | 2.34        | 0.42     |
| 2:BP:204:VAL:C    | 2:BP:208:MET:HE3  | 2.38        | 0.42     |
| 2:AI:206:PHE:CE1  | 2:AI:210:LEU:CD2  | 3.00        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:DO:195:VAL:HG23 | 4:DR:91:GLN:CB    | 2.48        | 0.42     |
| 8:CX:833:U:O2'    | 8:CX:834:U:O4'    | 2.37        | 0.42     |
| 8:BV:839:C:H2'    | 8:BV:840:A:C8     | 2.54        | 0.42     |
| 2:AB:207:LEU:HB3  | 2:AB:232:VAL:HG11 | 2.02        | 0.42     |
| 1:BA:171:LEU:HD23 | 1:BA:172:LEU:N    | 2.35        | 0.42     |
| 2:BB:276:LEU:HG   | 2:BB:278:THR:H    | 1.85        | 0.42     |
| 3:DJ:374:TRP:HZ3  | 3:DJ:394:ARG:HB3  | 1.85        | 0.42     |
| 5:CL:643:ILE:HG12 | 5:CL:663:GLU:HG2  | 2.00        | 0.42     |
| 4:DK:90:ASN:O     | 4:DK:91:GLN:C     | 2.57        | 0.42     |
| 2:AI:260:ILE:HG22 | 2:AI:261:ARG:N    | 2.34        | 0.42     |
| 8:CV:814:A:H8     | 8:CV:814:A:P      | 2.43        | 0.42     |
| 8:AY:808:C:H2'    | 8:AY:809:G:H8     | 1.84        | 0.42     |
| 2:BP:226:HIS:O    | 2:BP:243:VAL:HA   | 2.19        | 0.42     |
| 4:CR:9:VAL:N      | 4:CR:79:ASN:HD21  | 2.17        | 0.42     |
| 1:AH:132:LYS:HE3  | 4:AK:84:LYS:CB    | 2.50        | 0.42     |
| 8:DX:866:U:H2'    | 8:DX:867:G:H5''   | 1.97        | 0.42     |
| 3:CJ:327:GLY:O    | 3:CJ:330:SER:HB2  | 2.19        | 0.42     |
| 8:BX:853:A:C6     | 8:BX:854:A:C6     | 3.06        | 0.42     |
| 1:BO:140:LEU:O    | 1:BO:141:ILE:HD13 | 2.19        | 0.42     |
| 1:DO:188:LYS:C    | 1:DO:192:ILE:HG13 | 2.38        | 0.42     |
| 8:BV:852:U:C4     | 8:BV:853:A:N6     | 2.88        | 0.42     |
| 3:CQ:345:ASN:OD1  | 3:CQ:351:LYS:HG2  | 2.20        | 0.42     |
| 5:AL:628:ARG:HD3  | 5:AL:631:ILE:HB   | 2.01        | 0.42     |
| 1:CA:113:ILE:O    | 1:CA:114:ASP:HB2  | 2.20        | 0.42     |
| 5:BE:630:ARG:HH21 | 7:CG:744:GLU:CG   | 2.31        | 0.42     |
| 8:AY:863:G:C4     | 8:AY:864:A:C8     | 3.08        | 0.42     |
| 7:DN:773:LEU:O    | 7:DN:773:LEU:CG   | 2.67        | 0.42     |
| 6:AM:511:LEU:HD13 | 6:AM:536:VAL:HB   | 2.00        | 0.42     |
| 8:BV:824:A:H2'    | 8:BV:825:U:C6     | 2.54        | 0.42     |
| 7:DG:705:HIS:C    | 7:DG:707:PRO:HD2  | 2.40        | 0.42     |
| 5:BS:626:GLN:HA   | 5:BS:650:PHE:CE1  | 2.54        | 0.42     |
| 7:BU:721:LEU:CD1  | 7:BU:721:LEU:N    | 2.82        | 0.42     |
| 3:AC:326:THR:HG22 | 3:AC:326:THR:O    | 2.20        | 0.42     |
| 4:DK:24:THR:O     | 4:DK:24:THR:HG22  | 2.20        | 0.42     |
| 4:DK:34:GLU:OE1   | 4:DK:34:GLU:HA    | 2.19        | 0.42     |
| 4:AK:90:ASN:O     | 4:AK:91:GLN:HB2   | 2.19        | 0.42     |
| 5:CS:691:SER:O    | 5:CS:692:ASN:HB2  | 2.19        | 0.42     |
| 5:AL:653:TYR:HE2  | 8:AX:832:U:OP1    | 2.03        | 0.42     |
| 3:DC:316:LEU:O    | 3:DC:319:ARG:N    | 2.53        | 0.42     |
| 2:AI:227:GLY:HA2  | 2:AI:242:ALA:O    | 2.20        | 0.42     |
| 5:BE:628:ARG:O    | 5:BE:631:ILE:HB   | 2.19        | 0.42     |
| 1:CO:106:SER:HB3  | 1:CO:109:MET:HB2  | 2.01        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:AS:663:GLU:CG   | 6:AT:573:ARG:HH22 | 2.31        | 0.42     |
| 3:CQ:352:LEU:HD22 | 3:CQ:399:MET:SD   | 2.59        | 0.42     |
| 1:DH:178:VAL:HG23 | 1:DH:179:SER:N    | 2.35        | 0.42     |
| 4:AK:64:ARG:O     | 4:AK:68:ILE:HG13  | 2.20        | 0.42     |
| 2:DP:205:ARG:O    | 2:DP:208:MET:N    | 2.50        | 0.42     |
| 2:DP:286:LYS:CD   | 3:DQ:357:LYS:HE3  | 2.49        | 0.42     |
| 1:AA:156:SER:O    | 1:AA:160:GLU:HB2  | 2.20        | 0.42     |
| 5:BL:680:LYS:CB   | 6:BM:570:LEU:O    | 2.68        | 0.42     |
| 3:BJ:347:ARG:CG   | 8:BX:839:C:O2'    | 2.68        | 0.42     |
| 6:BT:562:VAL:HG12 | 6:BT:563:LEU:N    | 2.34        | 0.42     |
| 3:BQ:362:HIS:CD2  | 8:BY:836:U:H2'    | 2.54        | 0.42     |
| 3:CC:348:ASN:HA   | 8:CV:840:A:H4'    | 2.01        | 0.42     |
| 2:BI:219:LEU:CG   | 2:BI:223:THR:HG23 | 2.50        | 0.42     |
| 2:BI:219:LEU:HG   | 2:BI:223:THR:HG23 | 2.02        | 0.42     |
| 1:CH:121:LEU:HD21 | 1:CH:172:LEU:HD21 | 2.02        | 0.42     |
| 2:AB:234:VAL:O    | 2:AB:236:MET:HE3  | 2.20        | 0.42     |
| 3:DJ:376:GLU:HG3  | 3:DJ:392:LYS:CB   | 2.46        | 0.42     |
| 8:AY:839:C:C5'    | 8:AY:839:C:C6     | 2.86        | 0.42     |
| 7:CG:719:LEU:HD21 | 7:CG:740:LEU:HD22 | 2.00        | 0.42     |
| 2:AB:239:HIS:ND1  | 2:AB:259:SER:HB2  | 2.34        | 0.42     |
| 8:CY:858:A:C5'    | 8:CY:859:A:OP2    | 2.68        | 0.42     |
| 5:DE:661:ALA:CB   | 5:DE:677:ILE:HD12 | 2.47        | 0.42     |
| 2:BI:236:MET:O    | 2:BI:262:GLY:HA2  | 2.18        | 0.42     |
| 2:DP:263:ASN:HA   | 3:DQ:402:ARG:HH21 | 1.84        | 0.42     |
| 7:BN:717:LEU:HD22 | 7:BN:771:GLU:O    | 2.18        | 0.42     |
| 4:DR:28:TYR:CZ    | 7:DU:769:MET:HE1  | 2.55        | 0.42     |
| 6:CF:506:ASN:O    | 6:CF:510:PHE:CB   | 2.68        | 0.42     |
| 1:DO:131:PHE:HA   | 1:DO:142:LEU:HD23 | 2.01        | 0.42     |
| 2:CB:279:LEU:C    | 2:CB:279:LEU:CD2  | 2.87        | 0.42     |
| 8:BY:813:G:O2'    | 8:BY:815:A:N7     | 2.43        | 0.42     |
| 6:AF:508:LYS:CB   | 6:AF:509:PRO:HD3  | 2.48        | 0.42     |
| 6:DT:530:LYS:HE2  | 6:DT:576:GLU:HG3  | 2.02        | 0.42     |
| 1:DA:128:ILE:O    | 1:DA:145:CYS:HA   | 2.19        | 0.42     |
| 5:DL:653:TYR:CZ   | 8:DX:831:A:C8     | 3.08        | 0.42     |
| 8:BY:825:U:O5'    | 8:BY:825:U:H6     | 2.02        | 0.42     |
| 5:DE:653:TYR:O    | 5:DE:654:MET:HB2  | 2.19        | 0.42     |
| 6:DT:546:ASN:OD1  | 6:DT:546:ASN:O    | 2.38        | 0.42     |
| 5:AE:633:VAL:HG21 | 5:AE:647:ILE:HG22 | 2.01        | 0.42     |
| 6:DM:510:PHE:HE1  | 6:DM:514:LEU:HD22 | 1.85        | 0.42     |
| 2:DI:280:LEU:HD23 | 2:DI:286:LYS:HE2  | 1.92        | 0.42     |
| 6:AT:567:ASN:OD1  | 6:AT:568:ASN:N    | 2.53        | 0.42     |
| 7:BN:738:MET:HE1  | 7:BN:767:ILE:HG21 | 2.01        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CM:524:LYS:HD3  | 6:CM:570:LEU:HD21 | 2.01        | 0.42     |
| 2:DP:207:LEU:HD11 | 3:DQ:400:PHE:CZ   | 2.55        | 0.42     |
| 1:AA:155:ASN:ND2  | 8:CX:813:G:H5'    | 2.34        | 0.42     |
| 2:BP:293:GLU:HG2  | 3:BQ:368:GLU:CD   | 2.40        | 0.42     |
| 2:BI:261:ARG:HH12 | 2:BI:263:ASN:HD22 | 1.67        | 0.42     |
| 2:BP:204:VAL:HG23 | 2:BP:205:ARG:N    | 2.35        | 0.42     |
| 5:BS:625:LEU:HD13 | 5:BS:656:LEU:HD21 | 2.02        | 0.42     |
| 3:AC:363:CYS:SG   | 3:AC:406:VAL:HG21 | 2.59        | 0.42     |
| 6:CT:506:ASN:H    | 6:CT:507:PRO:HD3  | 1.84        | 0.42     |
| 5:DS:658:LEU:HD11 | 5:DS:679:LEU:CD1  | 2.50        | 0.42     |
| 1:BO:118:ARG:HE   | 1:BO:128:ILE:HD11 | 1.85        | 0.42     |
| 4:BR:80:ALA:CB    | 4:BR:81:PRO:CD    | 2.95        | 0.42     |
| 8:DX:853:A:C5     | 8:DX:854:A:C6     | 3.08        | 0.42     |
| 3:DC:368:GLU:HA   | 3:DC:397:SER:O    | 2.20        | 0.42     |
| 6:BF:539:TYR:CG   | 6:BF:539:TYR:O    | 2.73        | 0.42     |
| 1:BA:135:ASP:OD1  | 1:BA:139:ASN:N    | 2.51        | 0.42     |
| 3:BC:358:ALA:HB3  | 3:BC:366:VAL:CB   | 2.49        | 0.42     |
| 3:AJ:334:GLN:HB2  | 3:AJ:418:LYS:HD3  | 2.01        | 0.42     |
| 3:AQ:346:CYS:SG   | 3:AQ:350:LYS:HG3  | 2.60        | 0.42     |
| 5:DE:631:ILE:O    | 5:DE:633:VAL:HG23 | 2.19        | 0.42     |
| 2:AB:212:HIS:C    | 2:AB:228:THR:CG2  | 2.88        | 0.42     |
| 2:BB:210:LEU:HB3  | 2:BB:229:ILE:CD1  | 2.47        | 0.42     |
| 1:CO:152:LYS:HB2  | 8:CY:859:A:C2     | 2.54        | 0.42     |
| 7:BU:742:ILE:HG22 | 7:BU:745:CYS:HB3  | 1.94        | 0.42     |
| 3:BJ:329:LEU:HD22 | 3:BJ:359:PHE:CE1  | 2.55        | 0.42     |
| 1:AO:118:ARG:HG3  | 1:AO:128:ILE:HD11 | 2.00        | 0.42     |
| 7:CN:745:CYS:SG   | 7:CN:760:VAL:HG11 | 2.60        | 0.42     |
| 8:CY:814:A:C6     | 8:CY:815:A:N6     | 2.87        | 0.42     |
| 6:CF:505:LEU:CA   | 6:CF:507:PRO:HD2  | 2.50        | 0.42     |
| 1:DH:107:SER:O    | 1:DH:110:LEU:N    | 2.53        | 0.42     |
| 1:CH:109:MET:CB   | 1:CH:134:PHE:CZ   | 3.03        | 0.42     |
| 6:BF:577:GLU:O    | 6:BF:580:GLU:HG2  | 2.20        | 0.42     |
| 6:AF:508:LYS:CB   | 6:AF:509:PRO:CD   | 2.98        | 0.42     |
| 1:AH:119:CYS:SG   | 1:AH:142:LEU:HD11 | 2.60        | 0.42     |
| 8:BX:862:A:O2'    | 8:BX:863:G:H5'    | 2.20        | 0.42     |
| 8:AV:806:G:H5'    | 8:AV:807:A:OP1    | 2.19        | 0.42     |
| 4:BK:78:LYS:HG2   | 4:BK:85:SER:HB2   | 2.02        | 0.42     |
| 5:CL:623:ARG:O    | 5:CL:626:GLN:N    | 2.53        | 0.42     |
| 3:DJ:410:LEU:HB3  | 6:DM:559:LEU:CD2  | 2.50        | 0.42     |
| 8:DX:838:A:C2'    | 8:DX:839:C:O5'    | 2.68        | 0.42     |
| 5:AS:663:GLU:O    | 5:AS:671:ARG:N    | 2.52        | 0.42     |
| 5:DE:642:ARG:HH21 | 5:DE:664:ILE:HG22 | 1.85        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:CJ:329:LEU:HA   | 3:CJ:359:PHE:CE2  | 2.51        | 0.42     |
| 1:AA:151:ILE:CG2  | 1:AA:152:LYS:H    | 2.14        | 0.42     |
| 8:AV:840:A:C2     | 8:AV:841:G:H1'    | 2.55        | 0.42     |
| 2:CB:220:LYS:HZ3  | 3:CC:404:ASP:HB3  | 1.85        | 0.42     |
| 8:CV:861:G:N1     | 8:CV:862:A:C5     | 2.88        | 0.42     |
| 5:CS:651:ASP:OD1  | 5:CS:651:ASP:C    | 2.58        | 0.42     |
| 4:BR:84:LYS:O     | 4:BR:88:ASN:CB    | 2.68        | 0.42     |
| 2:BB:204:VAL:HG22 | 2:BB:236:MET:HE2  | 2.00        | 0.42     |
| 2:BB:232:VAL:HA   | 2:BB:237:ASN:O    | 2.20        | 0.42     |
| 6:DT:539:TYR:CD2  | 6:DT:539:TYR:O    | 2.73        | 0.42     |
| 1:DH:119:CYS:HB3  | 1:DH:177:LEU:HD11 | 2.01        | 0.42     |
| 1:DO:118:ARG:NH2  | 1:DO:183:GLU:OE1  | 2.53        | 0.42     |
| 8:AV:810:A:C2     | 8:AV:811:C:C2     | 3.06        | 0.42     |
| 3:AJ:312:THR:N    | 3:AJ:313:PRO:HD2  | 2.34        | 0.42     |
| 7:BN:712:PHE:CB   | 7:BN:717:LEU:HD21 | 2.43        | 0.42     |
| 1:BA:108:LYS:HA   | 1:BA:111:GLN:HG2  | 2.02        | 0.42     |
| 2:CI:214:THR:HG22 | 2:CI:226:HIS:CE1  | 2.54        | 0.42     |
| 8:BX:812:U:C2'    | 8:BX:813:G:H5'    | 2.49        | 0.42     |
| 8:CX:827:G:H8     | 8:CX:827:G:OP1    | 2.02        | 0.42     |
| 5:AL:643:ILE:HA   | 5:AL:662:GLU:O    | 2.19        | 0.42     |
| 5:CS:667:LYS:O    | 5:CS:668:THR:HB   | 2.20        | 0.42     |
| 4:CR:74:PRO:HG2   | 4:CR:77:LEU:HD12  | 2.02        | 0.42     |
| 6:DF:547:THR:OG1  | 6:DF:562:VAL:HG21 | 2.20        | 0.42     |
| 6:DM:530:LYS:O    | 6:DM:548:GLU:N    | 2.52        | 0.42     |
| 2:CP:266:ARG:O    | 3:CQ:402:ARG:HB2  | 2.20        | 0.42     |
| 2:DI:210:LEU:CD2  | 2:DI:279:LEU:HD13 | 2.49        | 0.42     |
| 6:CT:539:TYR:CE2  | 8:CY:837:G:C2     | 3.08        | 0.42     |
| 6:DF:567:ASN:O    | 8:DV:838:A:N6     | 2.53        | 0.42     |
| 4:AK:64:ARG:CD    | 4:AK:66:SER:OG    | 2.67        | 0.42     |
| 2:DP:280:LEU:HD23 | 2:DP:282:ASP:HB2  | 2.00        | 0.42     |
| 7:CG:741:VAL:HA   | 7:CG:760:VAL:O    | 2.20        | 0.42     |
| 3:CJ:329:LEU:CG   | 3:CJ:359:PHE:CE2  | 3.03        | 0.42     |
| 6:DM:518:PRO:C    | 6:DM:519:VAL:HG13 | 2.40        | 0.42     |
| 8:BX:840:A:C2     | 8:BX:841:G:N9     | 2.87        | 0.42     |
| 2:DB:201:MET:SD   | 8:DV:830:A:N6     | 2.92        | 0.42     |
| 2:DB:286:LYS:HE2  | 3:DC:336:VAL:HG11 | 2.02        | 0.42     |
| 2:CI:207:LEU:HB3  | 2:CI:232:VAL:HG11 | 2.02        | 0.42     |
| 7:DG:737:PHE:CB   | 7:DG:739:ASN:ND2  | 2.82        | 0.42     |
| 4:DK:13:ALA:O     | 4:DK:32:LEU:HD23  | 2.20        | 0.42     |
| 7:CN:707:PRO:O    | 7:CN:710:LYS:HB2  | 2.20        | 0.42     |
| 3:DQ:332:LEU:O    | 3:DQ:335:SER:OG   | 2.29        | 0.42     |
| 8:BY:862:A:N3     | 8:BY:863:G:C8     | 2.88        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AJ:362:HIS:CD2  | 8:AX:836:U:C4     | 3.08        | 0.42     |
| 1:CH:152:LYS:HE2  | 1:CH:156:SER:HB2  | 2.02        | 0.42     |
| 5:DS:691:SER:CB   | 7:DU:757:ILE:HD12 | 2.50        | 0.42     |
| 8:DX:856:C:C2'    | 8:DX:857:U:H5'    | 2.49        | 0.42     |
| 6:DT:524:LYS:HA   | 6:DT:570:LEU:HD13 | 2.02        | 0.42     |
| 8:AV:864:A:H2'    | 8:AV:865:C:O4'    | 2.20        | 0.42     |
| 1:AA:109:MET:HB3  | 1:AA:134:PHE:CZ   | 2.55        | 0.42     |
| 4:BD:10:LEU:HD23  | 4:BD:35:ALA:CB    | 2.50        | 0.42     |
| 4:AR:21:GLU:HB3   | 4:AR:70:PHE:CE2   | 2.54        | 0.42     |
| 7:CG:757:ILE:HG22 | 7:CG:758:GLY:N    | 2.35        | 0.42     |
| 6:DM:521:VAL:HG11 | 6:DM:569:VAL:HG13 | 2.02        | 0.42     |
| 3:DJ:407:ILE:O    | 6:DM:565:ARG:HB2  | 2.20        | 0.42     |
| 8:DX:841:G:N2     | 8:DX:842:U:C2     | 2.88        | 0.42     |
| 1:CO:131:PHE:HA   | 1:CO:142:LEU:HD23 | 2.02        | 0.42     |
| 6:AT:524:LYS:CB   | 6:AT:570:LEU:HD21 | 2.49        | 0.42     |
| 4:CK:9:VAL:HG22   | 4:CK:80:ALA:HB3   | 1.91        | 0.42     |
| 6:CF:521:VAL:CG2  | 6:CF:572:ILE:HD12 | 2.50        | 0.42     |
| 8:BX:838:A:H3'    | 8:BX:838:A:C8     | 2.55        | 0.42     |
| 2:BP:210:LEU:HD11 | 2:BP:270:LEU:HD22 | 2.00        | 0.42     |
| 3:BQ:401:LEU:HD12 | 3:BQ:402:ARG:H    | 1.85        | 0.42     |
| 7:BN:734:PHE:CE1  | 7:BN:735:ASP:O    | 2.73        | 0.42     |
| 2:CB:260:ILE:HG22 | 2:CB:261:ARG:N    | 2.34        | 0.42     |
| 5:CS:680:LYS:HB3  | 6:CT:570:LEU:O    | 2.20        | 0.42     |
| 5:DL:641:MET:C    | 5:DL:642:ARG:CG   | 2.89        | 0.42     |
| 1:BO:137:HIS:NE2  | 8:BY:834:U:N1     | 2.68        | 0.42     |
| 5:BE:656:LEU:HB3  | 5:BE:658:LEU:HD21 | 2.01        | 0.42     |
| 4:AK:46:ILE:C     | 4:AK:46:ILE:HD12  | 2.40        | 0.42     |
| 2:AB:207:LEU:CD1  | 2:AB:236:MET:SD   | 3.02        | 0.42     |
| 2:BB:237:ASN:OD1  | 8:BV:835:U:O2     | 2.38        | 0.42     |
| 5:BE:677:ILE:HG22 | 5:BE:678:MET:N    | 2.35        | 0.42     |
| 8:BX:857:U:H2'    | 8:BX:858:A:H5'    | 2.02        | 0.42     |
| 2:CB:282:ASP:O    | 2:CB:282:ASP:CG   | 2.58        | 0.42     |
| 2:BI:265:ILE:CG2  | 2:BI:266:ARG:N    | 2.83        | 0.42     |
| 6:AM:510:PHE:HE2  | 6:AM:514:LEU:HD12 | 1.83        | 0.42     |
| 2:BP:217:ILE:HD12 | 2:BP:240:LEU:HD11 | 2.02        | 0.42     |
| 1:DO:139:ASN:C    | 1:DO:140:LEU:HD23 | 2.40        | 0.42     |
| 1:DH:157:LYS:HD3  | 8:DX:850:G:H4'    | 2.00        | 0.42     |
| 8:CX:819:U:O2'    | 8:CX:820:C:H5'    | 2.20        | 0.42     |
| 1:CO:121:LEU:C    | 1:CO:178:VAL:HG23 | 2.40        | 0.42     |
| 3:DC:406:VAL:HG12 | 6:DF:565:ARG:HG3  | 2.01        | 0.42     |
| 2:CB:279:LEU:HD22 | 2:CB:283:VAL:HG11 | 2.02        | 0.42     |
| 1:CA:114:ASP:O    | 1:CA:187:PRO:HD3  | 2.20        | 0.42     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 8:BY:816:A:C6     | 8:BY:817:A:C4     | 3.07        | 0.42     |
| 5:BL:689:SER:O    | 5:BL:690:VAL:CG1  | 2.68        | 0.42     |
| 7:DN:773:LEU:HG   | 7:DN:773:LEU:O    | 2.20        | 0.42     |
| 4:DR:83:LEU:CD1   | 4:DR:83:LEU:N     | 2.82        | 0.42     |
| 6:DF:520:MET:CE   | 6:DF:530:LYS:CD   | 2.97        | 0.42     |
| 2:BI:251:GLU:OE2  | 8:DV:812:U:H3'    | 2.19        | 0.42     |
| 6:DF:506:ASN:CB   | 6:DF:507:PRO:CD   | 2.98        | 0.42     |
| 5:AS:639:VAL:O    | 5:AS:640:ASN:OD1  | 2.38        | 0.42     |
| 4:DD:90:ASN:O     | 4:DD:92:GLY:N     | 2.53        | 0.42     |
| 3:CJ:358:ALA:HB3  | 3:CJ:366:VAL:HB   | 2.02        | 0.41     |
| 6:AT:524:LYS:CA   | 6:AT:570:LEU:HD21 | 2.50        | 0.41     |
| 3:DC:347:ARG:HA   | 3:DC:407:ILE:HD12 | 2.02        | 0.41     |
| 2:DP:287:VAL:HA   | 2:DP:290:LYS:CE   | 2.39        | 0.41     |
| 6:BM:539:TYR:O    | 6:BM:539:TYR:CG   | 2.73        | 0.41     |
| 6:BM:530:LYS:O    | 6:BM:547:THR:HA   | 2.20        | 0.41     |
| 5:CL:684:ILE:HD13 | 5:CL:687:LEU:HD11 | 2.02        | 0.41     |
| 3:AC:363:CYS:HB2  | 6:AF:565:ARG:HD3  | 2.02        | 0.41     |
| 6:AF:525:TRP:CD1  | 8:AV:839:C:N3     | 2.87        | 0.41     |
| 2:AI:229:ILE:HG12 | 2:AI:240:LEU:CD2  | 2.50        | 0.41     |
| 2:DB:266:ARG:O    | 3:DC:402:ARG:CB   | 2.68        | 0.41     |
| 2:DB:203:LEU:HD11 | 3:DC:366:VAL:CG2  | 2.50        | 0.41     |
| 6:BF:506:ASN:HB3  | 6:BF:507:PRO:HD3  | 1.98        | 0.41     |
| 3:BC:341:GLN:OE1  | 3:BC:355:ARG:NH1  | 2.47        | 0.41     |
| 5:CS:674:LEU:HD13 | 6:CT:573:ARG:HB2  | 2.00        | 0.41     |
| 4:AK:46:ILE:HG12  | 4:AK:61:VAL:CG1   | 2.49        | 0.41     |
| 6:BF:536:VAL:CG1  | 6:BF:537:ASP:N    | 2.83        | 0.41     |
| 6:BF:555:LEU:HB3  | 3:BQ:373:MET:SD   | 2.60        | 0.41     |
| 7:CN:742:ILE:HB   | 7:CN:760:VAL:HG12 | 2.02        | 0.41     |
| 1:CH:178:VAL:HG23 | 1:CH:179:SER:H    | 1.82        | 0.41     |
| 2:CB:279:LEU:HD22 | 2:CB:283:VAL:HG13 | 2.00        | 0.41     |
| 8:CV:841:G:H2'    | 8:CV:842:U:H6     | 1.83        | 0.41     |
| 4:DK:23:ASN:HA    | 4:DK:69:ARG:NE    | 2.35        | 0.41     |
| 1:AA:109:MET:HB3  | 1:AA:134:PHE:CE1  | 2.55        | 0.41     |
| 6:AF:528:GLU:HB2  | 6:AF:550:TYR:O    | 2.20        | 0.41     |
| 3:CJ:341:GLN:NE2  | 3:CJ:355:ARG:NH2  | 2.68        | 0.41     |
| 7:AN:735:ASP:OD1  | 7:AN:739:ASN:HB2  | 2.20        | 0.41     |
| 3:DQ:412:ASN:HB2  | 3:DQ:413:PRO:HD2  | 2.02        | 0.41     |
| 2:DI:232:VAL:HG23 | 2:DI:238:THR:HG23 | 2.02        | 0.41     |
| 1:DH:154:LYS:HB2  | 1:DH:154:LYS:HZ2  | 1.84        | 0.41     |
| 3:DC:350:LYS:HB3  | 3:DC:374:TRP:HB3  | 2.02        | 0.41     |
| 4:CK:24:THR:HG22  | 4:CK:51:ARG:HD2   | 2.02        | 0.41     |
| 2:BI:249:ASN:OD1  | 2:BI:250:ARG:HG3  | 2.20        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:BK:43:MET:HE2   | 4:BK:43:MET:HB3   | 1.79        | 0.41     |
| 3:BJ:324:PHE:O    | 3:BJ:325:ASN:OD1  | 2.37        | 0.41     |
| 7:BG:748:MET:HA   | 7:BG:752:GLY:O    | 2.20        | 0.41     |
| 3:AQ:357:LYS:HB2  | 3:AQ:368:GLU:OE1  | 2.20        | 0.41     |
| 2:CI:271:PRO:HD2  | 2:CI:274:LEU:CD1  | 2.47        | 0.41     |
| 3:CQ:372:GLU:HG3  | 3:CQ:372:GLU:O    | 2.20        | 0.41     |
| 6:CT:558:HIS:C    | 6:CT:559:LEU:HD12 | 2.40        | 0.41     |
| 3:CJ:348:ASN:OD1  | 8:CX:840:A:H4'    | 2.19        | 0.41     |
| 8:CX:839:C:O2'    | 8:CX:840:A:H5'    | 2.19        | 0.41     |
| 2:DP:277:ASP:N    | 2:DP:290:LYS:HD2  | 2.35        | 0.41     |
| 2:DP:286:LYS:HE3  | 3:DQ:358:ALA:HB2  | 2.02        | 0.41     |
| 7:CG:742:ILE:O    | 7:CG:760:VAL:HG12 | 2.20        | 0.41     |
| 7:DU:709:LEU:CD1  | 7:DU:709:LEU:N    | 2.83        | 0.41     |
| 2:BP:202:LYS:CG   | 2:BP:204:VAL:HG22 | 2.49        | 0.41     |
| 3:AC:361:ARG:C    | 3:AC:363:CYS:N    | 2.72        | 0.41     |
| 2:CB:201:MET:HG2  | 2:CB:201:MET:O    | 2.20        | 0.41     |
| 2:CB:220:LYS:NZ   | 3:CC:404:ASP:CB   | 2.83        | 0.41     |
| 8:CV:836:U:H4'    | 8:CV:837:G:OP2    | 2.19        | 0.41     |
| 7:CU:709:LEU:HD12 | 7:CU:731:LEU:HD21 | 2.01        | 0.41     |
| 2:CI:212:HIS:H    | 2:CI:229:ILE:C    | 2.23        | 0.41     |
| 6:BF:523:LEU:HA   | 6:BF:568:ASN:O    | 2.20        | 0.41     |
| 6:BF:558:HIS:O    | 6:BF:559:LEU:HD12 | 2.20        | 0.41     |
| 2:BB:249:ASN:HD21 | 8:BV:859:A:H5''   | 1.81        | 0.41     |
| 7:AN:769:MET:HB3  | 7:AN:769:MET:HE2  | 1.73        | 0.41     |
| 3:CQ:341:GLN:HB3  | 3:CQ:355:ARG:HD3  | 2.02        | 0.41     |
| 7:DN:719:LEU:HG   | 7:DN:770:LEU:HG   | 2.02        | 0.41     |
| 3:AJ:368:GLU:HA   | 3:AJ:397:SER:O    | 2.20        | 0.41     |
| 2:CB:279:LEU:CD2  | 2:CB:283:VAL:HG13 | 2.49        | 0.41     |
| 2:CP:206:PHE:CZ   | 2:CP:279:LEU:HD13 | 2.54        | 0.41     |
| 1:AO:109:MET:HB3  | 1:AO:134:PHE:CZ   | 2.55        | 0.41     |
| 3:CJ:362:HIS:HB3  | 8:CX:836:U:O2     | 2.19        | 0.41     |
| 1:DH:142:LEU:O    | 1:DH:169:LEU:HD12 | 2.20        | 0.41     |
| 8:AV:826:U:O5'    | 8:AV:826:U:H6     | 2.02        | 0.41     |
| 1:BA:144:ASP:N    | 1:BA:168:GLY:O    | 2.54        | 0.41     |
| 8:CY:803:C:H1'    | 8:CY:827:G:N2     | 2.34        | 0.41     |
| 4:DD:81:PRO:HB2   | 4:DD:84:LYS:HB3   | 2.02        | 0.41     |
| 7:CU:725:ARG:CD   | 7:CU:749:ALA:HB2  | 2.50        | 0.41     |
| 3:DJ:329:LEU:CG   | 3:DJ:359:PHE:CE2  | 3.03        | 0.41     |
| 6:DM:522:LYS:CD   | 6:DM:528:GLU:OE2  | 2.64        | 0.41     |
| 5:AS:661:ALA:HB3  | 5:AS:677:ILE:CD1  | 2.50        | 0.41     |
| 5:BL:653:TYR:CD1  | 8:BX:831:A:C6     | 3.08        | 0.41     |
| 3:CQ:331:VAL:HG21 | 6:CT:563:LEU:CD2  | 2.50        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 6:CT:523:LEU:O    | 6:CT:524:LYS:C    | 2.58        | 0.41     |
| 6:CM:522:LYS:HG2  | 6:CM:570:LEU:HD12 | 2.02        | 0.41     |
| 5:CL:653:TYR:CD2  | 8:CX:831:A:C5     | 3.08        | 0.41     |
| 2:DP:290:LYS:O    | 2:DP:291:LYS:C    | 2.58        | 0.41     |
| 2:AB:261:ARG:HH12 | 2:AB:263:ASN:HD22 | 1.68        | 0.41     |
| 6:AF:539:TYR:CE2  | 8:AV:837:G:N1     | 2.87        | 0.41     |
| 3:CC:347:ARG:O    | 6:CF:525:TRP:HZ2  | 2.03        | 0.41     |
| 4:CK:22:THR:HG23  | 4:CK:28:TYR:CE1   | 2.54        | 0.41     |
| 2:CI:206:PHE:CZ   | 2:CI:210:LEU:HD11 | 2.55        | 0.41     |
| 8:CX:833:U:O3'    | 8:CX:834:U:C4'    | 2.69        | 0.41     |
| 2:DB:290:LYS:CG   | 2:DB:291:LYS:N    | 2.83        | 0.41     |
| 8:BY:834:U:O2'    | 8:BY:835:U:OP2    | 2.35        | 0.41     |
| 4:BD:80:ALA:HB3   | 4:BD:81:PRO:HD2   | 2.01        | 0.41     |
| 6:DT:539:TYR:CE2  | 8:DY:837:G:C2     | 3.08        | 0.41     |
| 2:AI:219:LEU:C    | 2:AI:266:ARG:HG3  | 2.41        | 0.41     |
| 1:AO:116:ARG:CZ   | 1:AO:129:GLY:HA2  | 2.50        | 0.41     |
| 3:AC:396:ILE:HB   | 3:AC:399:MET:HE2  | 2.03        | 0.41     |
| 3:BJ:332:LEU:C    | 3:BJ:359:PHE:CE2  | 2.93        | 0.41     |
| 1:AH:115:TYR:O    | 1:AH:131:PHE:HB3  | 2.19        | 0.41     |
| 8:DX:846:U:H2'    | 8:DX:858:A:H61    | 1.84        | 0.41     |
| 5:CE:620:LEU:HD22 | 7:CG:736:PRO:HD3  | 2.01        | 0.41     |
| 5:CE:613:VAL:HG12 | 5:CE:614:MET:O    | 2.21        | 0.41     |
| 3:AJ:370:VAL:CB   | 3:AJ:399:MET:HE3  | 2.49        | 0.41     |
| 3:BJ:411:ARG:HB2  | 6:BM:561:GLU:HB2  | 2.02        | 0.41     |
| 6:AM:539:TYR:CD2  | 8:AX:831:A:O4'    | 2.73        | 0.41     |
| 2:CP:210:LEU:CD2  | 2:CP:274:LEU:HD21 | 2.49        | 0.41     |
| 5:CE:628:ARG:HD3  | 5:CE:631:ILE:HB   | 2.02        | 0.41     |
| 3:BQ:403:GLY:O    | 3:BQ:406:VAL:N    | 2.53        | 0.41     |
| 3:BC:361:ARG:HG2  | 8:BV:830:A:H5"    | 2.02        | 0.41     |
| 4:BR:44:SER:HA    | 4:BR:59:GLU:O     | 2.20        | 0.41     |
| 1:AO:189:ASP:O    | 1:AO:193:ALA:HB2  | 2.20        | 0.41     |
| 4:CR:67:LYS:HA    | 4:CR:67:LYS:HD3   | 1.91        | 0.41     |
| 4:AD:16:HIS:O     | 4:AD:31:LYS:HA    | 2.20        | 0.41     |
| 6:DM:566:CYS:HA   | 6:DM:569:VAL:HG23 | 2.02        | 0.41     |
| 1:CO:109:MET:HE1  | 2:CP:239:HIS:HE1  | 1.83        | 0.41     |
| 1:CO:142:LEU:O    | 1:CO:169:LEU:HD12 | 2.21        | 0.41     |
| 5:CL:678:MET:CE   | 6:CM:540:MET:HE1  | 2.50        | 0.41     |
| 6:CM:567:ASN:ND2  | 8:CX:837:G:N3     | 2.69        | 0.41     |
| 1:AH:172:LEU:HD12 | 1:AH:173:ARG:H    | 1.85        | 0.41     |
| 2:DP:203:LEU:HD21 | 3:DQ:358:ALA:HB1  | 1.99        | 0.41     |
| 8:BV:813:G:N1     | 8:BV:817:A:N6     | 2.68        | 0.41     |
| 7:AG:742:ILE:HB   | 7:AG:760:VAL:CG1  | 2.50        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BS:657:VAL:O    | 5:BS:658:LEU:HD23 | 2.20        | 0.41     |
| 7:BU:739:ASN:HA   | 7:BU:762:ILE:O    | 2.19        | 0.41     |
| 2:AI:229:ILE:HG23 | 2:AI:238:THR:HG22 | 2.02        | 0.41     |
| 4:BR:80:ALA:HB3   | 4:BR:81:PRO:CD    | 2.29        | 0.41     |
| 1:DO:169:LEU:O    | 4:DR:72:ILE:HA    | 2.21        | 0.41     |
| 8:CY:846:U:C4     | 8:CY:858:A:C5     | 3.09        | 0.41     |
| 3:BC:391:ASN:HB2  | 6:BT:552:ASP:CB   | 2.48        | 0.41     |
| 8:BY:862:A:H2'    | 8:BY:863:G:H8     | 1.84        | 0.41     |
| 5:BL:665:HIS:O    | 5:BL:668:THR:N    | 2.48        | 0.41     |
| 2:BI:206:PHE:O    | 2:BI:209:LYS:HB2  | 2.21        | 0.41     |
| 1:AO:178:VAL:HA   | 2:AP:264:ASN:ND2  | 2.35        | 0.41     |
| 1:CH:178:VAL:CG2  | 1:CH:179:SER:N    | 2.84        | 0.41     |
| 8:AY:858:A:O2'    | 8:AY:859:A:C8     | 2.74        | 0.41     |
| 2:CI:217:ILE:HG12 | 2:CI:268:PHE:HD1  | 1.85        | 0.41     |
| 8:AY:801:G:N3     | 8:AY:801:G:C2'    | 2.84        | 0.41     |
| 4:BD:42:GLN:OE1   | 4:BD:60:GLN:NE2   | 2.52        | 0.41     |
| 8:AY:819:U:O2'    | 8:AY:820:C:H5'    | 2.20        | 0.41     |
| 3:AQ:401:LEU:HG   | 3:AQ:402:ARG:N    | 2.35        | 0.41     |
| 3:DQ:411:ARG:HD2  | 6:DT:561:GLU:OE1  | 2.20        | 0.41     |
| 4:BK:46:ILE:HG12  | 4:BK:61:VAL:HG22  | 2.02        | 0.41     |
| 4:BD:64:ARG:NH1   | 7:BG:738:MET:HG3  | 2.35        | 0.41     |
| 1:DH:154:LYS:CB   | 1:DH:154:LYS:NZ   | 2.83        | 0.41     |
| 3:CQ:360:ASP:OD1  | 3:CQ:360:ASP:C    | 2.59        | 0.41     |
| 4:DR:38:ASN:OD1   | 4:DR:38:ASN:N     | 2.51        | 0.41     |
| 8:AX:810:A:C6     | 8:AX:811:C:N4     | 2.88        | 0.41     |
| 2:AP:286:LYS:HZ3  | 3:AQ:357:LYS:HZ3  | 1.59        | 0.41     |
| 1:CO:109:MET:CA   | 1:CO:109:MET:CE   | 2.97        | 0.41     |
| 5:AS:661:ALA:HB3  | 5:AS:677:ILE:HD12 | 2.01        | 0.41     |
| 3:AQ:347:ARG:HB3  | 3:AQ:405:SER:HA   | 2.02        | 0.41     |
| 5:CL:650:PHE:HB3  | 5:CL:656:LEU:HD22 | 2.01        | 0.41     |
| 3:AC:413:PRO:HG2  | 3:AC:414:LEU:HD22 | 2.02        | 0.41     |
| 8:BX:838:A:C3'    | 8:BX:838:A:C8     | 3.04        | 0.41     |
| 3:BQ:347:ARG:HG2  | 3:BQ:405:SER:HB2  | 2.03        | 0.41     |
| 7:AG:741:VAL:HG12 | 7:AG:759:MET:SD   | 2.60        | 0.41     |
| 6:AF:565:ARG:CZ   | 8:AV:837:G:C2     | 3.03        | 0.41     |
| 8:CV:866:U:H2'    | 8:CV:867:G:H4'    | 2.01        | 0.41     |
| 2:DB:270:LEU:HD11 | 3:DC:366:VAL:HG13 | 2.02        | 0.41     |
| 8:BV:832:U:C2'    | 8:BV:833:U:H5''   | 2.50        | 0.41     |
| 8:BV:837:G:O5'    | 8:BV:837:G:H8     | 2.03        | 0.41     |
| 3:BC:363:CYS:O    | 3:BC:365:MET:HG3  | 2.20        | 0.41     |
| 3:BC:406:VAL:HG11 | 6:BF:565:ARG:HG3  | 2.01        | 0.41     |
| 4:DD:46:ILE:HD12  | 4:DD:48:VAL:HG23  | 2.02        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AJ:334:GLN:HB3  | 3:AJ:418:LYS:CB   | 2.51        | 0.41     |
| 3:DJ:372:GLU:O    | 3:DJ:374:TRP:HE3  | 2.02        | 0.41     |
| 1:CA:118:ARG:O    | 1:CA:180:MET:HA   | 2.21        | 0.41     |
| 1:CA:173:ARG:CZ   | 8:CV:834:U:O2     | 2.68        | 0.41     |
| 1:AA:111:GLN:O    | 1:AA:115:TYR:CE2  | 2.70        | 0.41     |
| 2:BI:202:LYS:CA   | 2:BI:281:VAL:HG21 | 2.50        | 0.41     |
| 3:BQ:353:LEU:HD12 | 3:BQ:354:GLY:N    | 2.35        | 0.41     |
| 4:CK:27:VAL:HG11  | 4:CK:29:ARG:NH1   | 2.36        | 0.41     |
| 3:CJ:370:VAL:HB   | 3:CJ:399:MET:HE3  | 2.03        | 0.41     |
| 1:BH:192:ILE:HA   | 4:BK:91:GLN:CG    | 2.47        | 0.41     |
| 6:BT:504:PRO:HB3  | 6:BT:508:LYS:HE2  | 2.03        | 0.41     |
| 7:DN:713:MET:HG3  | 7:DN:714:ASP:N    | 2.35        | 0.41     |
| 1:DA:171:LEU:CD2  | 1:DA:172:LEU:O    | 2.68        | 0.41     |
| 8:BV:866:U:H2'    | 8:BV:867:G:O4'    | 2.21        | 0.41     |
| 8:CV:841:G:C2     | 8:CV:842:U:C2     | 3.08        | 0.41     |
| 2:DI:212:HIS:HA   | 2:DI:228:THR:HG22 | 2.02        | 0.41     |
| 8:BY:853:A:O2'    | 8:BY:854:A:O5'    | 2.39        | 0.41     |
| 8:BV:811:C:O2'    | 8:BV:812:U:O4'    | 2.37        | 0.41     |
| 6:AM:583:GLU:HA   | 6:AM:583:GLU:OE1  | 2.20        | 0.41     |
| 7:CN:732:ARG:HG3  | 7:CN:743:ASP:HB2  | 2.02        | 0.41     |
| 5:AS:623:ARG:H    | 5:AS:623:ARG:HG3  | 1.68        | 0.41     |
| 5:DE:650:PHE:CB   | 5:DE:656:LEU:CD2  | 2.99        | 0.41     |
| 5:BS:636:TYR:C    | 5:BS:685:THR:HG22 | 2.41        | 0.41     |
| 5:DE:660:ASP:HA   | 5:DE:673:GLN:HE21 | 1.83        | 0.41     |
| 1:CO:128:ILE:O    | 1:CO:145:CYS:HA   | 2.21        | 0.41     |
| 3:DJ:408:VAL:HG22 | 6:DM:564:ILE:CB   | 2.48        | 0.41     |
| 2:CP:243:VAL:HG11 | 2:CP:258:LEU:CD2  | 2.51        | 0.41     |
| 5:BE:642:ARG:NH2  | 5:BE:664:ILE:CG2  | 2.83        | 0.41     |
| 5:BL:653:TYR:CE2  | 8:BX:832:U:OP1    | 2.74        | 0.41     |
| 6:DF:523:LEU:HG   | 6:DF:568:ASN:C    | 2.41        | 0.41     |
| 2:BP:293:GLU:CG   | 3:BQ:368:GLU:HG3  | 2.50        | 0.41     |
| 5:DL:674:LEU:CB   | 5:DL:677:ILE:HD11 | 2.45        | 0.41     |
| 6:BM:529:TYR:CD1  | 6:BM:529:TYR:N    | 2.88        | 0.41     |
| 8:CV:859:A:H2'    | 8:CV:860:G:O4'    | 2.21        | 0.41     |
| 3:AC:348:ASN:HA   | 8:AV:840:A:O2'    | 2.21        | 0.41     |
| 5:CS:651:ASP:O    | 5:CS:652:GLU:C    | 2.58        | 0.41     |
| 2:DB:284:GLU:HB3  | 2:DB:285:PRO:HD3  | 2.01        | 0.41     |
| 2:DB:206:PHE:CD1  | 2:DB:206:PHE:C    | 2.94        | 0.41     |
| 2:BI:274:LEU:HA   | 2:BI:275:PRO:HD3  | 1.81        | 0.41     |
| 3:AC:336:VAL:CG1  | 3:AC:337:LYS:N    | 2.83        | 0.41     |
| 8:AX:854:A:O5'    | 8:AX:854:A:H8     | 2.03        | 0.41     |
| 2:BI:208:MET:HA   | 2:BI:232:VAL:HB   | 2.02        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AJ:414:LEU:HD12 | 3:AJ:415:ILE:O    | 2.20        | 0.41     |
| 1:DO:137:HIS:NE2  | 8:DY:835:U:H5"    | 2.36        | 0.41     |
| 1:DA:156:SER:HG   | 1:DA:159:ALA:HB2  | 1.85        | 0.41     |
| 1:BH:143:CYS:HG   | 4:BK:84:LYS:HG2   | 1.84        | 0.41     |
| 8:DX:855:C:O2'    | 8:DX:856:C:H5'    | 2.21        | 0.41     |
| 2:AP:265:ILE:CG2  | 2:AP:266:ARG:H    | 2.33        | 0.41     |
| 4:CD:42:GLN:OE1   | 4:CD:60:GLN:NE2   | 2.54        | 0.41     |
| 8:BY:824:A:OP2    | 8:BY:824:A:H4'    | 2.21        | 0.41     |
| 3:DC:382:LYS:HG3  | 3:DC:383:GLY:H    | 1.86        | 0.41     |
| 2:AB:293:GLU:HB2  | 3:AC:368:GLU:OE1  | 2.21        | 0.41     |
| 3:AQ:348:ASN:O    | 3:AQ:349:ASN:HB2  | 2.21        | 0.41     |
| 6:DM:522:LYS:HA   | 6:DM:528:GLU:HG3  | 2.03        | 0.41     |
| 2:CP:265:ILE:HG22 | 2:CP:266:ARG:N    | 2.35        | 0.41     |
| 8:CY:830:A:N6     | 8:CY:836:U:O5'    | 2.29        | 0.41     |
| 3:CQ:376:GLU:CA   | 3:CQ:376:GLU:OE1  | 2.69        | 0.41     |
| 5:DL:674:LEU:HB2  | 5:DL:677:ILE:CD1  | 2.44        | 0.41     |
| 3:BJ:347:ARG:NH1  | 8:BX:840:A:P      | 2.94        | 0.41     |
| 7:CU:732:ARG:HG3  | 7:CU:743:ASP:HB2  | 2.02        | 0.41     |
| 2:BI:215:VAL:HG12 | 2:BI:271:PRO:CD   | 2.49        | 0.41     |
| 6:CT:521:VAL:O    | 6:CT:528:GLU:HA   | 2.21        | 0.41     |
| 2:AB:202:LYS:HB3  | 2:AB:204:VAL:HG22 | 2.01        | 0.41     |
| 2:DI:262:GLY:O    | 3:DJ:402:ARG:CZ   | 2.69        | 0.41     |
| 4:CR:48:VAL:CG1   | 4:CR:56:ALA:HB3   | 2.50        | 0.41     |
| 8:BX:858:A:H5"    | 8:DV:815:A:H1'    | 2.01        | 0.41     |
| 3:CJ:395:TYR:CG   | 3:CJ:396:ILE:N    | 2.88        | 0.41     |
| 2:DP:212:HIS:CG   | 2:DP:212:HIS:O    | 2.74        | 0.41     |
| 1:BH:195:VAL:HG22 | 4:BK:91:GLN:HG2   | 2.03        | 0.41     |
| 3:CJ:334:GLN:HA   | 3:CJ:334:GLN:HE21 | 1.85        | 0.41     |
| 5:AL:676:ARG:C    | 5:AL:677:ILE:HG13 | 2.40        | 0.41     |
| 4:BK:68:ILE:HG21  | 4:BK:71:LEU:HD11  | 2.02        | 0.41     |
| 1:DA:121:LEU:HG   | 1:DA:127:PHE:CE1  | 2.56        | 0.41     |
| 2:BB:293:GLU:HA   | 2:BB:293:GLU:OE1  | 2.20        | 0.41     |
| 1:AH:137:HIS:O    | 1:AH:138:MET:HB2  | 2.19        | 0.41     |
| 5:DL:653:TYR:O    | 5:DL:681:GLY:HA3  | 2.21        | 0.41     |
| 3:BC:353:LEU:HD23 | 3:BC:371:LYS:HD2  | 2.02        | 0.41     |
| 1:AA:189:ASP:O    | 1:AA:192:ILE:HB   | 2.21        | 0.41     |
| 3:DC:374:TRP:CZ3  | 3:DC:376:GLU:CB   | 3.03        | 0.41     |
| 6:DM:514:LEU:HD12 | 6:DM:514:LEU:O    | 2.20        | 0.41     |
| 1:CH:195:VAL:HG12 | 1:CH:195:VAL:OXT  | 2.20        | 0.41     |
| 6:AT:508:LYS:N    | 6:AT:509:PRO:CD   | 2.84        | 0.41     |
| 3:DJ:338:ASN:O    | 3:DJ:339:ASN:HB3  | 2.20        | 0.41     |
| 2:AP:286:LYS:HZ2  | 3:AQ:357:LYS:NZ   | 2.06        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:DJ:333:THR:N    | 3:DJ:359:PHE:CZ   | 2.89        | 0.41     |
| 3:DJ:342:VAL:HG11 | 3:DJ:409:VAL:CG1  | 2.51        | 0.41     |
| 1:CO:177:LEU:HD21 | 1:CO:180:MET:SD   | 2.60        | 0.41     |
| 1:CO:181:THR:OG1  | 1:CO:182:VAL:N    | 2.54        | 0.41     |
| 2:CI:280:LEU:CD1  | 2:CI:286:LYS:CG   | 2.86        | 0.41     |
| 3:AQ:407:ILE:HA   | 6:AT:568:ASN:HD21 | 1.86        | 0.41     |
| 3:AQ:327:GLY:C    | 6:AT:543:GLN:OE1  | 2.59        | 0.41     |
| 3:AJ:410:LEU:HD23 | 3:AJ:410:LEU:N    | 2.36        | 0.41     |
| 6:AM:530:LYS:O    | 6:AM:547:THR:HA   | 2.20        | 0.41     |
| 6:AM:546:ASN:O    | 6:AM:547:THR:C    | 2.59        | 0.41     |
| 6:DF:539:TYR:O    | 6:DF:540:MET:CB   | 2.69        | 0.41     |
| 6:CM:540:MET:HE3  | 6:CM:540:MET:HB3  | 1.94        | 0.41     |
| 7:DU:719:LEU:HD21 | 7:DU:740:LEU:HD13 | 2.00        | 0.41     |
| 8:AV:854:A:H2'    | 8:AV:855:C:H5'    | 2.03        | 0.41     |
| 3:DQ:376:GLU:HB2  | 3:DQ:391:ASN:N    | 2.36        | 0.41     |
| 1:BH:118:ARG:O    | 1:BH:180:MET:HA   | 2.20        | 0.41     |
| 1:BH:118:ARG:CZ   | 1:BH:128:ILE:HD11 | 2.42        | 0.41     |
| 3:BJ:347:ARG:CA   | 6:BM:525:TRP:CH2  | 3.01        | 0.41     |
| 6:BM:544:LEU:CB   | 6:BM:547:THR:HB   | 2.50        | 0.41     |
| 2:BP:202:LYS:CE   | 2:BP:204:VAL:HG22 | 2.40        | 0.41     |
| 5:AE:634:TRP:CZ3  | 5:AE:636:TYR:HB2  | 2.56        | 0.41     |
| 6:BT:522:LYS:HD3  | 6:BT:571:TYR:CE1  | 2.56        | 0.41     |
| 3:AC:348:ASN:OD1  | 3:AC:348:ASN:O    | 2.39        | 0.41     |
| 6:CF:524:LYS:CB   | 8:CV:838:A:N6     | 2.84        | 0.41     |
| 5:BE:653:TYR:CD1  | 8:BV:831:A:C6     | 3.09        | 0.41     |
| 3:BC:358:ALA:O    | 3:BC:365:MET:HA   | 2.21        | 0.41     |
| 4:DK:32:LEU:HA    | 4:DK:43:MET:HG2   | 2.03        | 0.41     |
| 5:BS:642:ARG:HH22 | 5:BS:668:THR:HA   | 1.85        | 0.41     |
| 2:BI:229:ILE:HG12 | 2:BI:240:LEU:HD21 | 2.01        | 0.41     |
| 7:AU:734:PHE:HD2  | 7:AU:740:LEU:HD23 | 1.86        | 0.41     |
| 1:DO:116:ARG:O    | 1:DO:184:GLY:O    | 2.38        | 0.41     |
| 8:DY:830:A:N6     | 8:DY:836:U:O5'    | 2.54        | 0.41     |
| 6:BF:517:LYS:HA   | 6:BF:518:PRO:HD3  | 1.87        | 0.41     |
| 1:BH:167:LEU:CD2  | 4:BK:72:ILE:HD11  | 2.47        | 0.41     |
| 8:CY:849:G:C4     | 8:CY:850:G:C8     | 3.09        | 0.41     |
| 6:CF:508:LYS:CB   | 6:CF:509:PRO:HD3  | 2.50        | 0.41     |
| 8:BV:850:G:H2'    | 8:BV:851:G:H5'    | 2.02        | 0.41     |
| 7:DN:709:LEU:C    | 7:DN:709:LEU:HD23 | 2.41        | 0.41     |
| 1:CH:150:LYS:N    | 1:CH:164:LYS:HD3  | 2.36        | 0.41     |
| 5:AE:667:LYS:C    | 5:AE:668:THR:HG23 | 2.41        | 0.41     |
| 1:BO:195:VAL:O    | 1:BO:195:VAL:CG1  | 2.68        | 0.41     |
| 1:DA:169:LEU:HD23 | 4:DD:73:LEU:CB    | 2.48        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:BD:28:TYR:HE2   | 4:BD:61:VAL:HG11  | 1.85        | 0.41     |
| 3:CJ:362:HIS:CG   | 8:CX:836:U:C2     | 3.09        | 0.41     |
| 6:CT:550:TYR:CE1  | 6:CT:555:LEU:HD13 | 2.56        | 0.41     |
| 8:CX:845:C:C2     | 8:CX:862:A:C2     | 3.08        | 0.41     |
| 6:DF:537:ASP:OD1  | 6:DF:537:ASP:C    | 2.58        | 0.41     |
| 5:CL:623:ARG:O    | 5:CL:624:TYR:C    | 2.59        | 0.41     |
| 1:AA:157:LYS:HD3  | 8:CX:818:G:O2'    | 2.20        | 0.41     |
| 4:BK:32:LEU:HD21  | 4:BK:35:ALA:HB2   | 2.01        | 0.41     |
| 4:BK:15:GLY:N     | 4:BK:32:LEU:O     | 2.52        | 0.41     |
| 2:AP:276:LEU:CB   | 3:AQ:357:LYS:HE3  | 2.51        | 0.41     |
| 8:CY:835:U:H4'    | 8:CY:835:U:OP1    | 2.21        | 0.41     |
| 2:CP:208:MET:HG2  | 2:CP:232:VAL:O    | 2.21        | 0.41     |
| 2:CP:232:VAL:HA   | 2:CP:237:ASN:O    | 2.20        | 0.41     |
| 3:AQ:327:GLY:O    | 6:AT:543:GLN:OE1  | 2.39        | 0.41     |
| 5:BE:687:LEU:HB2  | 7:BG:761:VAL:HB   | 2.02        | 0.41     |
| 7:BN:738:MET:HB2  | 7:BN:764:GLY:HA3  | 2.03        | 0.41     |
| 6:CT:540:MET:O    | 6:CT:566:CYS:SG   | 2.79        | 0.41     |
| 6:CT:562:VAL:HG12 | 6:CT:563:LEU:N    | 2.35        | 0.41     |
| 6:CT:524:LYS:N    | 6:CT:568:ASN:O    | 2.50        | 0.41     |
| 6:DF:549:GLU:HG2  | 6:DF:550:TYR:N    | 2.36        | 0.41     |
| 7:AN:741:VAL:HG22 | 7:AN:761:VAL:HG22 | 2.02        | 0.41     |
| 5:CL:653:TYR:O    | 5:CL:654:MET:HB2  | 2.21        | 0.41     |
| 1:DH:140:LEU:CD1  | 1:DH:180:MET:HE3  | 2.47        | 0.41     |
| 4:DK:39:MET:HE3   | 4:DK:68:ILE:HD12  | 2.00        | 0.41     |
| 1:DH:173:ARG:NH2  | 8:DX:834:U:C2     | 2.89        | 0.41     |
| 6:CM:531:GLY:HA3  | 6:CM:547:THR:HA   | 2.03        | 0.41     |
| 3:AC:410:LEU:CD2  | 6:AF:562:VAL:CG2  | 2.88        | 0.41     |
| 3:AC:414:LEU:HD22 | 3:AC:414:LEU:N    | 2.35        | 0.41     |
| 3:BQ:410:LEU:HD22 | 6:BT:562:VAL:CG1  | 2.44        | 0.41     |
| 2:BP:236:MET:HE1  | 3:BQ:402:ARG:NH1  | 2.36        | 0.41     |
| 5:AE:636:TYR:HB3  | 5:AE:686:LEU:O    | 2.21        | 0.41     |
| 5:BS:658:LEU:HD12 | 5:BS:679:LEU:HD11 | 2.03        | 0.41     |
| 5:BS:654:MET:O    | 5:BS:656:LEU:HG   | 2.20        | 0.41     |
| 2:AB:260:ILE:HG22 | 2:AB:261:ARG:N    | 2.36        | 0.41     |
| 8:CV:861:G:C6     | 8:CV:862:A:N7     | 2.89        | 0.41     |
| 2:CB:265:ILE:CG2  | 2:CB:266:ARG:N    | 2.83        | 0.41     |
| 2:DB:219:LEU:CD2  | 2:DB:265:ILE:CG1  | 2.92        | 0.41     |
| 6:DT:507:PRO:O    | 6:DT:511:LEU:HD12 | 2.20        | 0.41     |
| 5:DS:678:MET:C    | 5:DS:679:LEU:HD23 | 2.41        | 0.41     |
| 4:BR:84:LYS:O     | 4:BR:88:ASN:HB2   | 2.21        | 0.41     |
| 2:CI:204:VAL:HG11 | 2:CI:236:MET:N    | 2.36        | 0.41     |
| 8:BV:837:G:O3'    | 8:BV:838:A:C4'    | 2.67        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 5:BE:658:LEU:N    | 5:BE:658:LEU:HD23 | 2.34        | 0.41     |
| 2:BB:202:LYS:NZ   | 2:BB:282:ASP:CG   | 2.74        | 0.41     |
| 4:DK:14:GLU:HG3   | 4:DK:33:ILE:O     | 2.20        | 0.41     |
| 7:DN:733:GLY:H    | 7:DN:741:VAL:HB   | 1.86        | 0.41     |
| 1:CA:130:THR:HB   | 1:CA:143:CYS:HB2  | 2.02        | 0.41     |
| 1:CH:180:MET:O    | 2:CI:258:LEU:HD12 | 2.20        | 0.41     |
| 1:CA:137:HIS:CG   | 8:CV:834:U:C4     | 3.09        | 0.41     |
| 1:AA:112:HIS:CA   | 1:AA:115:TYR:CD2  | 3.03        | 0.41     |
| 5:CS:643:ILE:CG2  | 5:CS:661:ALA:HB1  | 2.50        | 0.41     |
| 8:BY:841:G:C6     | 8:BY:842:U:C4     | 3.09        | 0.41     |
| 3:BJ:360:ASP:OD1  | 3:BJ:364:ASN:N    | 2.53        | 0.41     |
| 8:DX:806:G:H2'    | 8:DX:807:A:N9     | 2.34        | 0.41     |
| 8:CX:847:A:HO2'   | 8:CX:848:U:H5'    | 1.82        | 0.41     |
| 1:DO:180:MET:N    | 2:DP:259:SER:O    | 2.54        | 0.41     |
| 6:BT:539:TYR:HE2  | 6:BT:567:ASN:N    | 2.19        | 0.41     |
| 8:CY:864:A:C2     | 8:CY:865:C:N3     | 2.89        | 0.41     |
| 7:AU:753:GLN:HG3  | 7:AU:753:GLN:O    | 2.21        | 0.41     |
| 7:AU:748:MET:CE   | 7:AU:752:GLY:C    | 2.89        | 0.41     |
| 1:CO:136:LYS:HD2  | 8:CY:801:G:C1'    | 2.50        | 0.41     |
| 1:BA:173:ARG:CZ   | 4:BD:65:GLY:O     | 2.69        | 0.41     |
| 8:CY:849:G:C5     | 8:CY:850:G:N7     | 2.89        | 0.41     |
| 8:CY:850:G:C2     | 8:CY:851:G:C8     | 3.09        | 0.41     |
| 2:DB:263:ASN:HB2  | 8:DV:835:U:O2'    | 2.20        | 0.41     |
| 1:AO:132:LYS:HD2  | 1:AO:143:CYS:SG   | 2.61        | 0.41     |
| 3:DQ:378:PRO:HB3  | 3:DQ:388:LYS:HA   | 2.03        | 0.41     |
| 3:BJ:363:CYS:HB2  | 6:BM:565:ARG:NH1  | 2.36        | 0.41     |
| 1:BH:192:ILE:O    | 1:BH:195:VAL:HG23 | 2.21        | 0.41     |
| 3:CJ:411:ARG:HD2  | 3:CJ:416:ALA:HB3  | 2.02        | 0.41     |
| 2:BI:287:VAL:O    | 2:BI:291:LYS:HD2  | 2.18        | 0.41     |
| 5:AL:641:MET:O    | 5:AL:642:ARG:HG3  | 2.21        | 0.41     |
| 5:DL:620:LEU:HD22 | 7:DN:735:ASP:CB   | 2.51        | 0.41     |
| 1:BH:152:LYS:N    | 1:BH:153:PRO:CD   | 2.84        | 0.41     |
| 6:DT:504:PRO:HB3  | 6:DT:508:LYS:HG2  | 2.03        | 0.41     |
| 6:AM:551:ILE:O    | 6:AM:552:ASP:HB2  | 2.21        | 0.41     |
| 4:DD:17:ILE:HG12  | 4:DD:31:LYS:HG2   | 2.02        | 0.41     |
| 1:BA:170:VAL:HA   | 4:BD:71:LEU:O     | 2.20        | 0.41     |
| 3:AQ:341:GLN:NE2  | 3:AQ:412:ASN:OD1  | 2.43        | 0.41     |
| 4:DD:4:GLY:HA3    | 4:DD:7:ILE:HD13   | 2.02        | 0.41     |
| 6:CF:527:MET:HG2  | 6:CF:551:ILE:HD13 | 2.03        | 0.41     |
| 8:BY:811:C:H2'    | 8:BY:812:U:O4'    | 2.21        | 0.41     |
| 3:DQ:411:ARG:HB2  | 6:DT:561:GLU:HB2  | 2.02        | 0.41     |
| 8:DY:810:A:H2'    | 8:DY:811:C:O4'    | 2.20        | 0.41     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 3:AJ:351:LYS:HB2  | 3:AJ:373:MET:HB2  | 2.02        | 0.41     |
| 7:DN:730:ILE:HG21 | 7:DN:732:ARG:NH2  | 2.36        | 0.41     |
| 6:AM:528:GLU:HB2  | 6:AM:550:TYR:O    | 2.20        | 0.41     |
| 1:CA:123:ASP:OD1  | 1:CA:124:GLY:N    | 2.53        | 0.41     |
| 3:DJ:407:ILE:HG12 | 6:DM:568:ASN:ND2  | 2.29        | 0.41     |
| 2:CP:229:ILE:HG12 | 2:CP:240:LEU:CD2  | 2.51        | 0.41     |
| 3:CQ:344:ILE:HA   | 3:CQ:408:VAL:O    | 2.22        | 0.41     |
| 1:DH:173:ARG:NH2  | 8:DX:834:U:O2     | 2.54        | 0.41     |
| 5:CE:679:LEU:HD23 | 6:CF:571:TYR:CB   | 2.51        | 0.41     |
| 6:CF:521:VAL:CG2  | 6:CF:572:ILE:HG13 | 2.23        | 0.41     |
| 7:DU:712:PHE:HD1  | 7:DU:717:LEU:HD21 | 1.86        | 0.41     |
| 5:AE:679:LEU:HD23 | 6:AF:571:TYR:HB2  | 2.03        | 0.41     |
| 2:DB:265:ILE:HG22 | 2:DB:266:ARG:N    | 2.35        | 0.41     |
| 7:CN:717:LEU:HD12 | 7:CN:731:LEU:HB2  | 2.03        | 0.41     |
| 7:CN:734:PHE:HD1  | 7:CN:740:LEU:HG   | 1.86        | 0.41     |
| 2:CI:205:ARG:O    | 2:CI:208:MET:HB2  | 2.21        | 0.41     |
| 5:DS:634:TRP:CZ3  | 5:DS:644:GLU:HB2  | 2.56        | 0.41     |
| 1:CA:143:CYS:SG   | 1:CA:169:LEU:HD13 | 2.61        | 0.41     |
| 1:CO:144:ASP:OD2  | 1:CO:194:ARG:NH2  | 2.39        | 0.41     |
| 3:DQ:361:ARG:C    | 3:DQ:363:CYS:H    | 2.23        | 0.41     |
| 4:DK:12:GLU:HB3   | 4:DK:79:ASN:ND2   | 2.36        | 0.41     |
| 8:AX:849:G:P      | 8:AX:849:G:H3'    | 2.61        | 0.41     |
| 2:BI:204:VAL:HG11 | 2:BI:236:MET:N    | 2.35        | 0.41     |
| 2:BI:205:ARG:HG2  | 2:BI:208:MET:CE   | 2.51        | 0.41     |
| 6:CM:514:LEU:HA   | 6:CM:517:LYS:HD2  | 2.02        | 0.41     |
| 7:CG:705:HIS:H    | 7:CG:706:PRO:HD2  | 1.85        | 0.41     |
| 4:DR:12:GLU:HG3   | 4:DR:79:ASN:ND2   | 2.36        | 0.41     |
| 1:BH:116:ARG:H    | 1:BH:186:PRO:HD3  | 1.83        | 0.41     |
| 7:DN:734:PHE:HZ   | 7:DN:738:MET:SD   | 2.44        | 0.41     |
| 6:AF:555:LEU:CD2  | 3:AQ:353:LEU:CD2  | 2.99        | 0.41     |
| 1:DA:172:LEU:HD12 | 4:DD:70:PHE:HB3   | 2.03        | 0.41     |
| 6:DT:518:PRO:HG2  | 6:DT:577:GLU:HA   | 2.02        | 0.41     |
| 5:AE:642:ARG:NH2  | 5:AE:664:ILE:HG21 | 2.33        | 0.41     |
| 3:DC:390:VAL:HG13 | 3:DC:391:ASN:N    | 2.36        | 0.41     |
| 7:AG:705:HIS:CG   | 7:AG:706:PRO:HD3  | 2.56        | 0.41     |
| 8:CX:854:A:C5     | 8:CX:855:C:H1'    | 2.56        | 0.41     |
| 1:BO:136:LYS:NZ   | 8:BY:801:G:N3     | 2.69        | 0.41     |
| 4:AR:82:MET:CE    | 4:AR:84:LYS:HD2   | 2.51        | 0.41     |
| 2:DB:245:MET:HE2  | 2:DB:255:LEU:HD11 | 2.02        | 0.41     |
| 5:BS:637:GLU:CA   | 5:BS:685:THR:HG22 | 2.51        | 0.41     |
| 6:AT:514:LEU:HB3  | 6:AT:533:LEU:HD23 | 2.03        | 0.41     |
| 3:CC:342:VAL:CG2  | 3:CC:356:VAL:HG23 | 2.51        | 0.40     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:CP:230:THR:CG2  | 2:CP:241:LYS:HB2  | 2.50        | 0.40     |
| 8:CY:835:U:O2'    | 8:CY:836:U:H4'    | 2.20        | 0.40     |
| 5:BE:624:TYR:CD1  | 7:BG:761:VAL:HG21 | 2.56        | 0.40     |
| 5:DE:634:TRP:HH2  | 5:DE:664:ILE:HD12 | 1.86        | 0.40     |
| 1:BH:138:MET:HG2  | 8:BX:835:U:C5     | 2.56        | 0.40     |
| 6:BM:525:TRP:N    | 6:BM:525:TRP:CD1  | 2.83        | 0.40     |
| 2:CB:220:LYS:HZ3  | 3:CC:404:ASP:CB   | 2.34        | 0.40     |
| 2:CB:201:MET:SD   | 3:CC:332:LEU:CD2  | 3.09        | 0.40     |
| 2:AI:279:LEU:HD11 | 3:AJ:357:LYS:HZ2  | 1.85        | 0.40     |
| 2:AI:276:LEU:CD2  | 3:AJ:357:LYS:HE2  | 2.43        | 0.40     |
| 2:DB:229:ILE:HG23 | 2:DB:240:LEU:CD2  | 2.51        | 0.40     |
| 4:CK:22:THR:HG23  | 4:CK:28:TYR:HE1   | 1.86        | 0.40     |
| 3:BC:402:ARG:HH21 | 8:BV:836:U:H1'    | 1.83        | 0.40     |
| 5:DE:635:LEU:CD2  | 5:DE:679:LEU:HD13 | 2.52        | 0.40     |
| 2:BI:205:ARG:HA   | 2:BI:208:MET:CG   | 2.51        | 0.40     |
| 5:DS:621:ILE:HD11 | 7:DU:761:VAL:CG1  | 2.44        | 0.40     |
| 8:BV:849:G:P      | 8:BV:849:G:H3'    | 2.61        | 0.40     |
| 1:AH:140:LEU:HD11 | 1:AH:177:LEU:CD2  | 2.52        | 0.40     |
| 8:BV:826:U:H6     | 8:BV:826:U:O5'    | 2.04        | 0.40     |
| 5:CS:615:VAL:HG13 | 5:CS:616:GLN:N    | 2.35        | 0.40     |
| 8:BY:853:A:O2'    | 8:BY:854:A:H5'    | 2.21        | 0.40     |
| 4:BD:10:LEU:HD21  | 4:BD:35:ALA:CB    | 2.51        | 0.40     |
| 6:CM:534:VAL:CG2  | 6:CM:543:GLN:HG2  | 2.51        | 0.40     |
| 5:BE:648:ILE:HG22 | 5:CE:609:LYS:HB2  | 2.02        | 0.40     |
| 2:AP:276:LEU:HD22 | 3:AQ:357:LYS:HE3  | 2.03        | 0.40     |
| 2:CP:204:VAL:HG23 | 2:CP:205:ARG:N    | 2.36        | 0.40     |
| 3:AQ:410:LEU:HD21 | 6:AT:562:VAL:HG13 | 2.01        | 0.40     |
| 8:AX:840:A:H2'    | 8:AX:841:G:O4'    | 2.21        | 0.40     |
| 7:DG:756:ASN:O    | 7:DG:757:ILE:HD13 | 2.21        | 0.40     |
| 2:BP:286:LYS:CD   | 3:BQ:357:LYS:NZ   | 2.56        | 0.40     |
| 6:DT:547:THR:HG22 | 6:DT:562:VAL:HG23 | 2.01        | 0.40     |
| 5:AE:635:LEU:HD13 | 5:AE:687:LEU:HD21 | 1.99        | 0.40     |
| 6:AF:524:LYS:HB3  | 8:AV:838:A:H61    | 1.86        | 0.40     |
| 3:CC:374:TRP:CH2  | 3:CC:394:ARG:CB   | 2.91        | 0.40     |
| 1:DA:180:MET:HB2  | 2:DB:259:SER:HB3  | 2.02        | 0.40     |
| 8:BV:831:A:H2'    | 8:BV:832:U:OP1    | 2.21        | 0.40     |
| 2:AB:206:PHE:HD1  | 2:AB:210:LEU:HD11 | 1.86        | 0.40     |
| 3:BC:363:CYS:CB   | 6:BF:565:ARG:HD3  | 2.51        | 0.40     |
| 4:DD:19:THR:HB    | 4:DD:72:ILE:HB    | 2.03        | 0.40     |
| 5:CS:642:ARG:NE   | 5:CS:664:ILE:HG21 | 2.33        | 0.40     |
| 5:AE:631:ILE:HD12 | 5:DE:690:VAL:HG21 | 2.03        | 0.40     |
| 8:BV:854:A:C3'    | 8:BV:855:C:C5'    | 2.96        | 0.40     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 2:AP:232:VAL:HG22 | 2:AP:238:THR:CB   | 2.51        | 0.40     |
| 3:DJ:344:ILE:CG2  | 3:DJ:406:VAL:CG1  | 2.87        | 0.40     |
| 7:CG:737:PHE:HB3  | 8:CV:832:U:N3     | 2.36        | 0.40     |
| 8:BY:863:G:HO2'   | 8:BY:864:A:C5'    | 2.34        | 0.40     |
| 6:BF:514:LEU:HD11 | 6:BF:519:VAL:HG11 | 2.03        | 0.40     |
| 1:DH:150:LYS:HE3  | 1:DH:162:GLU:HB3  | 2.04        | 0.40     |
| 2:BI:205:ARG:HA   | 2:BI:208:MET:HE3  | 2.03        | 0.40     |
| 4:BR:32:LEU:CD1   | 4:BR:41:CYS:HB3   | 2.51        | 0.40     |
| 4:BD:39:MET:HB2   | 4:BD:65:GLY:HA3   | 2.02        | 0.40     |
| 2:DP:220:LYS:HA   | 2:DP:266:ARG:HB2  | 2.03        | 0.40     |
| 2:DP:212:HIS:HA   | 2:DP:228:THR:HG21 | 2.03        | 0.40     |
| 6:BM:518:PRO:CG   | 6:BM:575:VAL:HB   | 2.46        | 0.40     |
| 1:BH:148:PHE:HB3  | 1:BH:151:ILE:HD11 | 2.03        | 0.40     |
| 8:AY:815:A:N6     | 8:AY:816:A:N1     | 2.69        | 0.40     |
| 8:AV:818:G:O2'    | 8:AV:819:U:H5'    | 2.21        | 0.40     |
| 6:AM:516:GLY:HA2  | 6:AM:533:LEU:O    | 2.21        | 0.40     |
| 7:AG:705:HIS:CE1  | 7:AG:736:PRO:HB3  | 2.56        | 0.40     |
| 6:DF:520:MET:HE2  | 6:DF:530:LYS:HD2  | 2.04        | 0.40     |
| 8:BX:843:C:C2'    | 8:BX:844:U:O5'    | 2.69        | 0.40     |
| 6:BF:567:ASN:N    | 6:BF:567:ASN:OD1  | 2.54        | 0.40     |
| 6:AT:534:VAL:HG12 | 6:AT:534:VAL:O    | 2.21        | 0.40     |
| 4:DK:5:VAL:HB     | 4:DK:6:PRO:HD3    | 2.03        | 0.40     |
| 8:DY:864:A:C6     | 8:DY:865:C:C5     | 3.09        | 0.40     |
| 7:BG:757:ILE:CG2  | 7:BG:758:GLY:N    | 2.84        | 0.40     |
| 1:DH:137:HIS:CD2  | 8:DX:834:U:C6     | 3.09        | 0.40     |
| 2:AB:250:ARG:NH2  | 8:AV:859:A:O2'    | 2.54        | 0.40     |
| 5:AE:644:GLU:O    | 5:AE:662:GLU:N    | 2.54        | 0.40     |
| 6:AF:540:MET:HG2  | 8:AV:831:A:C6     | 2.56        | 0.40     |
| 7:CU:734:PHE:HD1  | 7:CU:740:LEU:CD2  | 2.34        | 0.40     |
| 7:AU:718:SER:OG   | 7:AU:726:HIS:CE1  | 2.74        | 0.40     |
| 1:CH:170:VAL:CG1  | 1:CH:171:LEU:N    | 2.84        | 0.40     |
| 6:BF:524:LYS:HB3  | 8:BV:838:A:H61    | 1.85        | 0.40     |
| 3:BC:407:ILE:HG12 | 6:BF:568:ASN:HD21 | 1.85        | 0.40     |
| 6:BF:521:VAL:HG11 | 6:BF:569:VAL:HG13 | 2.03        | 0.40     |
| 5:DS:642:ARG:HG3  | 5:DS:664:ILE:HB   | 2.02        | 0.40     |
| 1:CO:152:LYS:HB3  | 1:CO:153:PRO:HD2  | 2.03        | 0.40     |
| 2:BI:204:VAL:HG13 | 2:BI:236:MET:HA   | 2.04        | 0.40     |
| 1:DO:133:ALA:HB3  | 1:DO:141:ILE:CG1  | 2.52        | 0.40     |
| 5:BL:671:ARG:HE   | 5:BL:671:ARG:HB2  | 1.72        | 0.40     |
| 3:AJ:316:LEU:HD12 | 3:AJ:337:LYS:HG2  | 2.04        | 0.40     |
| 8:BX:853:A:N1     | 8:BX:854:A:C2     | 2.89        | 0.40     |
| 4:AR:64:ARG:NH1   | 7:AU:738:MET:SD   | 2.95        | 0.40     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 1:BO:184:GLY:HA2  | 1:BO:185:PRO:HD3  | 1.95        | 0.40     |
| 8:AY:838:A:OP2    | 8:AY:838:A:H4'    | 2.20        | 0.40     |
| 8:BV:862:A:C4     | 8:BV:863:G:C8     | 3.10        | 0.40     |
| 1:AA:149:ARG:HG2  | 1:AA:163:GLU:O    | 2.21        | 0.40     |
| 8:AV:817:A:C6     | 8:AV:818:G:O6     | 2.75        | 0.40     |
| 1:BA:191:GLY:O    | 1:BA:195:VAL:HG23 | 2.22        | 0.40     |
| 8:DX:819:U:O2'    | 8:DX:820:C:O5'    | 2.38        | 0.40     |
| 8:DX:826:U:H6     | 8:DX:826:U:C5'    | 2.33        | 0.40     |
| 6:AT:505:LEU:O    | 6:AT:509:PRO:CD   | 2.69        | 0.40     |
| 8:CX:841:G:H2'    | 8:CX:842:U:H6     | 1.87        | 0.40     |
| 4:CK:42:GLN:OE1   | 4:CK:60:GLN:NE2   | 2.55        | 0.40     |
| 2:CB:251:GLU:HB2  | 2:CB:252:PRO:HD2  | 2.04        | 0.40     |
| 2:AP:276:LEU:CB   | 3:AQ:357:LYS:CE   | 2.92        | 0.40     |
| 7:BG:745:CYS:SG   | 7:BG:760:VAL:HG12 | 2.58        | 0.40     |
| 8:AX:840:A:C2     | 8:AX:841:G:C1'    | 3.04        | 0.40     |
| 7:AN:741:VAL:CA   | 7:AN:760:VAL:O    | 2.70        | 0.40     |
| 7:AU:725:ARG:NH2  | 7:AU:749:ALA:CB   | 2.83        | 0.40     |
| 6:AF:558:HIS:NE2  | 3:AQ:413:PRO:CG   | 2.85        | 0.40     |
| 7:BN:741:VAL:HG13 | 7:BN:760:VAL:O    | 2.21        | 0.40     |
| 8:BV:840:A:H2'    | 8:BV:841:G:O4'    | 2.21        | 0.40     |
| 2:AB:229:ILE:HA   | 2:AB:240:LEU:HD23 | 2.00        | 0.40     |
| 1:BA:139:ASN:C    | 1:BA:140:LEU:HD23 | 2.41        | 0.40     |
| 7:DG:706:PRO:O    | 7:DG:709:LEU:HB3  | 2.21        | 0.40     |
| 7:DG:734:PHE:HD1  | 7:DG:740:LEU:HD23 | 1.86        | 0.40     |
| 7:DG:738:MET:CB   | 7:DG:764:GLY:HA3  | 2.51        | 0.40     |
| 4:DK:33:ILE:HB    | 4:DK:42:GLN:O     | 2.22        | 0.40     |
| 4:DK:59:GLU:CD    | 4:DK:59:GLU:H     | 2.25        | 0.40     |
| 1:AO:194:ARG:O    | 4:AR:90:ASN:ND2   | 2.54        | 0.40     |
| 6:DF:572:ILE:HG12 | 6:DF:573:ARG:N    | 2.37        | 0.40     |
| 7:CU:760:VAL:HG13 | 7:CU:760:VAL:O    | 2.21        | 0.40     |
| 2:AB:280:LEU:O    | 2:AB:281:VAL:C    | 2.60        | 0.40     |
| 3:AJ:360:ASP:OD2  | 3:AJ:362:HIS:HB2  | 2.21        | 0.40     |
| 4:DR:58:LEU:HD13  | 4:DR:61:VAL:CG1   | 2.51        | 0.40     |
| 2:AP:254:GLN:O    | 2:AP:255:LEU:HD23 | 2.21        | 0.40     |
| 4:CK:63:ILE:HG22  | 4:CK:64:ARG:O     | 2.21        | 0.40     |
| 6:AT:506:ASN:N    | 6:AT:507:PRO:HD2  | 2.36        | 0.40     |
| 3:BJ:345:ASN:HD21 | 3:BJ:410:LEU:HD21 | 1.87        | 0.40     |
| 5:DS:665:HIS:CB   | 5:DS:669:LYS:O    | 2.68        | 0.40     |
| 3:BQ:344:ILE:HD11 | 3:BQ:365:MET:SD   | 2.61        | 0.40     |
| 4:DR:11:HIS:HA    | 4:DR:14:GLU:CG    | 2.52        | 0.40     |
| 6:DF:506:ASN:HB2  | 6:DF:507:PRO:HD3  | 2.03        | 0.40     |
| 6:DF:508:LYS:N    | 6:DF:509:PRO:CD   | 2.85        | 0.40     |

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| Atom-1            | Atom-2            | Distance(Å) | Clash(Å) |
|-------------------|-------------------|-------------|----------|
| 4:DR:10:LEU:N     | 4:DR:10:LEU:HD23  | 2.35        | 0.40     |
| 1:BH:158:GLN:HG3  | 1:BH:158:GLN:O    | 2.22        | 0.40     |
| 1:CH:106:SER:O    | 1:CH:107:SER:C    | 2.60        | 0.40     |
| 3:BC:384:LYS:O    | 3:BC:385:LYS:HB2  | 2.22        | 0.40     |
| 3:CC:343:LEU:HD23 | 3:CC:410:LEU:CD1  | 2.34        | 0.40     |
| 1:CO:173:ARG:NH2  | 4:CR:66:SER:HA    | 2.37        | 0.40     |
| 3:CQ:407:ILE:O    | 3:CQ:407:ILE:CG2  | 2.69        | 0.40     |
| 3:DC:344:ILE:O    | 3:DC:351:LYS:HA   | 2.20        | 0.40     |
| 6:DF:550:TYR:O    | 6:DF:550:TYR:CG   | 2.74        | 0.40     |
| 5:AL:688:GLN:HG2  | 7:AN:760:VAL:CG2  | 2.41        | 0.40     |
| 5:BS:639:VAL:O    | 5:BS:639:VAL:HG12 | 2.21        | 0.40     |
| 8:BV:814:A:H2'    | 8:BV:815:A:H8     | 1.75        | 0.40     |
| 6:AF:538:GLY:C    | 6:AF:540:MET:H    | 2.25        | 0.40     |
| 7:BU:719:LEU:HD21 | 7:BU:740:LEU:HD22 | 2.03        | 0.40     |
| 2:AI:204:VAL:CG1  | 2:AI:236:MET:SD   | 2.94        | 0.40     |
| 2:DB:282:ASP:C    | 2:DB:283:VAL:CG2  | 2.90        | 0.40     |
| 5:DL:690:VAL:CG1  | 5:DS:631:ILE:HG23 | 2.51        | 0.40     |
| 6:BF:558:HIS:O    | 6:BF:558:HIS:CD2  | 2.74        | 0.40     |
| 4:DD:28:TYR:CZ    | 7:DG:769:MET:CE   | 3.04        | 0.40     |
| 3:AJ:334:GLN:HB3  | 3:AJ:418:LYS:HB2  | 2.03        | 0.40     |
| 3:AC:392:LYS:HA   | 6:AT:554:ALA:CB   | 2.50        | 0.40     |
| 1:DH:128:ILE:HD12 | 1:DH:148:PHE:HE2  | 1.87        | 0.40     |
| 7:AN:704:ALA:HB3  | 7:AN:707:PRO:HG2  | 2.02        | 0.40     |
| 8:AX:850:G:H2'    | 8:AX:851:G:H5'    | 2.04        | 0.40     |
| 4:DR:58:LEU:CD1   | 4:DR:61:VAL:CG1   | 3.00        | 0.40     |
| 8:BX:849:G:H2'    | 8:BX:850:G:C8     | 2.53        | 0.40     |
| 3:BJ:361:ARG:C    | 3:BJ:363:CYS:N    | 2.75        | 0.40     |
| 1:BA:151:ILE:HG22 | 1:BA:152:LYS:N    | 2.36        | 0.40     |
| 3:DJ:327:GLY:O    | 3:DJ:330:SER:HB3  | 2.22        | 0.40     |
| 4:CD:22:THR:HG21  | 4:CD:26:GLU:OE1   | 2.21        | 0.40     |
| 1:AO:145:CYS:O    | 1:AO:146:ASP:OD1  | 2.40        | 0.40     |

All (8) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

| Atom-1           | Atom-2                  | Distance(Å) | Clash(Å) |
|------------------|-------------------------|-------------|----------|
| 6:CF:553:GLY:O   | 3:CQ:393:ASP:OD1[2.664] | 1.70        | 0.50     |
| 8:BX:866:U:O4'   | 3:CJ:386:LYS:NZ[2.665]  | 1.96        | 0.24     |
| 8:BY:815:A:O2'   | 8:DY:857:U:O2'[2.765]   | 2.07        | 0.13     |
| 8:AX:813:G:O3'   | 1:CA:152:LYS:NZ[2.655]  | 2.08        | 0.12     |
| 2:AP:212:HIS:ND1 | 2:BP:212:HIS:ND1[2.655] | 2.13        | 0.07     |
| 8:AX:815:A:N6    | 8:CV:849:G:O2'[2.655]   | 2.13        | 0.07     |

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| Atom-1           | Atom-2                  | Distance(Å) | Clash(Å) |
|------------------|-------------------------|-------------|----------|
| 2:CB:277:ASP:OD2 | 2:DB:275:PRO:CB[1_554]  | 2.18        | 0.02     |
| 8:BY:812:U:O2    | 1:DO:155:ASN:ND2[2_765] | 2.19        | 0.01     |

## 5.3 Torsion angles

### 5.3.1 Protein backbone ⓘ

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   | AA    | 88/95 (93%)  | 81 (92%) | 5 (6%)   | 2 (2%)   | 10          | 63  |
| 1   | AH    | 89/95 (94%)  | 80 (90%) | 9 (10%)  | 0        | 100         | 100 |
| 1   | AO    | 87/95 (92%)  | 81 (93%) | 6 (7%)   | 0        | 100         | 100 |
| 1   | BA    | 89/95 (94%)  | 80 (90%) | 9 (10%)  | 0        | 100         | 100 |
| 1   | BH    | 93/95 (98%)  | 84 (90%) | 9 (10%)  | 0        | 100         | 100 |
| 1   | BO    | 88/95 (93%)  | 81 (92%) | 6 (7%)   | 1 (1%)   | 21          | 78  |
| 1   | CA    | 88/95 (93%)  | 81 (92%) | 7 (8%)   | 0        | 100         | 100 |
| 1   | CH    | 89/95 (94%)  | 83 (93%) | 6 (7%)   | 0        | 100         | 100 |
| 1   | CO    | 89/95 (94%)  | 82 (92%) | 7 (8%)   | 0        | 100         | 100 |
| 1   | DA    | 88/95 (93%)  | 84 (96%) | 4 (4%)   | 0        | 100         | 100 |
| 1   | DH    | 93/95 (98%)  | 85 (91%) | 8 (9%)   | 0        | 100         | 100 |
| 1   | DO    | 89/95 (94%)  | 79 (89%) | 8 (9%)   | 2 (2%)   | 10          | 64  |
| 2   | AB    | 95/119 (80%) | 85 (90%) | 7 (7%)   | 3 (3%)   | 6           | 55  |
| 2   | AI    | 94/119 (79%) | 82 (87%) | 10 (11%) | 2 (2%)   | 11          | 65  |
| 2   | AP    | 93/119 (78%) | 83 (89%) | 9 (10%)  | 1 (1%)   | 21          | 78  |
| 2   | BB    | 94/119 (79%) | 79 (84%) | 11 (12%) | 4 (4%)   | 4           | 46  |
| 2   | BI    | 94/119 (79%) | 78 (83%) | 13 (14%) | 3 (3%)   | 6           | 55  |
| 2   | BP    | 94/119 (79%) | 87 (93%) | 6 (6%)   | 1 (1%)   | 21          | 78  |
| 2   | CB    | 95/119 (80%) | 86 (90%) | 7 (7%)   | 2 (2%)   | 11          | 65  |
| 2   | CI    | 94/119 (79%) | 83 (88%) | 8 (8%)   | 3 (3%)   | 6           | 55  |

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| Mol | Chain | Analysed      | Favoured | Allowed  | Outliers | Percentiles |     |
|-----|-------|---------------|----------|----------|----------|-------------|-----|
| 2   | CP    | 93/119 (78%)  | 83 (89%) | 9 (10%)  | 1 (1%)   | 21          | 78  |
| 2   | DB    | 94/119 (79%)  | 93 (99%) | 1 (1%)   | 0        | 100         | 100 |
| 2   | DI    | 92/119 (77%)  | 87 (95%) | 4 (4%)   | 1 (1%)   | 21          | 78  |
| 2   | DP    | 93/119 (78%)  | 82 (88%) | 11 (12%) | 0        | 100         | 100 |
| 3   | AC    | 103/118 (87%) | 89 (86%) | 11 (11%) | 3 (3%)   | 7           | 58  |
| 3   | AJ    | 105/118 (89%) | 97 (92%) | 7 (7%)   | 1 (1%)   | 22          | 80  |
| 3   | AQ    | 88/118 (75%)  | 77 (88%) | 10 (11%) | 1 (1%)   | 21          | 78  |
| 3   | BC    | 103/118 (87%) | 89 (86%) | 13 (13%) | 1 (1%)   | 22          | 80  |
| 3   | BJ    | 104/118 (88%) | 93 (89%) | 9 (9%)   | 2 (2%)   | 12          | 67  |
| 3   | BQ    | 88/118 (75%)  | 82 (93%) | 3 (3%)   | 3 (3%)   | 6           | 54  |
| 3   | CC    | 103/118 (87%) | 88 (85%) | 12 (12%) | 3 (3%)   | 7           | 58  |
| 3   | CJ    | 105/118 (89%) | 91 (87%) | 13 (12%) | 1 (1%)   | 22          | 80  |
| 3   | CQ    | 90/118 (76%)  | 78 (87%) | 8 (9%)   | 4 (4%)   | 4           | 45  |
| 3   | DC    | 103/118 (87%) | 92 (89%) | 9 (9%)   | 2 (2%)   | 12          | 67  |
| 3   | DJ    | 104/118 (88%) | 95 (91%) | 7 (7%)   | 2 (2%)   | 12          | 67  |
| 3   | DQ    | 88/118 (75%)  | 81 (92%) | 7 (8%)   | 0        | 100         | 100 |
| 4   | AD    | 87/126 (69%)  | 77 (88%) | 10 (12%) | 0        | 100         | 100 |
| 4   | AK    | 87/126 (69%)  | 81 (93%) | 5 (6%)   | 1 (1%)   | 21          | 78  |
| 4   | AR    | 87/126 (69%)  | 84 (97%) | 2 (2%)   | 1 (1%)   | 21          | 78  |
| 4   | BD    | 87/126 (69%)  | 81 (93%) | 5 (6%)   | 1 (1%)   | 21          | 78  |
| 4   | BK    | 87/126 (69%)  | 80 (92%) | 6 (7%)   | 1 (1%)   | 21          | 78  |
| 4   | BR    | 87/126 (69%)  | 81 (93%) | 4 (5%)   | 2 (2%)   | 10          | 63  |
| 4   | CD    | 87/126 (69%)  | 81 (93%) | 5 (6%)   | 1 (1%)   | 21          | 78  |
| 4   | CK    | 88/126 (70%)  | 76 (86%) | 11 (12%) | 1 (1%)   | 21          | 78  |
| 4   | CR    | 87/126 (69%)  | 78 (90%) | 7 (8%)   | 2 (2%)   | 10          | 63  |
| 4   | DD    | 87/126 (69%)  | 79 (91%) | 7 (8%)   | 1 (1%)   | 21          | 78  |
| 4   | DK    | 87/126 (69%)  | 83 (95%) | 3 (3%)   | 1 (1%)   | 21          | 78  |
| 4   | DR    | 87/126 (69%)  | 83 (95%) | 3 (3%)   | 1 (1%)   | 21          | 78  |
| 5   | AE    | 84/92 (91%)   | 77 (92%) | 6 (7%)   | 1 (1%)   | 19          | 77  |
| 5   | AL    | 74/92 (80%)   | 67 (90%) | 6 (8%)   | 1 (1%)   | 16          | 72  |
| 5   | AS    | 76/92 (83%)   | 67 (88%) | 8 (10%)  | 1 (1%)   | 18          | 75  |

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| Mol | Chain | Analysed    | Favoured | Allowed | Outliers | Percentiles |     |
|-----|-------|-------------|----------|---------|----------|-------------|-----|
| 5   | BE    | 73/92 (79%) | 67 (92%) | 6 (8%)  | 0        | 100         | 100 |
| 5   | BL    | 73/92 (79%) | 66 (90%) | 7 (10%) | 0        | 100         | 100 |
| 5   | BS    | 80/92 (87%) | 73 (91%) | 5 (6%)  | 2 (2%)   | 9           | 61  |
| 5   | CE    | 82/92 (89%) | 74 (90%) | 8 (10%) | 0        | 100         | 100 |
| 5   | CL    | 73/92 (79%) | 67 (92%) | 5 (7%)  | 1 (1%)   | 16          | 72  |
| 5   | CS    | 76/92 (83%) | 67 (88%) | 9 (12%) | 0        | 100         | 100 |
| 5   | DE    | 74/92 (80%) | 65 (88%) | 7 (10%) | 2 (3%)   | 8           | 59  |
| 5   | DL    | 73/92 (79%) | 66 (90%) | 6 (8%)  | 1 (1%)   | 16          | 72  |
| 5   | DS    | 76/92 (83%) | 69 (91%) | 6 (8%)  | 1 (1%)   | 18          | 75  |
| 6   | AF    | 81/86 (94%) | 73 (90%) | 7 (9%)  | 1 (1%)   | 19          | 77  |
| 6   | AM    | 81/86 (94%) | 76 (94%) | 4 (5%)  | 1 (1%)   | 19          | 77  |
| 6   | AT    | 81/86 (94%) | 76 (94%) | 4 (5%)  | 1 (1%)   | 19          | 77  |
| 6   | BF    | 81/86 (94%) | 72 (89%) | 7 (9%)  | 2 (2%)   | 9           | 61  |
| 6   | BM    | 81/86 (94%) | 76 (94%) | 4 (5%)  | 1 (1%)   | 19          | 77  |
| 6   | BT    | 81/86 (94%) | 72 (89%) | 7 (9%)  | 2 (2%)   | 9           | 61  |
| 6   | CF    | 80/86 (93%) | 73 (91%) | 7 (9%)  | 0        | 100         | 100 |
| 6   | CM    | 81/86 (94%) | 74 (91%) | 6 (7%)  | 1 (1%)   | 19          | 77  |
| 6   | CT    | 81/86 (94%) | 72 (89%) | 8 (10%) | 1 (1%)   | 19          | 77  |
| 6   | DF    | 81/86 (94%) | 70 (86%) | 8 (10%) | 3 (4%)   | 5           | 51  |
| 6   | DM    | 81/86 (94%) | 77 (95%) | 4 (5%)  | 0        | 100         | 100 |
| 6   | DT    | 81/86 (94%) | 75 (93%) | 5 (6%)  | 1 (1%)   | 19          | 77  |
| 7   | AG    | 71/76 (93%) | 66 (93%) | 5 (7%)  | 0        | 100         | 100 |
| 7   | AN    | 69/76 (91%) | 63 (91%) | 5 (7%)  | 1 (1%)   | 16          | 72  |
| 7   | AU    | 71/76 (93%) | 64 (90%) | 6 (8%)  | 1 (1%)   | 16          | 72  |
| 7   | BG    | 71/76 (93%) | 67 (94%) | 2 (3%)  | 2 (3%)   | 8           | 59  |
| 7   | BN    | 72/76 (95%) | 70 (97%) | 2 (3%)  | 0        | 100         | 100 |
| 7   | BU    | 68/76 (90%) | 64 (94%) | 3 (4%)  | 1 (2%)   | 15          | 72  |
| 7   | CG    | 71/76 (93%) | 61 (86%) | 9 (13%) | 1 (1%)   | 16          | 72  |
| 7   | CN    | 68/76 (90%) | 67 (98%) | 0       | 1 (2%)   | 15          | 72  |
| 7   | CU    | 71/76 (93%) | 62 (87%) | 9 (13%) | 0        | 100         | 100 |
| 7   | DG    | 71/76 (93%) | 65 (92%) | 5 (7%)  | 1 (1%)   | 16          | 72  |

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| Mol | Chain | Analysed        | Favoured   | Allowed  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|----------|-------------|-----|
| 7   | DN    | 71/76 (93%)     | 63 (89%)   | 8 (11%)  | 0        | 100         | 100 |
| 7   | DU    | 68/76 (90%)     | 64 (94%)   | 4 (6%)   | 0        | 100         | 100 |
| All | All   | 7151/8544 (84%) | 6492 (91%) | 565 (8%) | 94 (1%)  | 18          | 75  |

All (94) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | AI    | 284 | GLU  |
| 3   | AJ    | 412 | ASN  |
| 7   | AN    | 773 | LEU  |
| 6   | BF    | 506 | ASN  |
| 2   | BP    | 295 | VAL  |
| 2   | CB    | 296 | ALA  |
| 4   | CR    | 91  | GLN  |
| 3   | DC    | 412 | ASN  |
| 6   | DF    | 540 | MET  |
| 2   | DI    | 295 | VAL  |
| 1   | AA    | 149 | ARG  |
| 2   | AB    | 221 | ASN  |
| 5   | AE    | 628 | ARG  |
| 5   | AL    | 690 | VAL  |
| 2   | AP    | 295 | VAL  |
| 4   | AR    | 80  | ALA  |
| 2   | BB    | 272 | ASP  |
| 3   | BC    | 412 | ASN  |
| 4   | BR    | 91  | GLN  |
| 5   | BS    | 668 | THR  |
| 2   | CI    | 283 | VAL  |
| 3   | CJ    | 349 | ASN  |
| 6   | CM    | 506 | ASN  |
| 6   | CT    | 524 | LYS  |
| 4   | DD    | 91  | GLN  |
| 5   | DE    | 653 | TYR  |
| 4   | DR    | 91  | GLN  |
| 5   | DS    | 668 | THR  |
| 3   | AC    | 412 | ASN  |
| 6   | AM    | 546 | ASN  |
| 6   | AT    | 540 | MET  |
| 2   | BB    | 211 | SER  |
| 6   | BF    | 555 | LEU  |
| 7   | BG    | 758 | GLY  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | BI    | 214 | THR  |
| 2   | BI    | 284 | GLU  |
| 3   | BQ    | 362 | HIS  |
| 2   | CB    | 284 | GLU  |
| 3   | CC    | 412 | ASN  |
| 7   | CN    | 737 | PHE  |
| 3   | CQ    | 362 | HIS  |
| 3   | CQ    | 383 | GLY  |
| 5   | DE    | 668 | THR  |
| 2   | AB    | 284 | GLU  |
| 3   | AC    | 387 | SER  |
| 6   | AF    | 539 | TYR  |
| 4   | AK    | 91  | GLN  |
| 7   | AU    | 723 | GLY  |
| 4   | BD    | 5   | VAL  |
| 7   | BG    | 737 | PHE  |
| 2   | BI    | 295 | VAL  |
| 1   | BO    | 138 | MET  |
| 2   | CP    | 236 | MET  |
| 3   | CQ    | 412 | ASN  |
| 4   | CR    | 5   | VAL  |
| 6   | DF    | 506 | ASN  |
| 4   | DK    | 91  | GLN  |
| 1   | DO    | 138 | MET  |
| 2   | AI    | 295 | VAL  |
| 3   | AQ    | 389 | PRO  |
| 6   | BM    | 509 | PRO  |
| 6   | BT    | 506 | ASN  |
| 6   | BT    | 539 | TYR  |
| 3   | CC    | 362 | HIS  |
| 4   | CD    | 81  | PRO  |
| 2   | CI    | 236 | MET  |
| 5   | CL    | 690 | VAL  |
| 3   | AC    | 362 | HIS  |
| 4   | CK    | 6   | PRO  |
| 3   | CQ    | 388 | LYS  |
| 3   | BJ    | 327 | GLY  |
| 3   | DJ    | 388 | LYS  |
| 5   | DL    | 690 | VAL  |
| 1   | AA    | 151 | ILE  |
| 5   | AS    | 616 | GLN  |
| 7   | DG    | 705 | HIS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | AB    | 281 | VAL  |
| 3   | BJ    | 390 | VAL  |
| 3   | BQ    | 383 | GLY  |
| 3   | BQ    | 388 | LYS  |
| 4   | BR    | 7   | ILE  |
| 2   | CI    | 295 | VAL  |
| 6   | DF    | 507 | PRO  |
| 2   | BB    | 274 | LEU  |
| 5   | BS    | 616 | GLN  |
| 3   | CC    | 378 | PRO  |
| 7   | CG    | 758 | GLY  |
| 3   | DC    | 328 | PRO  |
| 6   | DT    | 506 | ASN  |
| 2   | BB    | 262 | GLY  |
| 4   | BK    | 74  | PRO  |
| 7   | BU    | 705 | HIS  |
| 3   | DJ    | 412 | ASN  |
| 1   | DO    | 187 | 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   | AA    | 81/85 (95%)  | 80 (99%)  | 1 (1%)   | 82          | 96  |
| 1   | AH    | 82/85 (96%)  | 79 (96%)  | 3 (4%)   | 45          | 86  |
| 1   | AO    | 80/85 (94%)  | 78 (98%)  | 2 (2%)   | 60          | 91  |
| 1   | BA    | 82/85 (96%)  | 81 (99%)  | 1 (1%)   | 82          | 96  |
| 1   | BH    | 85/85 (100%) | 85 (100%) | 0        | 100         | 100 |
| 1   | BO    | 81/85 (95%)  | 80 (99%)  | 1 (1%)   | 82          | 96  |
| 1   | CA    | 81/85 (95%)  | 80 (99%)  | 1 (1%)   | 82          | 96  |
| 1   | CH    | 82/85 (96%)  | 79 (96%)  | 3 (4%)   | 45          | 86  |
| 1   | CO    | 82/85 (96%)  | 82 (100%) | 0        | 100         | 100 |
| 1   | DA    | 81/85 (95%)  | 80 (99%)  | 1 (1%)   | 82          | 96  |
| 1   | DH    | 85/85 (100%) | 84 (99%)  | 1 (1%)   | 82          | 96  |

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| Mol | Chain | Analysed     | Rotameric | Outliers | Percentiles |     |
|-----|-------|--------------|-----------|----------|-------------|-----|
| 1   | DO    | 82/85 (96%)  | 81 (99%)  | 1 (1%)   | 82          | 96  |
| 2   | AB    | 89/101 (88%) | 87 (98%)  | 2 (2%)   | 64          | 92  |
| 2   | AI    | 88/101 (87%) | 86 (98%)  | 2 (2%)   | 63          | 92  |
| 2   | AP    | 88/101 (87%) | 86 (98%)  | 2 (2%)   | 63          | 92  |
| 2   | BB    | 88/101 (87%) | 87 (99%)  | 1 (1%)   | 84          | 96  |
| 2   | BI    | 88/101 (87%) | 86 (98%)  | 2 (2%)   | 63          | 92  |
| 2   | BP    | 89/101 (88%) | 87 (98%)  | 2 (2%)   | 64          | 92  |
| 2   | CB    | 89/101 (88%) | 89 (100%) | 0        | 100         | 100 |
| 2   | CI    | 88/101 (87%) | 85 (97%)  | 3 (3%)   | 49          | 88  |
| 2   | CP    | 88/101 (87%) | 88 (100%) | 0        | 100         | 100 |
| 2   | DB    | 89/101 (88%) | 88 (99%)  | 1 (1%)   | 84          | 96  |
| 2   | DI    | 87/101 (86%) | 87 (100%) | 0        | 100         | 100 |
| 2   | DP    | 88/101 (87%) | 85 (97%)  | 3 (3%)   | 49          | 88  |
| 3   | AC    | 97/110 (88%) | 95 (98%)  | 2 (2%)   | 66          | 93  |
| 3   | AJ    | 99/110 (90%) | 95 (96%)  | 4 (4%)   | 42          | 85  |
| 3   | AQ    | 83/110 (76%) | 81 (98%)  | 2 (2%)   | 61          | 92  |
| 3   | BC    | 97/110 (88%) | 93 (96%)  | 4 (4%)   | 41          | 85  |
| 3   | BJ    | 98/110 (89%) | 95 (97%)  | 3 (3%)   | 52          | 90  |
| 3   | BQ    | 83/110 (76%) | 82 (99%)  | 1 (1%)   | 82          | 96  |
| 3   | CC    | 97/110 (88%) | 95 (98%)  | 2 (2%)   | 66          | 93  |
| 3   | CJ    | 99/110 (90%) | 97 (98%)  | 2 (2%)   | 68          | 93  |
| 3   | CQ    | 85/110 (77%) | 80 (94%)  | 5 (6%)   | 28          | 76  |
| 3   | DC    | 97/110 (88%) | 96 (99%)  | 1 (1%)   | 85          | 97  |
| 3   | DJ    | 98/110 (89%) | 97 (99%)  | 1 (1%)   | 85          | 97  |
| 3   | DQ    | 83/110 (76%) | 83 (100%) | 0        | 100         | 100 |
| 4   | AD    | 78/101 (77%) | 78 (100%) | 0        | 100         | 100 |
| 4   | AK    | 78/101 (77%) | 77 (99%)  | 1 (1%)   | 80          | 96  |
| 4   | AR    | 78/101 (77%) | 77 (99%)  | 1 (1%)   | 80          | 96  |
| 4   | BD    | 78/101 (77%) | 78 (100%) | 0        | 100         | 100 |
| 4   | BK    | 78/101 (77%) | 76 (97%)  | 2 (3%)   | 59          | 91  |
| 4   | BR    | 78/101 (77%) | 77 (99%)  | 1 (1%)   | 80          | 96  |

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| Mol | Chain | Analysed     | Rotameric | Outliers | Percentiles |     |
|-----|-------|--------------|-----------|----------|-------------|-----|
| 4   | CD    | 78/101 (77%) | 77 (99%)  | 1 (1%)   | 80          | 96  |
| 4   | CK    | 78/101 (77%) | 78 (100%) | 0        | 100         | 100 |
| 4   | CR    | 78/101 (77%) | 78 (100%) | 0        | 100         | 100 |
| 4   | DD    | 78/101 (77%) | 77 (99%)  | 1 (1%)   | 80          | 96  |
| 4   | DK    | 78/101 (77%) | 77 (99%)  | 1 (1%)   | 80          | 96  |
| 4   | DR    | 78/101 (77%) | 77 (99%)  | 1 (1%)   | 80          | 96  |
| 5   | AE    | 80/84 (95%)  | 79 (99%)  | 1 (1%)   | 80          | 96  |
| 5   | AL    | 71/84 (84%)  | 70 (99%)  | 1 (1%)   | 78          | 96  |
| 5   | AS    | 73/84 (87%)  | 72 (99%)  | 1 (1%)   | 78          | 96  |
| 5   | BE    | 70/84 (83%)  | 66 (94%)  | 4 (6%)   | 29          | 77  |
| 5   | BL    | 70/84 (83%)  | 69 (99%)  | 1 (1%)   | 78          | 96  |
| 5   | BS    | 77/84 (92%)  | 75 (97%)  | 2 (3%)   | 59          | 91  |
| 5   | CE    | 79/84 (94%)  | 79 (100%) | 0        | 100         | 100 |
| 5   | CL    | 70/84 (83%)  | 68 (97%)  | 2 (3%)   | 55          | 90  |
| 5   | CS    | 73/84 (87%)  | 73 (100%) | 0        | 100         | 100 |
| 5   | DE    | 71/84 (84%)  | 71 (100%) | 0        | 100         | 100 |
| 5   | DL    | 70/84 (83%)  | 70 (100%) | 0        | 100         | 100 |
| 5   | DS    | 73/84 (87%)  | 73 (100%) | 0        | 100         | 100 |
| 6   | AF    | 71/74 (96%)  | 70 (99%)  | 1 (1%)   | 78          | 96  |
| 6   | AM    | 71/74 (96%)  | 70 (99%)  | 1 (1%)   | 78          | 96  |
| 6   | AT    | 71/74 (96%)  | 69 (97%)  | 2 (3%)   | 56          | 90  |
| 6   | BF    | 70/74 (95%)  | 67 (96%)  | 3 (4%)   | 40          | 84  |
| 6   | BM    | 71/74 (96%)  | 70 (99%)  | 1 (1%)   | 78          | 96  |
| 6   | BT    | 71/74 (96%)  | 71 (100%) | 0        | 100         | 100 |
| 6   | CF    | 69/74 (93%)  | 67 (97%)  | 2 (3%)   | 55          | 90  |
| 6   | CM    | 71/74 (96%)  | 71 (100%) | 0        | 100         | 100 |
| 6   | CT    | 71/74 (96%)  | 71 (100%) | 0        | 100         | 100 |
| 6   | DF    | 71/74 (96%)  | 70 (99%)  | 1 (1%)   | 78          | 96  |
| 6   | DM    | 71/74 (96%)  | 70 (99%)  | 1 (1%)   | 78          | 96  |
| 6   | DT    | 71/74 (96%)  | 71 (100%) | 0        | 100         | 100 |
| 7   | AG    | 63/66 (96%)  | 60 (95%)  | 3 (5%)   | 35          | 82  |

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| Mol | Chain | Analysed        | Rotameric  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|-------------|-----|
| 7   | AN    | 60/66 (91%)     | 59 (98%)   | 1 (2%)   | 73          | 95  |
| 7   | AU    | 63/66 (96%)     | 62 (98%)   | 1 (2%)   | 75          | 95  |
| 7   | BG    | 63/66 (96%)     | 63 (100%)  | 0        | 100         | 100 |
| 7   | BN    | 64/66 (97%)     | 63 (98%)   | 1 (2%)   | 75          | 95  |
| 7   | BU    | 59/66 (89%)     | 59 (100%)  | 0        | 100         | 100 |
| 7   | CG    | 63/66 (96%)     | 60 (95%)   | 3 (5%)   | 35          | 82  |
| 7   | CN    | 59/66 (89%)     | 58 (98%)   | 1 (2%)   | 73          | 95  |
| 7   | CU    | 63/66 (96%)     | 62 (98%)   | 1 (2%)   | 75          | 95  |
| 7   | DG    | 62/66 (94%)     | 61 (98%)   | 1 (2%)   | 75          | 95  |
| 7   | DN    | 63/66 (96%)     | 61 (97%)   | 2 (3%)   | 51          | 89  |
| 7   | DU    | 59/66 (89%)     | 59 (100%)  | 0        | 100         | 100 |
| All | All   | 6562/7452 (88%) | 6455 (98%) | 107 (2%) | 75          | 95  |

All (107) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 154 | LYS  |
| 2   | AB    | 212 | HIS  |
| 2   | AB    | 223 | THR  |
| 3   | AC    | 377 | VAL  |
| 3   | AC    | 393 | ASP  |
| 5   | AE    | 658 | LEU  |
| 6   | AF    | 514 | LEU  |
| 7   | AG    | 718 | SER  |
| 7   | AG    | 735 | ASP  |
| 7   | AG    | 774 | GLU  |
| 1   | AH    | 171 | LEU  |
| 1   | AH    | 176 | ASN  |
| 1   | AH    | 179 | SER  |
| 2   | AI    | 221 | ASN  |
| 2   | AI    | 234 | VAL  |
| 3   | AJ    | 343 | LEU  |
| 3   | AJ    | 393 | ASP  |
| 3   | AJ    | 410 | LEU  |
| 3   | AJ    | 414 | LEU  |
| 4   | AK    | 41  | CYS  |
| 5   | AL    | 647 | ILE  |
| 6   | AM    | 547 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | AN    | 737 | PHE  |
| 1   | AO    | 155 | ASN  |
| 1   | AO    | 156 | SER  |
| 2   | AP    | 212 | HIS  |
| 2   | AP    | 214 | THR  |
| 3   | AQ    | 390 | VAL  |
| 3   | AQ    | 413 | PRO  |
| 4   | AR    | 83  | LEU  |
| 5   | AS    | 639 | VAL  |
| 6   | AT    | 544 | LEU  |
| 6   | AT    | 566 | CYS  |
| 7   | AU    | 759 | MET  |
| 1   | BA    | 171 | LEU  |
| 2   | BB    | 215 | VAL  |
| 3   | BC    | 316 | LEU  |
| 3   | BC    | 320 | GLU  |
| 3   | BC    | 336 | VAL  |
| 3   | BC    | 405 | SER  |
| 5   | BE    | 640 | ASN  |
| 5   | BE    | 651 | ASP  |
| 5   | BE    | 658 | LEU  |
| 5   | BE    | 673 | GLN  |
| 6   | BF    | 507 | PRO  |
| 6   | BF    | 547 | THR  |
| 6   | BF    | 571 | TYR  |
| 2   | BI    | 279 | LEU  |
| 2   | BI    | 280 | LEU  |
| 3   | BJ    | 349 | ASN  |
| 3   | BJ    | 356 | VAL  |
| 3   | BJ    | 410 | LEU  |
| 4   | BK    | 24  | THR  |
| 4   | BK    | 71  | LEU  |
| 5   | BL    | 689 | SER  |
| 6   | BM    | 566 | CYS  |
| 7   | BN    | 737 | PHE  |
| 1   | BO    | 130 | THR  |
| 2   | BP    | 208 | MET  |
| 2   | BP    | 234 | VAL  |
| 3   | BQ    | 399 | MET  |
| 4   | BR    | 27  | VAL  |
| 5   | BS    | 656 | LEU  |
| 5   | BS    | 668 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | CA    | 143 | CYS  |
| 3   | CC    | 330 | SER  |
| 3   | CC    | 334 | GLN  |
| 4   | CD    | 55  | VAL  |
| 6   | CF    | 506 | ASN  |
| 6   | CF    | 537 | ASP  |
| 7   | CG    | 718 | SER  |
| 7   | CG    | 721 | LEU  |
| 7   | CG    | 751 | SER  |
| 1   | CH    | 109 | MET  |
| 1   | CH    | 176 | ASN  |
| 1   | CH    | 181 | THR  |
| 2   | CI    | 203 | LEU  |
| 2   | CI    | 223 | THR  |
| 2   | CI    | 279 | LEU  |
| 3   | CJ    | 394 | ARG  |
| 3   | CJ    | 397 | SER  |
| 5   | CL    | 620 | LEU  |
| 5   | CL    | 640 | ASN  |
| 7   | CN    | 735 | ASP  |
| 3   | CQ    | 336 | VAL  |
| 3   | CQ    | 346 | CYS  |
| 3   | CQ    | 353 | LEU  |
| 3   | CQ    | 373 | MET  |
| 3   | CQ    | 377 | VAL  |
| 7   | CU    | 735 | ASP  |
| 1   | DA    | 130 | THR  |
| 2   | DB    | 246 | THR  |
| 3   | DC    | 336 | VAL  |
| 4   | DD    | 52  | ASP  |
| 6   | DF    | 547 | THR  |
| 7   | DG    | 765 | ASN  |
| 1   | DH    | 156 | SER  |
| 3   | DJ    | 332 | LEU  |
| 4   | DK    | 18  | VAL  |
| 6   | DM    | 505 | LEU  |
| 7   | DN    | 756 | ASN  |
| 7   | DN    | 765 | ASN  |
| 1   | DO    | 181 | THR  |
| 2   | DP    | 211 | SER  |
| 2   | DP    | 245 | MET  |
| 2   | DP    | 257 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | DR    | 38  | ASN  |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (193) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | AA    | 155 | ASN  |
| 2   | AB    | 237 | ASN  |
| 2   | AB    | 239 | HIS  |
| 2   | AB    | 263 | ASN  |
| 2   | AB    | 264 | ASN  |
| 3   | AC    | 362 | HIS  |
| 3   | AC    | 369 | ASN  |
| 3   | AC    | 391 | ASN  |
| 4   | AD    | 42  | GLN  |
| 4   | AD    | 79  | ASN  |
| 5   | AE    | 640 | ASN  |
| 5   | AE    | 665 | HIS  |
| 6   | AF    | 506 | ASN  |
| 6   | AF    | 568 | ASN  |
| 7   | AG    | 765 | ASN  |
| 1   | AH    | 176 | ASN  |
| 2   | AI    | 224 | GLN  |
| 2   | AI    | 264 | ASN  |
| 3   | AJ    | 325 | ASN  |
| 3   | AJ    | 338 | ASN  |
| 3   | AJ    | 339 | ASN  |
| 3   | AJ    | 348 | ASN  |
| 4   | AK    | 16  | HIS  |
| 4   | AK    | 42  | GLN  |
| 4   | AK    | 57  | GLN  |
| 4   | AK    | 60  | GLN  |
| 4   | AK    | 79  | ASN  |
| 4   | AK    | 88  | ASN  |
| 5   | AL    | 640 | ASN  |
| 6   | AM    | 512 | ASN  |
| 6   | AM    | 546 | ASN  |
| 6   | AM    | 568 | ASN  |
| 7   | AN    | 754 | GLN  |
| 7   | AN    | 756 | ASN  |
| 7   | AN    | 765 | ASN  |
| 1   | AO    | 112 | HIS  |
| 2   | AP    | 221 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | AP    | 239 | HIS  |
| 2   | AP    | 263 | ASN  |
| 2   | AP    | 264 | ASN  |
| 3   | AQ    | 369 | ASN  |
| 3   | AQ    | 391 | ASN  |
| 4   | AR    | 60  | GLN  |
| 4   | AR    | 90  | ASN  |
| 5   | AS    | 683 | ASN  |
| 6   | AT    | 506 | ASN  |
| 6   | AT    | 543 | GLN  |
| 6   | AT    | 568 | ASN  |
| 2   | BB    | 212 | HIS  |
| 2   | BB    | 224 | GLN  |
| 2   | BB    | 249 | ASN  |
| 2   | BB    | 264 | ASN  |
| 3   | BC    | 325 | ASN  |
| 3   | BC    | 391 | ASN  |
| 3   | BC    | 412 | ASN  |
| 4   | BD    | 42  | GLN  |
| 4   | BD    | 60  | GLN  |
| 4   | BD    | 79  | ASN  |
| 5   | BE    | 632 | GLN  |
| 5   | BE    | 673 | GLN  |
| 6   | BF    | 558 | HIS  |
| 7   | BG    | 765 | ASN  |
| 2   | BI    | 212 | HIS  |
| 2   | BI    | 221 | ASN  |
| 2   | BI    | 254 | GLN  |
| 2   | BI    | 263 | ASN  |
| 2   | BI    | 264 | ASN  |
| 3   | BJ    | 334 | GLN  |
| 3   | BJ    | 412 | ASN  |
| 4   | BK    | 42  | GLN  |
| 4   | BK    | 57  | GLN  |
| 4   | BK    | 60  | GLN  |
| 4   | BK    | 91  | GLN  |
| 5   | BL    | 632 | GLN  |
| 5   | BL    | 640 | ASN  |
| 5   | BL    | 665 | HIS  |
| 6   | BM    | 543 | GLN  |
| 6   | BM    | 568 | ASN  |
| 7   | BN    | 765 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | BO    | 122 | GLN  |
| 2   | BP    | 239 | HIS  |
| 2   | BP    | 263 | ASN  |
| 2   | BP    | 264 | ASN  |
| 3   | BQ    | 338 | ASN  |
| 3   | BQ    | 339 | ASN  |
| 3   | BQ    | 364 | ASN  |
| 3   | BQ    | 369 | ASN  |
| 4   | BR    | 16  | HIS  |
| 4   | BR    | 42  | GLN  |
| 4   | BR    | 60  | GLN  |
| 5   | BS    | 611 | GLN  |
| 6   | BT    | 543 | GLN  |
| 6   | BT    | 568 | ASN  |
| 7   | BU    | 705 | HIS  |
| 7   | BU    | 765 | ASN  |
| 1   | CA    | 176 | ASN  |
| 2   | CB    | 237 | ASN  |
| 2   | CB    | 264 | ASN  |
| 3   | CC    | 345 | ASN  |
| 3   | CC    | 348 | ASN  |
| 3   | CC    | 349 | ASN  |
| 3   | CC    | 364 | ASN  |
| 3   | CC    | 391 | ASN  |
| 4   | CD    | 42  | GLN  |
| 4   | CD    | 45  | ASN  |
| 4   | CD    | 60  | GLN  |
| 4   | CD    | 79  | ASN  |
| 4   | CD    | 91  | GLN  |
| 5   | CE    | 640 | ASN  |
| 6   | CF    | 568 | ASN  |
| 1   | CH    | 176 | ASN  |
| 2   | CI    | 221 | ASN  |
| 2   | CI    | 226 | HIS  |
| 2   | CI    | 239 | HIS  |
| 2   | CI    | 254 | GLN  |
| 2   | CI    | 264 | ASN  |
| 3   | CJ    | 334 | GLN  |
| 3   | CJ    | 341 | GLN  |
| 4   | CK    | 42  | GLN  |
| 4   | CK    | 60  | GLN  |
| 4   | CK    | 91  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5   | CL    | 619 | ASN  |
| 5   | CL    | 626 | GLN  |
| 5   | CL    | 665 | HIS  |
| 6   | CM    | 568 | ASN  |
| 7   | CN    | 705 | HIS  |
| 1   | CO    | 112 | HIS  |
| 1   | CO    | 122 | GLN  |
| 2   | CP    | 212 | HIS  |
| 2   | CP    | 221 | ASN  |
| 2   | CP    | 239 | HIS  |
| 2   | CP    | 264 | ASN  |
| 3   | CQ    | 349 | ASN  |
| 3   | CQ    | 362 | HIS  |
| 3   | CQ    | 369 | ASN  |
| 3   | CQ    | 391 | ASN  |
| 4   | CR    | 16  | HIS  |
| 4   | CR    | 60  | GLN  |
| 4   | CR    | 79  | ASN  |
| 5   | CS    | 665 | HIS  |
| 5   | CS    | 683 | ASN  |
| 6   | CT    | 506 | ASN  |
| 6   | CT    | 568 | ASN  |
| 7   | CU    | 705 | HIS  |
| 7   | CU    | 765 | ASN  |
| 1   | DA    | 155 | ASN  |
| 1   | DA    | 176 | ASN  |
| 2   | DB    | 249 | ASN  |
| 2   | DB    | 264 | ASN  |
| 3   | DC    | 325 | ASN  |
| 3   | DC    | 334 | GLN  |
| 3   | DC    | 348 | ASN  |
| 3   | DC    | 364 | ASN  |
| 4   | DD    | 42  | GLN  |
| 4   | DD    | 60  | GLN  |
| 4   | DD    | 79  | ASN  |
| 5   | DE    | 632 | GLN  |
| 5   | DE    | 640 | ASN  |
| 5   | DE    | 673 | GLN  |
| 5   | DE    | 683 | ASN  |
| 6   | DF    | 543 | GLN  |
| 6   | DF    | 546 | ASN  |
| 6   | DF    | 568 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 7   | DG    | 726 | HIS  |
| 7   | DG    | 765 | ASN  |
| 1   | DH    | 158 | GLN  |
| 2   | DI    | 264 | ASN  |
| 4   | DK    | 11  | HIS  |
| 4   | DK    | 42  | GLN  |
| 4   | DK    | 60  | GLN  |
| 4   | DK    | 79  | ASN  |
| 5   | DL    | 683 | ASN  |
| 5   | DL    | 688 | GLN  |
| 6   | DM    | 568 | ASN  |
| 7   | DN    | 726 | HIS  |
| 7   | DN    | 765 | ASN  |
| 1   | DO    | 122 | GLN  |
| 2   | DP    | 263 | ASN  |
| 2   | DP    | 264 | ASN  |
| 3   | DQ    | 349 | ASN  |
| 3   | DQ    | 362 | HIS  |
| 3   | DQ    | 364 | ASN  |
| 4   | DR    | 11  | HIS  |
| 4   | DR    | 79  | ASN  |
| 5   | DS    | 673 | GLN  |
| 6   | DT    | 546 | ASN  |
| 6   | DT    | 558 | HIS  |
| 6   | DT    | 568 | ASN  |
| 7   | DU    | 705 | HIS  |
| 7   | DU    | 726 | HIS  |
| 7   | DU    | 754 | GLN  |
| 7   | DU    | 755 | ASN  |
| 7   | DU    | 765 | ASN  |

### 5.3.3 RNA ⓘ

| Mol | Chain | Analysed     | Backbone Outliers | Pucker Outliers |
|-----|-------|--------------|-------------------|-----------------|
| 8   | AV    | 68/68 (100%) | 32 (47%)          | 8 (11%)         |
| 8   | AX    | 67/68 (98%)  | 28 (41%)          | 6 (8%)          |
| 8   | AY    | 67/68 (98%)  | 35 (52%)          | 5 (7%)          |
| 8   | BV    | 67/68 (98%)  | 33 (49%)          | 6 (8%)          |
| 8   | BX    | 67/68 (98%)  | 35 (52%)          | 2 (2%)          |
| 8   | BY    | 67/68 (98%)  | 39 (58%)          | 3 (4%)          |
| 8   | CV    | 67/68 (98%)  | 29 (43%)          | 6 (8%)          |

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| Mol | Chain | Analysed      | Backbone Outliers | Pucker Outliers |
|-----|-------|---------------|-------------------|-----------------|
| 8   | CX    | 67/68 (98%)   | 34 (50%)          | 5 (7%)          |
| 8   | CY    | 67/68 (98%)   | 34 (50%)          | 8 (11%)         |
| 8   | DV    | 67/68 (98%)   | 25 (37%)          | 5 (7%)          |
| 8   | DX    | 67/68 (98%)   | 31 (46%)          | 7 (10%)         |
| 8   | DY    | 67/68 (98%)   | 33 (49%)          | 6 (8%)          |
| All | All   | 805/816 (98%) | 388 (48%)         | 67 (8%)         |

All (388) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AV    | 802 | C    |
| 8   | AV    | 804 | G    |
| 8   | AV    | 806 | G    |
| 8   | AV    | 807 | A    |
| 8   | AV    | 808 | C    |
| 8   | AV    | 809 | G    |
| 8   | AV    | 810 | A    |
| 8   | AV    | 811 | C    |
| 8   | AV    | 812 | U    |
| 8   | AV    | 813 | G    |
| 8   | AV    | 815 | A    |
| 8   | AV    | 816 | A    |
| 8   | AV    | 817 | A    |
| 8   | AV    | 822 | G    |
| 8   | AV    | 824 | A    |
| 8   | AV    | 831 | A    |
| 8   | AV    | 832 | U    |
| 8   | AV    | 833 | U    |
| 8   | AV    | 834 | U    |
| 8   | AV    | 835 | U    |
| 8   | AV    | 836 | U    |
| 8   | AV    | 837 | G    |
| 8   | AV    | 838 | A    |
| 8   | AV    | 846 | U    |
| 8   | AV    | 847 | A    |
| 8   | AV    | 848 | U    |
| 8   | AV    | 849 | G    |
| 8   | AV    | 850 | G    |
| 8   | AV    | 851 | G    |
| 8   | AV    | 859 | A    |
| 8   | AV    | 867 | G    |
| 8   | AV    | 868 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AX    | 802 | C    |
| 8   | AX    | 803 | C    |
| 8   | AX    | 804 | G    |
| 8   | AX    | 805 | U    |
| 8   | AX    | 806 | G    |
| 8   | AX    | 807 | A    |
| 8   | AX    | 810 | A    |
| 8   | AX    | 812 | U    |
| 8   | AX    | 822 | G    |
| 8   | AX    | 824 | A    |
| 8   | AX    | 827 | G    |
| 8   | AX    | 830 | A    |
| 8   | AX    | 831 | A    |
| 8   | AX    | 832 | U    |
| 8   | AX    | 833 | U    |
| 8   | AX    | 834 | U    |
| 8   | AX    | 835 | U    |
| 8   | AX    | 836 | U    |
| 8   | AX    | 837 | G    |
| 8   | AX    | 838 | A    |
| 8   | AX    | 848 | U    |
| 8   | AX    | 849 | G    |
| 8   | AX    | 855 | C    |
| 8   | AX    | 858 | A    |
| 8   | AX    | 859 | A    |
| 8   | AX    | 861 | G    |
| 8   | AX    | 867 | G    |
| 8   | AX    | 868 | G    |
| 8   | AY    | 803 | C    |
| 8   | AY    | 804 | G    |
| 8   | AY    | 806 | G    |
| 8   | AY    | 807 | A    |
| 8   | AY    | 808 | C    |
| 8   | AY    | 813 | G    |
| 8   | AY    | 816 | A    |
| 8   | AY    | 821 | G    |
| 8   | AY    | 824 | A    |
| 8   | AY    | 826 | U    |
| 8   | AY    | 827 | G    |
| 8   | AY    | 828 | G    |
| 8   | AY    | 829 | C    |
| 8   | AY    | 830 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AY    | 831 | A    |
| 8   | AY    | 832 | U    |
| 8   | AY    | 833 | U    |
| 8   | AY    | 834 | U    |
| 8   | AY    | 835 | U    |
| 8   | AY    | 836 | U    |
| 8   | AY    | 837 | G    |
| 8   | AY    | 838 | A    |
| 8   | AY    | 839 | C    |
| 8   | AY    | 845 | C    |
| 8   | AY    | 847 | A    |
| 8   | AY    | 848 | U    |
| 8   | AY    | 849 | G    |
| 8   | AY    | 850 | G    |
| 8   | AY    | 854 | A    |
| 8   | AY    | 855 | C    |
| 8   | AY    | 857 | U    |
| 8   | AY    | 859 | A    |
| 8   | AY    | 861 | G    |
| 8   | AY    | 867 | G    |
| 8   | AY    | 868 | G    |
| 8   | BV    | 803 | C    |
| 8   | BV    | 804 | G    |
| 8   | BV    | 805 | U    |
| 8   | BV    | 806 | G    |
| 8   | BV    | 807 | A    |
| 8   | BV    | 813 | G    |
| 8   | BV    | 816 | A    |
| 8   | BV    | 817 | A    |
| 8   | BV    | 822 | G    |
| 8   | BV    | 823 | C    |
| 8   | BV    | 824 | A    |
| 8   | BV    | 830 | A    |
| 8   | BV    | 831 | A    |
| 8   | BV    | 832 | U    |
| 8   | BV    | 833 | U    |
| 8   | BV    | 834 | U    |
| 8   | BV    | 835 | U    |
| 8   | BV    | 836 | U    |
| 8   | BV    | 837 | G    |
| 8   | BV    | 838 | A    |
| 8   | BV    | 839 | C    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | BV    | 843 | C    |
| 8   | BV    | 847 | A    |
| 8   | BV    | 848 | U    |
| 8   | BV    | 849 | G    |
| 8   | BV    | 853 | A    |
| 8   | BV    | 855 | C    |
| 8   | BV    | 857 | U    |
| 8   | BV    | 858 | A    |
| 8   | BV    | 859 | A    |
| 8   | BV    | 860 | G    |
| 8   | BV    | 867 | G    |
| 8   | BV    | 868 | G    |
| 8   | BX    | 804 | G    |
| 8   | BX    | 806 | G    |
| 8   | BX    | 807 | A    |
| 8   | BX    | 808 | C    |
| 8   | BX    | 809 | G    |
| 8   | BX    | 810 | A    |
| 8   | BX    | 815 | A    |
| 8   | BX    | 816 | A    |
| 8   | BX    | 819 | U    |
| 8   | BX    | 822 | G    |
| 8   | BX    | 823 | C    |
| 8   | BX    | 824 | A    |
| 8   | BX    | 826 | U    |
| 8   | BX    | 827 | G    |
| 8   | BX    | 828 | G    |
| 8   | BX    | 829 | C    |
| 8   | BX    | 831 | A    |
| 8   | BX    | 832 | U    |
| 8   | BX    | 833 | U    |
| 8   | BX    | 834 | U    |
| 8   | BX    | 835 | U    |
| 8   | BX    | 836 | U    |
| 8   | BX    | 837 | G    |
| 8   | BX    | 838 | A    |
| 8   | BX    | 843 | C    |
| 8   | BX    | 845 | C    |
| 8   | BX    | 848 | U    |
| 8   | BX    | 849 | G    |
| 8   | BX    | 855 | C    |
| 8   | BX    | 859 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | BX    | 860 | G    |
| 8   | BX    | 865 | C    |
| 8   | BX    | 866 | U    |
| 8   | BX    | 867 | G    |
| 8   | BX    | 868 | G    |
| 8   | BY    | 803 | C    |
| 8   | BY    | 804 | G    |
| 8   | BY    | 805 | U    |
| 8   | BY    | 806 | G    |
| 8   | BY    | 807 | A    |
| 8   | BY    | 808 | C    |
| 8   | BY    | 810 | A    |
| 8   | BY    | 814 | A    |
| 8   | BY    | 815 | A    |
| 8   | BY    | 820 | C    |
| 8   | BY    | 822 | G    |
| 8   | BY    | 824 | A    |
| 8   | BY    | 826 | U    |
| 8   | BY    | 827 | G    |
| 8   | BY    | 828 | G    |
| 8   | BY    | 830 | A    |
| 8   | BY    | 831 | A    |
| 8   | BY    | 832 | U    |
| 8   | BY    | 833 | U    |
| 8   | BY    | 834 | U    |
| 8   | BY    | 835 | U    |
| 8   | BY    | 836 | U    |
| 8   | BY    | 837 | G    |
| 8   | BY    | 838 | A    |
| 8   | BY    | 839 | C    |
| 8   | BY    | 841 | G    |
| 8   | BY    | 843 | C    |
| 8   | BY    | 844 | U    |
| 8   | BY    | 848 | U    |
| 8   | BY    | 849 | G    |
| 8   | BY    | 852 | U    |
| 8   | BY    | 853 | A    |
| 8   | BY    | 854 | A    |
| 8   | BY    | 855 | C    |
| 8   | BY    | 859 | A    |
| 8   | BY    | 861 | G    |
| 8   | BY    | 863 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | BY    | 867 | G    |
| 8   | BY    | 868 | G    |
| 8   | CV    | 804 | G    |
| 8   | CV    | 805 | U    |
| 8   | CV    | 806 | G    |
| 8   | CV    | 807 | A    |
| 8   | CV    | 814 | A    |
| 8   | CV    | 815 | A    |
| 8   | CV    | 816 | A    |
| 8   | CV    | 817 | A    |
| 8   | CV    | 821 | G    |
| 8   | CV    | 822 | G    |
| 8   | CV    | 823 | C    |
| 8   | CV    | 824 | A    |
| 8   | CV    | 831 | A    |
| 8   | CV    | 832 | U    |
| 8   | CV    | 833 | U    |
| 8   | CV    | 835 | U    |
| 8   | CV    | 836 | U    |
| 8   | CV    | 837 | G    |
| 8   | CV    | 838 | A    |
| 8   | CV    | 843 | C    |
| 8   | CV    | 845 | C    |
| 8   | CV    | 847 | A    |
| 8   | CV    | 848 | U    |
| 8   | CV    | 849 | G    |
| 8   | CV    | 855 | C    |
| 8   | CV    | 857 | U    |
| 8   | CV    | 859 | A    |
| 8   | CV    | 867 | G    |
| 8   | CV    | 868 | G    |
| 8   | CX    | 802 | C    |
| 8   | CX    | 804 | G    |
| 8   | CX    | 805 | U    |
| 8   | CX    | 806 | G    |
| 8   | CX    | 807 | A    |
| 8   | CX    | 813 | G    |
| 8   | CX    | 816 | A    |
| 8   | CX    | 817 | A    |
| 8   | CX    | 821 | G    |
| 8   | CX    | 822 | G    |
| 8   | CX    | 824 | A    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CX    | 826 | U    |
| 8   | CX    | 827 | G    |
| 8   | CX    | 829 | C    |
| 8   | CX    | 830 | A    |
| 8   | CX    | 831 | A    |
| 8   | CX    | 832 | U    |
| 8   | CX    | 833 | U    |
| 8   | CX    | 834 | U    |
| 8   | CX    | 835 | U    |
| 8   | CX    | 836 | U    |
| 8   | CX    | 837 | G    |
| 8   | CX    | 838 | A    |
| 8   | CX    | 842 | U    |
| 8   | CX    | 843 | C    |
| 8   | CX    | 845 | C    |
| 8   | CX    | 846 | U    |
| 8   | CX    | 848 | U    |
| 8   | CX    | 849 | G    |
| 8   | CX    | 855 | C    |
| 8   | CX    | 859 | A    |
| 8   | CX    | 862 | A    |
| 8   | CX    | 866 | U    |
| 8   | CX    | 867 | G    |
| 8   | CY    | 803 | C    |
| 8   | CY    | 804 | G    |
| 8   | CY    | 805 | U    |
| 8   | CY    | 806 | G    |
| 8   | CY    | 807 | A    |
| 8   | CY    | 808 | C    |
| 8   | CY    | 809 | G    |
| 8   | CY    | 813 | G    |
| 8   | CY    | 815 | A    |
| 8   | CY    | 822 | G    |
| 8   | CY    | 823 | C    |
| 8   | CY    | 826 | U    |
| 8   | CY    | 827 | G    |
| 8   | CY    | 829 | C    |
| 8   | CY    | 830 | A    |
| 8   | CY    | 831 | A    |
| 8   | CY    | 832 | U    |
| 8   | CY    | 833 | U    |
| 8   | CY    | 834 | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | CY    | 835 | U    |
| 8   | CY    | 836 | U    |
| 8   | CY    | 838 | A    |
| 8   | CY    | 839 | C    |
| 8   | CY    | 842 | U    |
| 8   | CY    | 847 | A    |
| 8   | CY    | 848 | U    |
| 8   | CY    | 849 | G    |
| 8   | CY    | 854 | A    |
| 8   | CY    | 855 | C    |
| 8   | CY    | 857 | U    |
| 8   | CY    | 858 | A    |
| 8   | CY    | 859 | A    |
| 8   | CY    | 867 | G    |
| 8   | CY    | 868 | G    |
| 8   | DV    | 804 | G    |
| 8   | DV    | 806 | G    |
| 8   | DV    | 807 | A    |
| 8   | DV    | 808 | C    |
| 8   | DV    | 822 | G    |
| 8   | DV    | 826 | U    |
| 8   | DV    | 830 | A    |
| 8   | DV    | 831 | A    |
| 8   | DV    | 832 | U    |
| 8   | DV    | 833 | U    |
| 8   | DV    | 834 | U    |
| 8   | DV    | 835 | U    |
| 8   | DV    | 836 | U    |
| 8   | DV    | 837 | G    |
| 8   | DV    | 838 | A    |
| 8   | DV    | 839 | C    |
| 8   | DV    | 847 | A    |
| 8   | DV    | 848 | U    |
| 8   | DV    | 855 | C    |
| 8   | DV    | 858 | A    |
| 8   | DV    | 859 | A    |
| 8   | DV    | 860 | G    |
| 8   | DV    | 861 | G    |
| 8   | DV    | 867 | G    |
| 8   | DV    | 868 | G    |
| 8   | DX    | 804 | G    |
| 8   | DX    | 806 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | DX    | 807 | A    |
| 8   | DX    | 808 | C    |
| 8   | DX    | 810 | A    |
| 8   | DX    | 815 | A    |
| 8   | DX    | 819 | U    |
| 8   | DX    | 822 | G    |
| 8   | DX    | 827 | G    |
| 8   | DX    | 828 | G    |
| 8   | DX    | 831 | A    |
| 8   | DX    | 832 | U    |
| 8   | DX    | 833 | U    |
| 8   | DX    | 834 | U    |
| 8   | DX    | 835 | U    |
| 8   | DX    | 836 | U    |
| 8   | DX    | 837 | G    |
| 8   | DX    | 838 | A    |
| 8   | DX    | 839 | C    |
| 8   | DX    | 840 | A    |
| 8   | DX    | 842 | U    |
| 8   | DX    | 843 | C    |
| 8   | DX    | 845 | C    |
| 8   | DX    | 848 | U    |
| 8   | DX    | 849 | G    |
| 8   | DX    | 850 | G    |
| 8   | DX    | 855 | C    |
| 8   | DX    | 859 | A    |
| 8   | DX    | 861 | G    |
| 8   | DX    | 866 | U    |
| 8   | DX    | 867 | G    |
| 8   | DY    | 803 | C    |
| 8   | DY    | 804 | G    |
| 8   | DY    | 806 | G    |
| 8   | DY    | 807 | A    |
| 8   | DY    | 808 | C    |
| 8   | DY    | 812 | U    |
| 8   | DY    | 814 | A    |
| 8   | DY    | 815 | A    |
| 8   | DY    | 818 | G    |
| 8   | DY    | 822 | G    |
| 8   | DY    | 824 | A    |
| 8   | DY    | 825 | U    |
| 8   | DY    | 826 | U    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | DY    | 827 | G    |
| 8   | DY    | 828 | G    |
| 8   | DY    | 830 | A    |
| 8   | DY    | 831 | A    |
| 8   | DY    | 832 | U    |
| 8   | DY    | 833 | U    |
| 8   | DY    | 834 | U    |
| 8   | DY    | 835 | U    |
| 8   | DY    | 836 | U    |
| 8   | DY    | 837 | G    |
| 8   | DY    | 838 | A    |
| 8   | DY    | 839 | C    |
| 8   | DY    | 846 | U    |
| 8   | DY    | 848 | U    |
| 8   | DY    | 849 | G    |
| 8   | DY    | 853 | A    |
| 8   | DY    | 859 | A    |
| 8   | DY    | 861 | G    |
| 8   | DY    | 867 | G    |
| 8   | DY    | 868 | G    |

All (67) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AV    | 801 | G    |
| 8   | AV    | 830 | A    |
| 8   | AV    | 836 | U    |
| 8   | AV    | 837 | G    |
| 8   | AV    | 847 | A    |
| 8   | AV    | 848 | U    |
| 8   | AV    | 858 | A    |
| 8   | AV    | 867 | G    |
| 8   | AX    | 803 | C    |
| 8   | AX    | 818 | G    |
| 8   | AX    | 830 | A    |
| 8   | AX    | 836 | U    |
| 8   | AX    | 858 | A    |
| 8   | AX    | 866 | U    |
| 8   | AY    | 805 | U    |
| 8   | AY    | 816 | A    |
| 8   | AY    | 836 | U    |
| 8   | AY    | 849 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | AY    | 858 | A    |
| 8   | BV    | 816 | A    |
| 8   | BV    | 829 | C    |
| 8   | BV    | 830 | A    |
| 8   | BV    | 836 | U    |
| 8   | BV    | 858 | A    |
| 8   | BV    | 867 | G    |
| 8   | BX    | 836 | U    |
| 8   | BX    | 837 | G    |
| 8   | BY    | 830 | A    |
| 8   | BY    | 836 | U    |
| 8   | BY    | 837 | G    |
| 8   | CV    | 811 | C    |
| 8   | CV    | 814 | A    |
| 8   | CV    | 830 | A    |
| 8   | CV    | 834 | U    |
| 8   | CV    | 836 | U    |
| 8   | CV    | 858 | A    |
| 8   | CX    | 806 | G    |
| 8   | CX    | 828 | G    |
| 8   | CX    | 834 | U    |
| 8   | CX    | 836 | U    |
| 8   | CX    | 858 | A    |
| 8   | CY    | 805 | U    |
| 8   | CY    | 806 | G    |
| 8   | CY    | 808 | C    |
| 8   | CY    | 817 | A    |
| 8   | CY    | 836 | U    |
| 8   | CY    | 838 | A    |
| 8   | CY    | 858 | A    |
| 8   | CY    | 866 | U    |
| 8   | DV    | 816 | A    |
| 8   | DV    | 829 | C    |
| 8   | DV    | 836 | U    |
| 8   | DV    | 838 | A    |
| 8   | DV    | 858 | A    |
| 8   | DX    | 809 | G    |
| 8   | DX    | 813 | G    |
| 8   | DX    | 826 | U    |
| 8   | DX    | 830 | A    |
| 8   | DX    | 836 | U    |
| 8   | DX    | 851 | G    |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | DX    | 867 | G    |
| 8   | DY    | 811 | C    |
| 8   | DY    | 817 | A    |
| 8   | DY    | 830 | A    |
| 8   | DY    | 836 | U    |
| 8   | DY    | 838 | A    |
| 8   | DY    | 867 | G    |

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

## 5.6 Ligand geometry ⓘ

There are no ligands in this entry.

## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

## 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   | AA    | 90/95 (94%)  | 0.37   | 5 (5%) 24 13 | 73, 93, 108, 121      | 0     |
| 1   | AH    | 91/95 (95%)  | 0.42   | 9 (9%) 8 6   | 68, 97, 111, 135      | 0     |
| 1   | AO    | 89/95 (93%)  | 0.31   | 3 (3%) 43 24 | 72, 99, 113, 139      | 0     |
| 1   | BA    | 91/95 (95%)  | 0.41   | 6 (6%) 18 10 | 73, 95, 109, 132      | 0     |
| 1   | BH    | 95/95 (100%) | 0.37   | 9 (9%) 8 6   | 72, 98, 109, 114      | 0     |
| 1   | BO    | 90/95 (94%)  | 0.34   | 2 (2%) 59 34 | 58, 95, 107, 128      | 0     |
| 1   | CA    | 90/95 (94%)  | 0.46   | 7 (7%) 13 8  | 80, 96, 111, 125      | 0     |
| 1   | CH    | 91/95 (95%)  | 0.32   | 3 (3%) 44 25 | 63, 95, 116, 121      | 0     |
| 1   | CO    | 91/95 (95%)  | 0.48   | 7 (7%) 13 8  | 75, 100, 116, 133     | 0     |
| 1   | DA    | 90/95 (94%)  | 0.53   | 9 (10%) 8 6  | 62, 95, 108, 120      | 0     |
| 1   | DH    | 95/95 (100%) | 0.29   | 6 (6%) 19 11 | 65, 97, 111, 116      | 0     |
| 1   | DO    | 91/95 (95%)  | 0.23   | 3 (3%) 44 25 | 69, 96, 110, 118      | 0     |
| 2   | AB    | 97/119 (81%) | 0.26   | 3 (3%) 47 26 | 67, 90, 116, 137      | 0     |
| 2   | AI    | 96/119 (80%) | 0.33   | 6 (6%) 19 11 | 63, 94, 108, 114      | 0     |
| 2   | AP    | 95/119 (79%) | 0.11   | 1 (1%) 77 50 | 69, 91, 106, 116      | 0     |
| 2   | BB    | 96/119 (80%) | 0.25   | 3 (3%) 47 26 | 71, 92, 106, 112      | 0     |
| 2   | BI    | 96/119 (80%) | 0.19   | 2 (2%) 60 35 | 61, 94, 107, 120      | 0     |
| 2   | BP    | 96/119 (80%) | 0.20   | 3 (3%) 47 26 | 67, 92, 105, 115      | 0     |
| 2   | CB    | 97/119 (81%) | 0.20   | 5 (5%) 26 14 | 64, 91, 109, 129      | 0     |
| 2   | CI    | 96/119 (80%) | 0.14   | 1 (1%) 79 53 | 67, 91, 107, 126      | 0     |
| 2   | CP    | 95/119 (79%) | 0.23   | 5 (5%) 25 14 | 70, 91, 110, 119      | 0     |
| 2   | DB    | 96/119 (80%) | 0.23   | 3 (3%) 47 26 | 68, 91, 103, 111      | 0     |
| 2   | DI    | 94/119 (78%) | 0.35   | 3 (3%) 45 25 | 64, 92, 102, 123      | 0     |
| 2   | DP    | 95/119 (79%) | 0.27   | 5 (5%) 25 14 | 75, 91, 104, 111      | 0     |

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| Mol | Chain | Analysed      | <RSRZ> | #RSRZ>2      | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|---------------|--------|--------------|-----------------------|-------|
| 3   | AC    | 105/118 (88%) | 0.30   | 2 (1%) 64 37 | 57, 94, 116, 126      | 0     |
| 3   | AJ    | 107/118 (90%) | 0.42   | 10 (9%) 9 7  | 71, 92, 114, 124      | 0     |
| 3   | AQ    | 90/118 (76%)  | 0.19   | 2 (2%) 59 34 | 64, 91, 104, 115      | 0     |
| 3   | BC    | 105/118 (88%) | 0.36   | 4 (3%) 38 22 | 62, 93, 106, 113      | 0     |
| 3   | BJ    | 106/118 (89%) | 0.24   | 5 (4%) 30 17 | 64, 92, 107, 117      | 0     |
| 3   | BQ    | 90/118 (76%)  | 0.36   | 6 (6%) 17 10 | 62, 91, 105, 117      | 0     |
| 3   | CC    | 105/118 (88%) | 0.10   | 3 (2%) 49 28 | 60, 94, 106, 121      | 0     |
| 3   | CJ    | 107/118 (90%) | 0.26   | 7 (6%) 18 11 | 67, 92, 110, 121      | 0     |
| 3   | CQ    | 92/118 (77%)  | 0.40   | 5 (5%) 25 13 | 68, 91, 106, 114      | 0     |
| 3   | DC    | 105/118 (88%) | 0.27   | 5 (4%) 29 16 | 73, 91, 107, 112      | 0     |
| 3   | DJ    | 106/118 (89%) | 0.34   | 9 (8%) 11 7  | 67, 92, 107, 124      | 0     |
| 3   | DQ    | 90/118 (76%)  | 0.29   | 5 (5%) 24 13 | 65, 87, 105, 119      | 0     |
| 4   | AD    | 89/126 (70%)  | 0.35   | 5 (5%) 24 13 | 76, 96, 111, 118      | 0     |
| 4   | AK    | 89/126 (70%)  | 0.37   | 7 (7%) 13 8  | 86, 101, 118, 126     | 0     |
| 4   | AR    | 89/126 (70%)  | 0.45   | 7 (7%) 13 8  | 80, 99, 110, 115      | 0     |
| 4   | BD    | 89/126 (70%)  | 0.48   | 8 (8%) 10 7  | 83, 96, 111, 125      | 0     |
| 4   | BK    | 89/126 (70%)  | 0.32   | 4 (4%) 32 18 | 81, 98, 112, 127      | 0     |
| 4   | BR    | 89/126 (70%)  | 0.49   | 7 (7%) 13 8  | 70, 96, 109, 120      | 0     |
| 4   | CD    | 89/126 (70%)  | 0.34   | 4 (4%) 32 18 | 74, 95, 112, 127      | 0     |
| 4   | CK    | 90/126 (71%)  | 0.17   | 3 (3%) 44 25 | 73, 97, 114, 123      | 0     |
| 4   | CR    | 89/126 (70%)  | 0.35   | 3 (3%) 43 24 | 66, 97, 106, 112      | 0     |
| 4   | DD    | 89/126 (70%)  | 0.27   | 4 (4%) 32 18 | 70, 94, 107, 124      | 0     |
| 4   | DK    | 89/126 (70%)  | 0.29   | 5 (5%) 24 13 | 76, 96, 106, 115      | 0     |
| 4   | DR    | 89/126 (70%)  | 0.45   | 5 (5%) 24 13 | 72, 96, 106, 120      | 0     |
| 5   | AE    | 86/92 (93%)   | 0.36   | 4 (4%) 30 17 | 68, 95, 111, 124      | 0     |
| 5   | AL    | 76/92 (82%)   | 0.47   | 3 (3%) 37 21 | 81, 99, 114, 134      | 0     |
| 5   | AS    | 78/92 (84%)   | 0.47   | 5 (6%) 19 11 | 82, 98, 117, 121      | 0     |
| 5   | BE    | 75/92 (81%)   | 0.40   | 4 (5%) 25 14 | 76, 96, 115, 121      | 0     |
| 5   | BL    | 75/92 (81%)   | 0.42   | 2 (2%) 52 29 | 75, 97, 114, 117      | 0     |
| 5   | BS    | 82/92 (89%)   | 0.45   | 6 (7%) 15 9  | 68, 94, 103, 113      | 0     |
| 5   | CE    | 84/92 (91%)   | 0.33   | 3 (3%) 41 23 | 71, 95, 107, 118      | 0     |

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| Mol | Chain | Analysed     | <RSRZ> | #RSRZ>2 |         | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|--------------|--------|---------|---------|-----------------------|-------|
| 5   | CL    | 75/92 (81%)  | 0.45   | 4 (5%)  | 25 14   | 68, 95, 109, 125      | 0     |
| 5   | CS    | 78/92 (84%)  | 0.62   | 7 (8%)  | 10 7    | 78, 97, 110, 118      | 0     |
| 5   | DE    | 76/92 (82%)  | 0.44   | 4 (5%)  | 25 14   | 70, 95, 114, 120      | 0     |
| 5   | DL    | 75/92 (81%)  | 0.64   | 5 (6%)  | 17 10   | 72, 93, 106, 113      | 0     |
| 5   | DS    | 78/92 (84%)  | 0.37   | 5 (6%)  | 19 11   | 72, 96, 112, 124      | 0     |
| 6   | AF    | 83/86 (96%)  | 0.42   | 2 (2%)  | 56 32   | 71, 92, 103, 115      | 0     |
| 6   | AM    | 83/86 (96%)  | 0.21   | 3 (3%)  | 41 23   | 60, 90, 109, 130      | 0     |
| 6   | AT    | 83/86 (96%)  | 0.29   | 2 (2%)  | 56 32   | 65, 90, 107, 125      | 0     |
| 6   | BF    | 83/86 (96%)  | 0.23   | 2 (2%)  | 56 32   | 74, 93, 104, 121      | 0     |
| 6   | BM    | 83/86 (96%)  | 0.26   | 4 (4%)  | 29 16   | 74, 93, 106, 117      | 0     |
| 6   | BT    | 83/86 (96%)  | 0.23   | 2 (2%)  | 56 32   | 58, 88, 102, 110      | 0     |
| 6   | CF    | 82/86 (95%)  | 0.15   | 1 (1%)  | 75 49   | 68, 91, 100, 105      | 0     |
| 6   | CM    | 83/86 (96%)  | 0.28   | 4 (4%)  | 29 16   | 71, 91, 115, 124      | 0     |
| 6   | CT    | 83/86 (96%)  | 0.14   | 0       | 100 100 | 58, 89, 104, 113      | 0     |
| 6   | DF    | 83/86 (96%)  | 0.22   | 3 (3%)  | 41 23   | 67, 90, 103, 110      | 0     |
| 6   | DM    | 83/86 (96%)  | 0.21   | 4 (4%)  | 29 16   | 60, 91, 108, 123      | 0     |
| 6   | DT    | 83/86 (96%)  | 0.40   | 4 (4%)  | 29 16   | 66, 88, 112, 120      | 0     |
| 7   | AG    | 73/76 (96%)  | 0.39   | 4 (5%)  | 24 13   | 73, 97, 112, 133      | 0     |
| 7   | AN    | 71/76 (93%)  | 0.20   | 2 (2%)  | 50 29   | 78, 95, 108, 119      | 0     |
| 7   | AU    | 73/76 (96%)  | 0.42   | 5 (6%)  | 17 10   | 86, 99, 121, 129      | 0     |
| 7   | BG    | 73/76 (96%)  | 0.63   | 7 (9%)  | 8 6     | 80, 98, 113, 127      | 0     |
| 7   | BN    | 74/76 (97%)  | 0.31   | 6 (8%)  | 12 8    | 65, 97, 106, 111      | 0     |
| 7   | BU    | 70/76 (92%)  | 0.47   | 8 (11%) | 6 5     | 68, 97, 111, 118      | 0     |
| 7   | CG    | 73/76 (96%)  | 0.60   | 7 (9%)  | 8 6     | 74, 97, 105, 110      | 0     |
| 7   | CN    | 70/76 (92%)  | 0.22   | 1 (1%)  | 72 45   | 81, 96, 103, 110      | 0     |
| 7   | CU    | 73/76 (96%)  | 0.34   | 3 (4%)  | 35 20   | 81, 97, 114, 119      | 0     |
| 7   | DG    | 73/76 (96%)  | 0.18   | 2 (2%)  | 52 29   | 73, 98, 112, 120      | 0     |
| 7   | DN    | 73/76 (96%)  | 0.46   | 3 (4%)  | 35 20   | 75, 96, 105, 107      | 0     |
| 7   | DU    | 70/76 (92%)  | 0.54   | 8 (11%) | 6 5     | 76, 98, 108, 117      | 0     |
| 8   | AV    | 68/68 (100%) | -0.18  | 0       | 100 100 | 56, 83, 108, 117      | 0     |
| 8   | AX    | 68/68 (100%) | -0.20  | 1 (1%)  | 70 43   | 54, 83, 107, 120      | 0     |

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| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2  |     |     | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|----------|-----|-----|-----------------------|-------|
| 8   | AY    | 68/68 (100%)    | -0.18  | 0        | 100 | 100 | 54, 85, 106, 113      | 0     |
| 8   | BV    | 68/68 (100%)    | -0.14  | 0        | 100 | 100 | 55, 80, 107, 111      | 0     |
| 8   | BX    | 68/68 (100%)    | -0.15  | 0        | 100 | 100 | 58, 82, 100, 117      | 0     |
| 8   | BY    | 68/68 (100%)    | -0.22  | 0        | 100 | 100 | 48, 79, 104, 115      | 0     |
| 8   | CV    | 68/68 (100%)    | -0.08  | 1 (1%)   | 70  | 43  | 55, 83, 102, 111      | 0     |
| 8   | CX    | 68/68 (100%)    | -0.15  | 0        | 100 | 100 | 61, 85, 94, 99        | 0     |
| 8   | CY    | 68/68 (100%)    | -0.10  | 0        | 100 | 100 | 61, 82, 97, 121       | 0     |
| 8   | DV    | 68/68 (100%)    | -0.17  | 0        | 100 | 100 | 57, 79, 97, 106       | 0     |
| 8   | DX    | 68/68 (100%)    | -0.10  | 0        | 100 | 100 | 50, 79, 94, 110       | 0     |
| 8   | DY    | 68/68 (100%)    | -0.19  | 0        | 100 | 100 | 53, 82, 101, 110      | 0     |
| All | All   | 8135/9360 (86%) | 0.28   | 375 (4%) | 31  | 17  | 48, 94, 110, 139      | 0     |

All (375) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 3   | CQ    | 415 | ILE  | 8.8  |
| 7   | DN    | 747 | GLU  | 7.0  |
| 5   | CL    | 637 | GLU  | 6.6  |
| 1   | DA    | 133 | ALA  | 6.5  |
| 6   | DT    | 583 | GLU  | 6.2  |
| 1   | BH    | 177 | LEU  | 6.0  |
| 4   | DR    | 51  | ARG  | 5.8  |
| 4   | CR    | 20  | CYS  | 5.6  |
| 3   | DC    | 384 | LYS  | 5.3  |
| 2   | AI    | 225 | VAL  | 5.1  |
| 1   | DA    | 167 | LEU  | 5.1  |
| 3   | BC    | 357 | LYS  | 5.1  |
| 7   | AU    | 716 | LYS  | 5.1  |
| 2   | DP    | 244 | LYS  | 5.1  |
| 7   | DU    | 716 | LYS  | 4.9  |
| 1   | AH    | 177 | LEU  | 4.8  |
| 7   | BU    | 773 | LEU  | 4.8  |
| 6   | BM    | 585 | ARG  | 4.8  |
| 5   | AS    | 637 | GLU  | 4.5  |
| 5   | AS    | 644 | GLU  | 4.4  |
| 4   | DR    | 61  | VAL  | 4.4  |
| 1   | DA    | 147 | GLU  | 4.4  |
| 4   | BR    | 75  | ASP  | 4.3  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 4   | AD    | 79  | ASN  | 4.3  |
| 4   | AD    | 39  | MET  | 4.3  |
| 5   | DS    | 684 | ILE  | 4.3  |
| 3   | BQ    | 415 | ILE  | 4.3  |
| 1   | AO    | 142 | LEU  | 4.2  |
| 7   | AN    | 728 | GLN  | 4.2  |
| 3   | DJ    | 381 | GLY  | 4.2  |
| 7   | BU    | 717 | LEU  | 4.1  |
| 7   | BN    | 772 | ALA  | 4.0  |
| 1   | BA    | 167 | LEU  | 4.0  |
| 6   | AF    | 530 | LYS  | 4.0  |
| 7   | BU    | 772 | ALA  | 4.0  |
| 3   | DJ    | 411 | ARG  | 4.0  |
| 4   | CD    | 39  | MET  | 4.0  |
| 7   | BG    | 725 | ARG  | 3.9  |
| 1   | BA    | 123 | ASP  | 3.9  |
| 2   | DI    | 248 | LYS  | 3.9  |
| 7   | DU    | 740 | LEU  | 3.9  |
| 3   | CC    | 382 | LYS  | 3.8  |
| 4   | DK    | 16  | HIS  | 3.8  |
| 5   | CS    | 671 | ARG  | 3.8  |
| 4   | BD    | 33  | ILE  | 3.8  |
| 4   | DK    | 4   | GLY  | 3.8  |
| 6   | BF    | 504 | PRO  | 3.8  |
| 1   | AA    | 167 | LEU  | 3.7  |
| 1   | BA    | 147 | GLU  | 3.7  |
| 5   | DL    | 634 | TRP  | 3.7  |
| 6   | DT    | 580 | GLU  | 3.7  |
| 7   | DU    | 715 | LYS  | 3.7  |
| 1   | CA    | 167 | LEU  | 3.7  |
| 6   | DF    | 529 | TYR  | 3.7  |
| 4   | DD    | 39  | MET  | 3.7  |
| 2   | DI    | 225 | VAL  | 3.7  |
| 4   | DK    | 55  | VAL  | 3.7  |
| 5   | AE    | 671 | ARG  | 3.6  |
| 7   | DN    | 725 | ARG  | 3.6  |
| 3   | DQ    | 385 | LYS  | 3.6  |
| 6   | DT    | 540 | MET  | 3.6  |
| 7   | DG    | 719 | LEU  | 3.6  |
| 5   | DL    | 685 | THR  | 3.6  |
| 5   | BS    | 683 | ASN  | 3.6  |
| 3   | AJ    | 411 | ARG  | 3.6  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 5   | CE    | 637 | GLU  | 3.6  |
| 2   | AI    | 284 | GLU  | 3.5  |
| 4   | BD    | 54  | ARG  | 3.5  |
| 7   | DU    | 773 | LEU  | 3.5  |
| 5   | CL    | 641 | MET  | 3.5  |
| 1   | CA    | 138 | MET  | 3.5  |
| 7   | BG    | 755 | ASN  | 3.5  |
| 3   | CC    | 384 | LYS  | 3.5  |
| 5   | AS    | 685 | THR  | 3.4  |
| 3   | DJ    | 357 | LYS  | 3.4  |
| 1   | DO    | 114 | ASP  | 3.4  |
| 4   | CD    | 63  | ILE  | 3.4  |
| 2   | AB    | 297 | GLY  | 3.4  |
| 3   | CQ    | 414 | LEU  | 3.4  |
| 1   | BA    | 133 | ALA  | 3.4  |
| 7   | CG    | 738 | MET  | 3.4  |
| 4   | BR    | 29  | ARG  | 3.3  |
| 3   | AJ    | 382 | LYS  | 3.3  |
| 3   | BQ    | 369 | ASN  | 3.3  |
| 2   | CB    | 230 | THR  | 3.3  |
| 2   | AI    | 267 | TYR  | 3.3  |
| 6   | CF    | 529 | TYR  | 3.3  |
| 4   | AK    | 74  | PRO  | 3.3  |
| 1   | AH    | 169 | LEU  | 3.3  |
| 4   | AK    | 78  | LYS  | 3.3  |
| 4   | DR    | 80  | ALA  | 3.3  |
| 3   | AC    | 318 | LYS  | 3.3  |
| 6   | CM    | 518 | PRO  | 3.2  |
| 7   | DU    | 717 | LEU  | 3.2  |
| 3   | BQ    | 385 | LYS  | 3.2  |
| 3   | AJ    | 353 | LEU  | 3.2  |
| 3   | DQ    | 384 | LYS  | 3.2  |
| 6   | DM    | 558 | HIS  | 3.2  |
| 2   | DB    | 245 | MET  | 3.2  |
| 6   | AF    | 529 | TYR  | 3.2  |
| 1   | AH    | 172 | LEU  | 3.1  |
| 6   | BM    | 586 | GLU  | 3.1  |
| 7   | BG    | 771 | GLU  | 3.1  |
| 4   | AR    | 71  | LEU  | 3.1  |
| 2   | CB    | 250 | ARG  | 3.1  |
| 5   | BL    | 676 | ARG  | 3.1  |
| 4   | CD    | 78  | LYS  | 3.1  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 5   | BS    | 636 | TYR  | 3.1  |
| 3   | CQ    | 324 | PHE  | 3.1  |
| 6   | CM    | 504 | PRO  | 3.1  |
| 3   | AJ    | 352 | LEU  | 3.1  |
| 1   | DA    | 138 | MET  | 3.1  |
| 3   | BJ    | 418 | LYS  | 3.1  |
| 3   | CC    | 383 | GLY  | 3.1  |
| 5   | CE    | 684 | ILE  | 3.1  |
| 6   | BT    | 542 | MET  | 3.1  |
| 3   | BC    | 385 | LYS  | 3.1  |
| 7   | CG    | 770 | LEU  | 3.1  |
| 1   | CH    | 172 | LEU  | 3.0  |
| 7   | AN    | 719 | LEU  | 3.0  |
| 1   | AA    | 182 | VAL  | 3.0  |
| 1   | CA    | 119 | CYS  | 3.0  |
| 6   | BT    | 559 | LEU  | 3.0  |
| 6   | CM    | 517 | LYS  | 3.0  |
| 4   | BK    | 20  | CYS  | 3.0  |
| 7   | BG    | 747 | GLU  | 3.0  |
| 3   | BJ    | 357 | LYS  | 3.0  |
| 2   | CP    | 288 | LYS  | 3.0  |
| 1   | DO    | 115 | TYR  | 3.0  |
| 5   | AE    | 637 | GLU  | 3.0  |
| 5   | CS    | 637 | GLU  | 3.0  |
| 5   | DL    | 684 | ILE  | 3.0  |
| 7   | BU    | 762 | ILE  | 3.0  |
| 4   | BD    | 62  | TYR  | 3.0  |
| 5   | AL    | 683 | ASN  | 3.0  |
| 3   | AJ    | 371 | LYS  | 3.0  |
| 2   | AI    | 268 | PHE  | 3.0  |
| 5   | BE    | 644 | GLU  | 3.0  |
| 3   | DJ    | 385 | LYS  | 2.9  |
| 5   | DE    | 643 | ILE  | 2.9  |
| 1   | DA    | 140 | LEU  | 2.9  |
| 4   | BD    | 39  | MET  | 2.9  |
| 2   | CP    | 229 | ILE  | 2.9  |
| 5   | DL    | 688 | GLN  | 2.8  |
| 3   | DQ    | 382 | LYS  | 2.8  |
| 5   | DS    | 637 | GLU  | 2.8  |
| 1   | BH    | 120 | ILE  | 2.8  |
| 1   | CA    | 127 | PHE  | 2.8  |
| 1   | DH    | 177 | LEU  | 2.8  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 4   | CK    | 77  | LEU  | 2.8  |
| 1   | DH    | 172 | LEU  | 2.8  |
| 3   | CJ    | 401 | LEU  | 2.8  |
| 3   | CJ    | 337 | LYS  | 2.8  |
| 1   | CO    | 127 | PHE  | 2.8  |
| 7   | DU    | 762 | ILE  | 2.8  |
| 1   | BA    | 149 | ARG  | 2.8  |
| 4   | BK    | 78  | LYS  | 2.8  |
| 1   | AO    | 186 | PRO  | 2.7  |
| 2   | BB    | 225 | VAL  | 2.7  |
| 4   | DD    | 8   | LYS  | 2.7  |
| 7   | CG    | 728 | GLN  | 2.7  |
| 5   | DE    | 671 | ARG  | 2.7  |
| 1   | BA    | 143 | CYS  | 2.7  |
| 1   | CO    | 150 | LYS  | 2.7  |
| 6   | DT    | 579 | GLU  | 2.7  |
| 2   | BI    | 225 | VAL  | 2.7  |
| 7   | AG    | 738 | MET  | 2.7  |
| 4   | DR    | 60  | GLN  | 2.7  |
| 3   | DC    | 386 | LYS  | 2.7  |
| 7   | CG    | 740 | LEU  | 2.7  |
| 2   | AI    | 217 | ILE  | 2.7  |
| 2   | CP    | 292 | ARG  | 2.7  |
| 7   | BN    | 725 | ARG  | 2.7  |
| 3   | BQ    | 381 | GLY  | 2.6  |
| 1   | BH    | 176 | ASN  | 2.6  |
| 5   | AS    | 656 | LEU  | 2.6  |
| 3   | AJ    | 383 | GLY  | 2.6  |
| 1   | DH    | 195 | VAL  | 2.6  |
| 6   | BM    | 514 | LEU  | 2.6  |
| 2   | CP    | 296 | ALA  | 2.6  |
| 1   | DA    | 124 | GLY  | 2.6  |
| 7   | CU    | 772 | ALA  | 2.6  |
| 5   | AL    | 682 | ASP  | 2.6  |
| 1   | DA    | 182 | VAL  | 2.6  |
| 5   | BE    | 683 | ASN  | 2.6  |
| 7   | BG    | 720 | LYS  | 2.6  |
| 1   | AH    | 194 | ARG  | 2.6  |
| 2   | BP    | 205 | ARG  | 2.6  |
| 2   | CB    | 268 | PHE  | 2.6  |
| 4   | AK    | 80  | ALA  | 2.6  |
| 1   | DA    | 125 | ARG  | 2.6  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 3   | AQ    | 384 | LYS  | 2.6  |
| 4   | AK    | 21  | GLU  | 2.6  |
| 2   | CP    | 205 | ARG  | 2.5  |
| 4   | AD    | 16  | HIS  | 2.6  |
| 6   | DM    | 585 | ARG  | 2.5  |
| 4   | BR    | 84  | LYS  | 2.5  |
| 5   | AS    | 679 | LEU  | 2.5  |
| 6   | AM    | 542 | MET  | 2.5  |
| 2   | DP    | 288 | LYS  | 2.5  |
| 1   | DH    | 165 | ARG  | 2.5  |
| 7   | DU    | 741 | VAL  | 2.5  |
| 5   | BE    | 687 | LEU  | 2.5  |
| 3   | CQ    | 352 | LEU  | 2.5  |
| 1   | CA    | 183 | GLU  | 2.5  |
| 3   | CJ    | 371 | LYS  | 2.5  |
| 3   | CJ    | 382 | LYS  | 2.5  |
| 1   | CO    | 119 | CYS  | 2.5  |
| 4   | CK    | 74  | PRO  | 2.5  |
| 4   | CR    | 63  | ILE  | 2.5  |
| 3   | CJ    | 385 | LYS  | 2.5  |
| 7   | CU    | 716 | LYS  | 2.5  |
| 2   | DP    | 260 | ILE  | 2.5  |
| 5   | CL    | 634 | TRP  | 2.5  |
| 4   | BR    | 19  | THR  | 2.5  |
| 6   | DF    | 504 | PRO  | 2.5  |
| 7   | CN    | 728 | GLN  | 2.5  |
| 7   | CG    | 730 | ILE  | 2.5  |
| 4   | BD    | 42  | GLN  | 2.4  |
| 7   | CG    | 754 | GLN  | 2.4  |
| 1   | CO    | 128 | ILE  | 2.4  |
| 5   | DS    | 622 | PHE  | 2.4  |
| 1   | CA    | 171 | LEU  | 2.4  |
| 7   | AG    | 728 | GLN  | 2.4  |
| 7   | AU    | 717 | LEU  | 2.4  |
| 3   | AQ    | 381 | GLY  | 2.4  |
| 3   | BJ    | 411 | ARG  | 2.4  |
| 7   | AU    | 762 | ILE  | 2.4  |
| 5   | BS    | 622 | PHE  | 2.4  |
| 4   | AR    | 77  | LEU  | 2.4  |
| 5   | BL    | 637 | GLU  | 2.4  |
| 7   | AU    | 772 | ALA  | 2.4  |
| 4   | AK    | 4   | GLY  | 2.4  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 4   | AD    | 21  | GLU  | 2.4  |
| 3   | BQ    | 382 | LYS  | 2.4  |
| 6   | AT    | 515 | THR  | 2.4  |
| 4   | BR    | 42  | GLN  | 2.4  |
| 8   | CV    | 827 | G    | 2.4  |
| 6   | CM    | 542 | MET  | 2.4  |
| 1   | AH    | 142 | LEU  | 2.4  |
| 2   | DB    | 217 | ILE  | 2.4  |
| 2   | BB    | 280 | LEU  | 2.4  |
| 7   | BG    | 732 | ARG  | 2.4  |
| 3   | AJ    | 385 | LYS  | 2.4  |
| 2   | AB    | 281 | VAL  | 2.4  |
| 5   | BS    | 623 | ARG  | 2.4  |
| 2   | AP    | 211 | SER  | 2.4  |
| 7   | BU    | 714 | ASP  | 2.4  |
| 7   | BN    | 761 | VAL  | 2.4  |
| 1   | DO    | 142 | LEU  | 2.3  |
| 7   | DG    | 767 | ILE  | 2.3  |
| 3   | CJ    | 384 | LYS  | 2.3  |
| 5   | DE    | 684 | ILE  | 2.3  |
| 3   | DJ    | 322 | GLU  | 2.3  |
| 4   | AR    | 17  | ILE  | 2.3  |
| 5   | CE    | 670 | SER  | 2.3  |
| 5   | CL    | 690 | VAL  | 2.3  |
| 2   | DP    | 296 | ALA  | 2.3  |
| 6   | DM    | 559 | LEU  | 2.3  |
| 7   | BG    | 738 | MET  | 2.3  |
| 2   | BP    | 296 | ALA  | 2.3  |
| 4   | AK    | 77  | LEU  | 2.3  |
| 7   | AG    | 770 | LEU  | 2.3  |
| 3   | CJ    | 378 | PRO  | 2.3  |
| 1   | BH    | 127 | PHE  | 2.3  |
| 6   | BF    | 519 | VAL  | 2.3  |
| 1   | AA    | 138 | MET  | 2.3  |
| 7   | BN    | 762 | ILE  | 2.3  |
| 7   | BU    | 716 | LYS  | 2.3  |
| 2   | DB    | 225 | VAL  | 2.3  |
| 3   | BJ    | 371 | LYS  | 2.3  |
| 1   | DA    | 139 | ASN  | 2.3  |
| 3   | DQ    | 369 | ASN  | 2.3  |
| 1   | CA    | 182 | VAL  | 2.3  |
| 5   | BS    | 644 | GLU  | 2.3  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 7   | DN    | 755 | ASN  | 2.3  |
| 3   | DJ    | 320 | GLU  | 2.3  |
| 1   | AA    | 118 | ARG  | 2.3  |
| 4   | DR    | 4   | GLY  | 2.3  |
| 3   | AJ    | 415 | ILE  | 2.3  |
| 7   | AU    | 773 | LEU  | 2.3  |
| 1   | CO    | 151 | ILE  | 2.3  |
| 2   | CB    | 267 | TYR  | 2.2  |
| 4   | DD    | 60  | GLN  | 2.2  |
| 4   | AR    | 28  | TYR  | 2.2  |
| 5   | DE    | 676 | ARG  | 2.2  |
| 4   | BK    | 71  | LEU  | 2.2  |
| 2   | CB    | 231 | GLY  | 2.2  |
| 7   | BN    | 755 | ASN  | 2.2  |
| 3   | DQ    | 331 | VAL  | 2.2  |
| 4   | DK    | 71  | LEU  | 2.2  |
| 6   | AT    | 544 | LEU  | 2.2  |
| 1   | CH    | 145 | CYS  | 2.2  |
| 1   | BO    | 170 | VAL  | 2.2  |
| 4   | CD    | 16  | HIS  | 2.2  |
| 1   | AH    | 121 | LEU  | 2.2  |
| 2   | AI    | 202 | LYS  | 2.2  |
| 5   | CS    | 692 | ASN  | 2.2  |
| 7   | CG    | 714 | ASP  | 2.2  |
| 4   | BR    | 72  | ILE  | 2.2  |
| 3   | DC    | 383 | GLY  | 2.2  |
| 6   | BM    | 578 | GLU  | 2.2  |
| 5   | BS    | 634 | TRP  | 2.2  |
| 1   | BH    | 119 | CYS  | 2.2  |
| 4   | DD    | 63  | ILE  | 2.2  |
| 5   | AE    | 608 | GLN  | 2.2  |
| 3   | DC    | 357 | LYS  | 2.2  |
| 3   | DJ    | 395 | TYR  | 2.2  |
| 5   | DS    | 687 | LEU  | 2.2  |
| 4   | AR    | 49  | THR  | 2.2  |
| 3   | DJ    | 399 | MET  | 2.2  |
| 4   | BD    | 52  | ASP  | 2.2  |
| 3   | AJ    | 394 | ARG  | 2.2  |
| 5   | CS    | 644 | GLU  | 2.1  |
| 1   | BH    | 179 | SER  | 2.1  |
| 8   | AX    | 801 | G    | 2.1  |
| 2   | BB    | 239 | HIS  | 2.1  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 6   | AM    | 550 | TYR  | 2.1  |
| 4   | AR    | 56  | ALA  | 2.1  |
| 5   | CS    | 690 | VAL  | 2.1  |
| 2   | DI    | 249 | ASN  | 2.1  |
| 3   | BC    | 384 | LYS  | 2.1  |
| 3   | BC    | 386 | LYS  | 2.1  |
| 5   | DS    | 683 | ASN  | 2.1  |
| 4   | CK    | 39  | MET  | 2.1  |
| 1   | AA    | 172 | LEU  | 2.1  |
| 4   | AK    | 5   | VAL  | 2.1  |
| 4   | DK    | 78  | LYS  | 2.1  |
| 5   | DL    | 658 | LEU  | 2.1  |
| 1   | AO    | 119 | CYS  | 2.1  |
| 4   | BD    | 56  | ALA  | 2.1  |
| 5   | AL    | 623 | ARG  | 2.1  |
| 1   | CO    | 169 | LEU  | 2.1  |
| 7   | BU    | 721 | LEU  | 2.1  |
| 3   | AJ    | 354 | GLY  | 2.1  |
| 4   | BR    | 71  | LEU  | 2.1  |
| 4   | CR    | 43  | MET  | 2.1  |
| 1   | AH    | 183 | GLU  | 2.1  |
| 1   | CH    | 126 | ILE  | 2.1  |
| 6   | DF    | 563 | LEU  | 2.1  |
| 1   | BH    | 117 | MET  | 2.1  |
| 4   | BK    | 39  | MET  | 2.1  |
| 1   | AH    | 137 | HIS  | 2.1  |
| 1   | BH    | 184 | GLY  | 2.1  |
| 7   | DU    | 712 | PHE  | 2.1  |
| 1   | CO    | 114 | ASP  | 2.1  |
| 2   | CI    | 281 | VAL  | 2.1  |
| 4   | AR    | 16  | HIS  | 2.1  |
| 5   | CS    | 635 | LEU  | 2.1  |
| 4   | AD    | 4   | GLY  | 2.1  |
| 3   | BQ    | 386 | LYS  | 2.1  |
| 1   | DH    | 142 | LEU  | 2.1  |
| 1   | DH    | 169 | LEU  | 2.1  |
| 3   | DJ    | 382 | LYS  | 2.1  |
| 5   | BE    | 676 | ARG  | 2.1  |
| 7   | BU    | 763 | ARG  | 2.1  |
| 6   | DM    | 577 | GLU  | 2.1  |
| 7   | AG    | 740 | LEU  | 2.0  |
| 4   | BD    | 67  | LYS  | 2.0  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 6   | AM    | 585 | ARG  | 2.0  |
| 1   | BO    | 152 | LYS  | 2.0  |
| 2   | BI    | 226 | HIS  | 2.0  |
| 1   | BH    | 185 | PRO  | 2.0  |
| 2   | DP    | 234 | VAL  | 2.0  |
| 3   | AC    | 320 | GLU  | 2.0  |
| 5   | AE    | 690 | VAL  | 2.0  |
| 2   | BP    | 229 | ILE  | 2.0  |
| 3   | CQ    | 401 | LEU  | 2.0  |
| 5   | CS    | 649 | GLY  | 2.0  |
| 7   | CU    | 747 | GLU  | 2.0  |
| 2   | AB    | 231 | GLY  | 2.0  |
| 3   | BJ    | 392 | LYS  | 2.0  |
| 1   | AH    | 118 | ARG  | 2.0  |
| 3   | DC    | 343 | LEU  | 2.0  |
| 7   | BN    | 728 | GLN  | 2.0  |

## 6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

## 6.3 Carbohydrates ⓘ

There are no carbohydrates in this entry.

## 6.4 Ligands ⓘ

There are no ligands in this entry.

## 6.5 Other polymers ⓘ

There are no such residues in this entry.